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PLANNING AS A TRANSFORMATIVE ACTION IN AN AGE OF PLANETARY CRISIS



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Colophon

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Congress Opening Session

Congress Opening Session / 2084

Urban Political Ecology: Prefigurative Planning for a Climate emergency

In this talk I argue that Urban Political Ecology's (UPE) ontologies, epistemologies, and methods are not simply an academic exercise; they are scientific developments that make academic research more relevant to the politics of climate change. UPE unsettles 'traditional' understandings of 'cities' as ontological entities separate from 'nature', and develops methods to examine how urbanization is inseparably and metabolically interlinked with flows of capital, labour, and resources, and with the metabolism of the entire biophysical world. In the talk, I propose ways forward, to replace the currently dominant catastrophism over climate, with new forms of prefigurative politics and use values to promote socio-political action for 'impossible' solutions. I draw partly upon the books: *Turning Up the Heat: Urban Political Ecology for a Climate Emergency* (Kaika, Keil, Mandler and Tzaninis (eds), 2023; Manchester UP); and *Class Meets Land: the Embodied History of Land Financialization* (Kaika and Ruggiero, 2024, U of California Press)

Congress Opening Session / 2085

Planning Istanbul in Hard Times with(out) Great Expectations

The recently completed Vision 2050 Action Plan took as its starting point the intersecting global crises expected to define the 21st century, recognizing that their most dramatic consequences will be felt in metropolises like Istanbul. The Action Plan aims to address these vulnerabilities in order to create a more sustainable and resilient Istanbul.

In line with this perspective, the recently launched upper-scale planning initiative—namely, Istanbul Plan 2050—asserts that the aggressive and expansionist growth model that has shaped the city in recent decades is no longer sustainable due to the high social, geo-ecological, and economic costs it generates. Rather than preventing vulnerabilities, this model in fact amplifies them. While a number of mega-projects targeting ecologically sensitive zones well outside the built-up areas are being promoted, the existing built environment—and the lives of millions of Istanbul residents—remain under imminent threat from a major earthquake. Similar vulnerabilities appear in the form of the degradation of the environment and the ecological services as well as the inability to regenerate livelihoods for large segments of society caught in cycles of unemployment and social precarity and housing crises.

Rejecting the paradigm of so-called 'expansionism' and 'creative destruction'—which legitimizes opening up non-urbanized ecological areas to development and encourages redevelopment within the existing built environment—Istanbul Plan 2050 instead embraces a logic of compactness that centers on the reproduction, repair, and resilience of the urban fabric, while addressing accumulated damages and inherent vulnerabilities head-on.

Keynote Speakers

Keynote Speakers / 2086

Just Sustainabilities in Policy, Planning and Practice

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In his talk, Julian will outline the concept of 'just sustainabilities' as a response to the 'equity deficit' of much sustainability thinking and practice. He will explore his contention that who can belong in our cities will ultimately determine what our cities can become. He will illustrate his ideas with examples from urban planning and design, food justice and the 'Minneapolis Paradox'.

Keynote Speakers / 2087

The Paradoxical Potential of Interregnum: Exploring Opportunities for Transformative Planning in Times of Crisis

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As the ideological frameworks of post-neoliberalism and post-modernism approach their endpoints, we find ourselves in a transitional phase, a period Antonio Gramsci described as the interregnum, where the old order is dying but the new has yet to be born. This in-between moment, marked by uncertainty and disorientation, also holds the paradoxical potential for transformation. Contemporary planning discourses, which once aimed to serve bridging and corrective functions, have increasingly fallen short, remaining largely rhetorical and fragmented. In this context, the interregnum compels us to reimagine the role of planning in the face of systemic crises. Rather than seeking immediate solutions within the constraints of failing paradigms, we must instead foster collective imagination to conceptualise and construct alternative futures. This paper argues for a reorientation of planning thoughts toward a "post-neoliberal" ethos grounded in transformative, inclusive and anticipatory approaches that embrace the uncertainty of the interregnum as a generative space for systemic change.

Keynote Speakers / 2088

After Green Growth: Satiation As the Strategic Impulse for Spatial Planning

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Green growth is currently the dominant paradigm in spatial planning. This approach equates living standards with economic wealth and assumes that technological innovation can reconcile the increase of financial wealth with ecological targets. However, it is increasingly evident that green growth fails to achieve social and ecological objectives. Today, growth aggravates, rather than preventing, unprecedented levels of global inequality and ecological destruction.

Spatial planning has long been aware of these issues but has not changed course. Instead, it has confined itself, with limited success, to managing green growth. Planning promotes green, nature-based, circular, and smart innovations, to create economic resources to be then captured for social purposes. So far, however, this approach has failed to make essential services and spatial qualities more accessible or affordable. It has also fallen short of sustainability targets.

Instead, it has trapped planners in an endless cycle of fostering economic competitiveness on the one hand, while seeking to mitigate the negative social and environmental impacts of this process on the other. To address worsening affordability and ecological crises, planning tends to further increase the transfer of public wealth into private hands.

The talk will begin by exposing the limits of planning for green growth. It will demonstrate that the expansion of urban centers relies on the exhaustion of land and labor, both in affluent and in poorer regions. This has intensified the power divides between rich and poor, urban and rural, imperial core and periphery. Simultaneously, it has trapped planning in a vicious cycle of growth promotion and green management, which is increasingly difficult to navigate.

Next, the talk will introduce a new planning paradigm, which prioritizes satiation: the fulfillment of essential needs through the provision of essential services. Satiation refers to expanding essential services for the many by intentionally reducing excessive wealth and environmentally harmful activities. The focus on meeting needs can foster just and regenerative relationships between urban areas and their global hinterlands. Satiation is the core of both postgrowth and degrowth critiques of current economies.

The talk underlines that the need for satiation has gained momentum in planning and argues that planners have the tools already to bring this impulse to life. An increasing number of planning scholars and practitioners are aware of the limitations of their existing frameworks and toolkits. What is lacking, however, is the public and political support required to embrace an alternative planning paradigm: a strategic impulse. The talk will address this strategic challenge and explore pathways for institutional change that build on existing practices to create planning futures that overcome the limitations and impasses of green growth.

Keynote Speakers / 2089

The green transition challenge. Social and environmental inequalities in housing

In the last decades, we witnessed the development of a relatively new line of research on the role of welfare policies addressing the social consequences of the ecological crisis and of the green transition. Concepts such as sustainable welfare, just transition, or and eco-social justice, have been used to portray the challenges ahead and the need for a paradigm shift. The urgency to challenge the current unsustainable growth model went parallel to the need to explore and investigate how welfare policies should address societal needs within ecological limits and planetary boundaries. The presentation will explore this relationship addressing housing and environmental policies and their entanglements.

Networking Event

NETWORKING EVENT / 2090

GPEAN Networking Event: Housing in the Global South -Challenges and Opportunities for Planning Education

Organized by the Global Planning Education Associations Network (GPEAN)AESOP Annual Congress –Istanbul, July 2025

Housing remains one of the most urgent and complex challenges facing cities globally and mainly in the Global South. Despite sustained efforts, housing deficits continue to grow, shaped by rapid urbanization, climate vulnerabilities, social and spatial inequalities, land market pressures, and the increasing precarity of livelihoods. The global policy response, spearheaded by organizations such as UN-Habitat, has placed housing at the center of sustainable urban development agendas. Yet, planning education has often struggled to respond meaningfully to the scale, diversity, and political dimensions of the housing crisis across the Global South.

This 90-minute networking event, hosted by the Global Planning Education Associations Network (GPEAN), will bring together academic leaders from GPEAN member associations, scholars, and practitioners working on housing, but not only, to critically explore the intersection between housing challenges and planning education with a focus on the Global South. It aims to generate dialogue around the following key questions:

- How are planning curricula engaging with the realities of housing production, regulation, and everyday practices in the Global South?

What pedagogical innovations are emerging to address housing justice, informality, and affordability within planning programs?

- How can planning education contribute to more grounded, inclusive, and policy-relevant approaches to housing, in alignment with global agendas such as the New Urban Agenda and the Sustainable Development Goals?

The session will feature inputs and facilitate discussion and interactive networking among participants. It is envisioned as an open and informal space for exchange, and the identification of future collaborations among planning educators and researchers.

Held during the AESOP 2025 Congress in Istanbul—a city emblematic of many of the housing tensions faced across the Global South and North—this event also offers a timely opportunity to reflect on comparative insights and shared challenges in housing education globally.

By fostering connections across regions and disciplines, this networking session contributes to GPEAN's ongoing efforts to strengthen the global dialogue on planning education and to enhance its responsiveness to the pressing housing needs of our time.

Roundtable 1

RT_01 CO-CREATING THE 15-MINUTE CITY / 2040

CO-CREATING THE 15-MINUTE CITY - (Hosted within track 3: Mobility)

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The concept of the 15-minute city has been widely discussed in literature and urban planning and design practice over the last few years. Emerging from the compact city idea, Carlos Moreno developed it further and transformed it into a more comprehensive vision. As a result, it caught the attention of researchers, local government leaders, and practitioners worldwide, with special attention paid to this in Europe.

The same applies to various approaches to public participation and the co-creation of contemporary cities. Coming from the original concepts emerging from the “ladder of participation”, they found their way to planning practice and have become some sort of a standard. In addition, the more developed concepts of co-creation of urban spaces have been developed.

However, there is still little experience in applying this co-creation philosophy to the process of shaping the compact, 15-minute city. In addition, there is also little connection between the process of shaping the 15-minute cities and employing the innovative tools, methods, and techniques associated with participation, including Augmented Reality and Virtual Reality based ones.

Within this session, there will be discussed issues in shaping the usage of these innovative tools, methods, and techniques associated with public participation in the process of shaping the 15-minute city and placemaking. In addition, the possibility of combining them with more traditional ones –including usage of the physical models and maps –will be discussed.

These presentations and follow-up discussions will be based on the preliminary results of the on-going Driving Urban Transition ENACT (Envisioning Neighbourhoods and Co-Creating Thriving Communities in the 15-Minute City) project based on four Urban Living Labs, organized in Trondheim, Gdansk, Valencia, and Oxford. The objectives of the project include:

1. To understand how co-creation methods and state of the art tools can be used in combination to achieve more inclusive, accessible, attractive and sustainable public spaces, streets and neighbourhoods.
2. To develop, test and validate physical and operational interventions that will influence people’s ability to use active transport in (sub)urban areas within the context of four different Urban Living Labs (ULL).
3. To disseminate recommendations for realizing the 15mC and identify how barriers to their implementation can be overcome, to maximize transferability and scalability.

As a result, the proposed round table will allow discussion on the creation of the people-centered 15-minute city and how digital tools can be associated with stimulating and enabling public participation and co-creation of space and placemaking.

Keywords:

Co-creation; 15-minute city; public participation; innovative participation tools

Roundtable 2

RT_02 WHAT IS NEW IN COMPARATIVE INTERNATIONAL PLANNING: WHY, WHAT, AND HOW? / 2041

WHAT IS NEW IN COMPARATIVE INTERNATIONAL PLANNING: WHY, WHAT, AND HOW?

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In this roundtable contributors to a forthcoming compilation - the Routledge Handbook on Comparative International Planning - will discuss the current state of the field of comparative international planning studies.

Comparative international planning research has a considerable history and the reasons for undertaking such work have been well rehearsed in the literature from at least the 1970s. The comparative impulse can derive from multiple and often complementary motivations. For example, from an interest in studying and learning from other places as means of general or personal enrichment; comparing the governance performance in different places (e.g. in meeting sustainability goals); studying different planning approaches and their effectiveness in addressing particular planning themes; improving understanding of different situations and planning contexts; developing theories or shaping and influencing agendas and supporting government lobbying. A distinct feature of international comparative studies in planning is that these are not the sole preserve of academics. In fact, there is a significant amount of comparative work being undertaken in planning practice both by the public sector as well as large international consultancies. Planning education is also characterised by varied methods of comparative international studies and the teaching and learning of the subject in Higher Education is explored by a section and contributions in the compilation with a particular emphasis on dissecting methodological approaches.

The roundtable will stimulate critical reflections across these three domains of planning - research, practice, education - including interrogations of power relations amongst global regions and the potential for the adoption of decolonial perspectives. Though it will highlight the value of adopting a comparative approach, it will also highlight its possible limitations. The roundtable will emphasise that a comparative approach must be grounded in a good understanding of the local context, and that the methodology adopted, level of analysis, scope, scale, language, transferability, and the direction of flow of ideas (considering the decolonial perspective mentioned above) all require considerable attention.

Roundtable 3

RT_03 RETHINKING DEMOCRATIC URBAN PLANNING: REFLECTING ON EQUITABLE AND ETHICAL APPROACHES FOR THE MULTI-CRISIS ERA / 1948

Rethinking Democratic Urban Planning: Reflecting on Equitable and Ethical Approaches for the Multi-Crisis Era

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Despite a growing number of urban policies promoting multi-sectoral cooperation, robust theoretical foundations on collaboration, justice, and social inclusion, and emerging co-production, co-creation, and co-design approaches, adverse global political and economic trends continue to erode democracy in urban development. This erosion manifests in poor policy implementation, the critique of collaborative planning as a smoke-screen for unilateral decision-making, and the sporadic rather than systemic application of cooperative planning practices.

This roundtable examines the erosion of democracy in urban development as a critical challenge in the context of the multi-crisis era of the society, marked by climate change, economic instability, social inequality, and political polarization. A core consequence of this erosion is the contested legitimacy of urban planning. Instead of serving as a tool to protect the public interest, contemporary urban planning increasingly struggles against populist and authoritarian political regimes, as well as neoliberal economic pressures. Thus, we will explore the concepts and methods of democratic urban planning aimed at rebuilding public trust and reinvigorating planning as an essential tool for equitable and ethical urban development.

The discussion will address the following questions:

1. How can we comprehensively assess democratic urban planning across Europe, considering varied historical paths, planning traditions, and the interplay between global trends and local dynamics? Which stakeholders are essential to enabling democratic urban planning, and how can their roles be strengthened?
2. To what extent do various planning policies and practices emerge as democratic when examined through the lenses of formal planning frameworks (institutions and instruments) as well as cultural norms deeply embedded in society? How can we ensure that these frameworks and norms align with principles of justice, inclusion, and equity? How can we localise and operationalise the general frameworks?
3. How can we facilitate knowledge transfer across diverse social spheres? How can academic insights be translated into democratic planning principles, how can these professional tenets be integrated into citizens' daily lives, and how can deliberative planning tools become embedded in administrative and procedural frameworks to improve democratic urban planning?
4. What lessons can be learnt from comparing democratic and non-democratic approaches to urban planning, and how can ethical codes of urban planning ensure accountability in decision-making processes? How can ethical principles guide the transformation of urban planning practices globally, drawing on European experience?

By convening scholars and practitioners from diverse academic, cultural, and professional backgrounds, this roundtable will identify key barriers to implementing democratic and ethical principles in urban planning. It will also explore how lessons learned

from Europe can contribute a global agenda for equitable and sustainable urban development. The discussion will emphasise the need for new practical methodologies of urban planning to combat corruption, ensure inclusive planning, and rebuild public trust in planning institutions. Ultimately, this roundtable aims to open a path toward meaningful transformation by fostering dialogue, sharing best practices, and developing actionable recommendations for democratic urban planning in an increasingly interconnected and crisis-prone world.

Keywords:

planning; democracy; equality; ethics; global trends; formal planning; cultural norms

Roundtable 4

RT_04 RADICAL ALTERNATIVES TO CLIMATE URBANISM: TOWARDS SOCIALLY AND ECOLOGICALLY JUST CITIES / 1900

Radical alternatives to climate urbanism: towards socially and ecologically just cities

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Cities are critical sites for developing responses to climate change. However, popular climate change solutions in the city have not been successful in radically transforming the urban system. Celebrated climate change mitigations solutions like high-tech low-carbon buildings, electro-mobility and renewable energy remain materially intensive as well as socially exclusive. Similarly, adaptation efforts in cities largely address economically well-off areas, while increasing vulnerabilities for others. Cities continue to remain places of capital accumulation and unsustainability, creating inequalities within the city as well as beyond the city boundaries. While the critique of the mainstream idea of climate urbanism is now well established, open questions remain on alternatives that are socially and ecologically just.

Building on the theme of the Congress, "Planning as a Transformative Action in an Age of Planetary Crisis," this roundtable adopts a critical approach to climate urbanism and re-centre social and ecological justice at the heart of the urban response. We would like to learn from both material and social practices drawing from, but not limited to, perspectives of justice (spatial, social and ecological), degrowth, urban political ecology, urban social movements, post-development that challenge as well as create alternative solutions for infrastructure, housing, energy, food, mobility and greening within and beyond the city boundary.

In conversation with the contributors, we will discuss:

- a) Why is it necessary to re-center social and ecological justice in the urban response to climate change?
- b) What do alternative responses to building a just city look like?
- c) How do these alternative responses interact with existing urban planning practices?

The contributors, experts in thinking of justice and climate action together, will broaden the understanding of climate urbanism that is not limited to reducing greenhouse gas emission through techno-fixes, rather dares to address the systemic and root causes of unsustainability and build their responses from the ground up. The roundtable will lay the foundation for a special issue on the topic in the journals *Local Environment* or *npj Climate Action*.

Keywords:

Social; Ecological; Justice; Climate Urbanism; Alternatives

Roundtable 5

RT_05 CIRCULARITY AND/OR SUSTAINABILITY? IMAGINING TRANSFORMATIVE STRATEGIES AND ACTIONS FOR THE URBAN TRANSITION / 1955

Circularity and/or Sustainability? Imagining Transformative Strategies and Actions for the Urban Transition

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As cities face multiple challenges from climate change, rapid urbanisation, and resource scarcity, urban transitions have emerged as a critical framework for planning and re-thinking urban futures. Circularity and sustainability are pivotal in these transitions, offering transformative approaches to managing resources, fostering resilience, and creating more equitable urban systems. However, how do these concepts translate into actionable actions and strategies for urban development, and can they truly address the pressing social, economic and environmental crises cities face today?

This roundtable builds on AESOP 2025's theme of "Planning as a Transformative Action in an Age of Planetary Crisis", focused on environmental, social and economic global challenges by exploring the intersection and complementarity of circularity and sustainability. It seeks to provoke a dialogue that moves beyond technical solutions and engages with urban transitions' systemic challenges and opportunities. While circular economic models, adaptive reuse, and zero-waste initiatives have demonstrated localised success, this session interrogates their scalability, temporality, and inclusiveness. Are circular and sustainable urban models accessible to diverse communities, or do they risk perpetuating inequalities? And how do we balance the focus on circularity with the imperative to reduce overall consumption and rethink innovative growth paradigms?

Participants will engage with critical questions such as: How can circularity contribute to the broader goals of urban transitions? What governance frameworks and policy innovations are needed to align circular and sustainable actions and strategies? How do circular practices address socio-economic inequalities and promote inclusivity in urban spaces? What role do cultural and behavioural shifts play in advancing sustainable urban transitions?

The session will feature contributions drawing on theoretical insights and empirical research which investigates planning policies, strategies and practices, on one or more of the following topics:

- The intersection and complementarity of circularity and sustainability;
- Policy and governance innovations supporting circular and sustainable urban transitions;
- Case studies highlight both successes and limitations;
- The integration of circularity and sustainability with social justice and innovation in urban development;
- Circularity and sustainable nature based frameworks;
- Behavioural and cultural changes required for systemic transformation.

Aligned with AESOP 2025's theme of rethinking urban transitions, this roundtable aims to inspire new perspectives and actionable strategies for cities navigating the complexities of the 21st century. Critically examining circularity and sustainability through the lens of equity and innovation will foster a deeper understanding of the pathways to transformative urban futures. Together, we will explore how to translate circularity and

sustainability into inclusive, scalable, and impactful practices that redefine our urban future.

Keywords:

Circularity; Sustainability; Urban Transition; Social justice and innovation.

Roundtable 6

RT.06 LEARNING THROUGH INSTITUTING. IMPACTS OF CIVIC ACTION ON INSTITUTIONS AND THE POTENTIAL FOR THE PRODUCTION OF PUBLIC VALUE IN PLANNING / 1919

Learning through instituting. Impacts of civic action on institutions and the potential for the production of public value in planning

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There has long been a debate on whether and how civic action can contribute to redefining the role and functioning of institutions. Institutional change is not merely a rational or regulatory process; it is a path of trial and error. This process can lead to changes not only in the set of rules, procedures and methods of labor division in a given organization but also in the actual system of power, affecting relationships of conflicting interests that drive institutional dynamics (De Leonadis, 2024).

Institutions can be seen as both cognitive and practical routines, embodied in the habitus of social agents, guiding their action along already marked paths shaped by the flow of past actions. They are therefore often taken for granted as they are, so much so that their inertia very often leads to an impoverishment of the cognitive repertoire of the actors themselves who compose it. However, this does not mean that they cannot change (Ibidem, 2024).

Institutions are supra-individual units of analysis, with properties that cannot be reduced to the aggregation of individual motives or interests (Powell, Di Maggio, 1991). Processes of learning and change strongly depends on the nature of institutions, which are products of intentional human action. This action does not occur in a vacuum, but it is immersed –anchored or embedded –in a socially and culturally structured field. Social ties, regulatory technologies, moral considerations, material objects and places influence how institutions and decision making processes occur (Lieto, 2013).

Focusing on institutional learning and change do not mean to shifting attention away from civic action. On the contrary, the potential for learning and change within institutions heavily relies on how civic action is organized, shaped, and infused with competencies and visions.

Despite for years, planning scholars have focused on the relationship between civil society and institutions (Friedmann, 2011) –ranging from collaboration (Healey, 1997; Forester, 1999) to harsh conflict (Huxley and Yiftachel, 2000; Miraftab & Wills, 2005), from coproduction (Albrechts, 2013; Balducci, Mäntysalo, 2013; Watson, 2014; Ostanel, 2024) to agonism (Mouffe, 2005; Purcell, 2008) –we think it is time for a step forward.

Based on these premises, this roundtable aims to understand the preconditions, mechanisms, and outcomes of learning processes within what have been defined as ‘instituting processes’ (Esposito, 2021; 2022; Li Destri Nicosia & Saija, 2023), emphasizing

the various impacts of civic action on the body of institutions and discussing the real potential for driving institutional change and the production of public value.

We seek scholars and researchers who aim to join us and discuss these main issues.

- How institutions of different kinds and at different levels can 'learn' in the field of urban transformations being confronted with civic action?

- What are the outcomes of this process of change in the institutional body, thus considered not only a procedural fact but a very complex environment made by routines, cultures, competencies, instruments and decision-making processes? What's the outcome on the production of public value?

- How is the potential learning relation organized and shaped and how possible routines or instruments be seen as facilitators/translators?

This roundtable is organized in the framework of the Project of National Interest PNRR 2022 RESISTING - REconnecting Social innovation with InSTitutions in urban planning.

Keywords:

planning; institutions; coproduction; conflict; civic actions

Roundtable 7

RT.07 CITY-MAKING BEYOND CRISIS MANAGEMENT: TOWARD JUST URBAN POLICIES / 1951

City-Making Beyond Crisis Management: Toward Just Urban Policies

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Urban policies are not static—they evolve, adapt, and sometimes fade away. Their lifecycle is shaped by “middling actors”—urban professionals, activists, and bureaucrats—who navigate complex socio-political landscapes while co-producing and implementing policies, mediating between diverse stakeholders, and drawing on successful precedents. Yet, their work is fraught with tensions arising from land commodification, climate crises, and armed conflicts, all exacerbated by neoliberal urbanism and urban extractivism.

This roundtable critically examines the lifecycle of urban policies, the agency of those involved, and the conflicts they navigate. Inspired by Brazilian philosopher Nêgo Bispo's phrase: “*O começo, o meio e o fim*” (“The beginning, the middle, and the ending”), we propose a processual approach to urban policy design and implementation to explore negotiation, adaptation, and resistance.

1. Power Dynamics in Urban Policy Formation

Who are the middling actors, what are their positionalities, and how do they negotiate power within multi-level urban governance? How do policies emerge from these interactions, and how do unequal power dynamics shape or hinder inclusive decision-making? When does participation reinforce exclusion rather than fostering just urban policies?

1. How Urban Policies Travel, Adapt, and Move Forward

How do policies travel across different contexts while retaining their core values, and what role does political agency play in their adaptation? How can urban policies remain relevant in rapidly changing environments while overcoming power imbalances and institutional inertia? How do shifts in political power influence the interpretation and implementation of existing policies?

1. How Urban Policies Fade Out (or Not)

How can trust and stewardship be sustained beyond funding or political cycles? How to create policies for maintenance? What does a “good death” for a policy look like, and how can its lessons be carried forward?

1. Making Change: Towards Justice-Oriented Urban Policies

How can middling actors push urban policies beyond tokenistic participation toward structural transformation? What strategies can make city-making more equitable?

Drawing on feminist and Global South perspectives, this session explores creativity, trust-building, and collective vision in urban policy-making—while avoiding romanticised notions of participation and foregrounding the conflicts that shape urban transformation. Guided by the questions above, we will address various cases and discuss different scales and scopes of practices, from neighbourhood-level to ecosystem-level planning, considering the lifecycle of urban policies.

Within this roundtable, we will critically engage with how urban planning can shift from reactive harm mitigation to proactive justice-oriented practices, fostering policies for equitable and inclusive urban environments.

Keywords:

Urban Policy Lifecycle; Middling Actors; Power Dynamics; Justice-Oriented Urban Planning

Roundtable 8

RT.08 STRATEGIES FOR INCREASING HEAT RESILIENCE IN CITIES –WHERE DO WE GO FROM HERE IN PLANNING RESEARCH AND PRACTICE? / 1899

Strategies for increasing heat resilience in cities –Where do we go from here in planning research and practice?

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Planning and preparing for heat stress and heat waves are high-priority issues in cities across Europe and elsewhere –at least in theory, if not in practice. Efforts of dealing with heat stress and heat waves are closely related to efforts of climate change adaptation as one component of climate policy (the other component being climate change mitigation). Increasingly, researchers seek to assess the state of art and activity level of cities with regard to climate policy in general, climate change adaptation in particular (e.g., see the survey of Otto et al. 2021 on German cities, Reckien et al. 2018, Galderisi et al. 2020, Reckien et al. 2023 on European cities, see Araos et al. 2016, Berrang-Ford et al. 2021, Fu et al. 2024 with regard to a global perspective).

Against this background, the Round Table addresses issues of strategies to increase heat resilience in cities from the perspective of strategic spatial planning (Healey 2009). The term resilience covers efforts of adaptive as well as transformative resilience. Input statements of researchers from Northern and Southern Europe provide insights into the state of work in cities like Athens, Dresden, Frankfurt, and Vienna. Input statements and contributions to discussion may refer to qualitative and quantitative research on planning (in the sense of small- and large-N research, Goertz & Mahoney 2012). The Round Table is organized to suggest some issues of high priority for future work in planning research and practice.

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Keywords:

Adaptive resilience; Heat wave; Strategic spatial planning; Transformation

Roundtable 9

RT.09 INTEGRATING DIGITAL TRANSITION AND TERRITORIAL DEVELOPMENT: A CO-EVOLUTIONARY APPROACH / 1947

Integrating Digital Transition and Territorial Development: A Co-Evolutionary Approach

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The concept of the digital divide was introduced and evolved in parallel with the development of the internet and, more broadly, the digital ecosystems that have shaped European societies over the past three decades. Several strands of research can be identified, each contributing to the evolution of this concept through complementary perspectives that have helped shape the multifaceted understanding attributed to the digital divide today. The digital divide has traditionally been understood and studied with a focus on individuals, social groups, or organizations. However, re-framing and interpreting this concept at a regional scale introduces a new set of challenges and opportunities for analysis. Much of this research is conducted at the national level, but such studies often fail to capture the complexity of regions as socio-institutional entities—a dimension that is typically better understood in studies focusing on nations or cities. Unlike nations or cities, regions require a more nuanced approach that considers their unique socio-economic, cultural, and institutional dynamics. This gap in research is particularly pressing, as the digital transition continues to transform how territorial and regional development is conceived and governed. The digital transition refers to the ongoing shift from traditional systems and practices to those driven by digital technologies. This process encompasses not only the adoption of digital tools but also broader transformations in economic structures, institutional arrangements, and social dynamics resulting from the integration of digital technologies into everyday life. Importantly, the digital transition unfolds differently across regions, sectors, individuals, companies, and public administrations, depending on varying local conditions and capabilities. While the concept of the digital divide can, to some extent, be conceived as decontextualized from specific geographical settings, the digital transition is always inherently tied to a specific territorial scale. The regional digital divide extends the concept of the digital divide to focus on disparities between regions or territories. These disparities encompass inequalities in access to digital technologies, the ability to utilize them effectively, and the socio-economic impacts of digitization. The way in which digital technologies are integrated into a particular region is shaped by the unique socio-economic and institutional characteristics of that region, making the digital transition a spatially contextualized process. This interplay highlights the need for approaches that integrate digital policies with territorial development strategies. Yet, planners often address these domains independently, leaving the digital policies to be set and implemented independently of territorial development. The main concerns: It is a shared vision that socio-economic development at the regional scale is consequent to the advancement of digital infrastructures and services, while the idea for a co-evolutionary vision would guarantee more efficient investments, equitable territorial attractiveness, and reduced territorial fragility. The roundtable aims at discussing how to develop research methodologies and policy approaches that can support such a co-evolutionary vision.

Keywords:

Digital divide; digital transition; territorial development

Roundtable 10

RT_10 URBAN LIVING LABS IN EDUCATION –HYBRID AND TRANSFORMATIVE SETTINGS FOR COLLABORATIVE LEARNING AND RESEARCH IN CITIES AND REGIONS / 1923

Urban Living Labs in Education –Hybrid and transformative settings for collaborative learning and research in cities and regions

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In recent decades, co-design and co-production working methods have been increasingly developed and tested in planning and architecture as an alternative approach to spatial production. These are still individual pilot projects. At the same time, the question of promoting this approach in education is being discussed and projects are being carried out in various living lab settings.

The roundtable will demonstrate the range of these practice-oriented educational approaches. The aim is to shed light on different aspects and to relate them to each other and to the “classical” world of planning and architecture. These range from the confrontation with practice right from the start of the projects to an active relationship between theory and practice. From working methods, organizational forms and structures, responsibilities in project work and laboratory operations. From inter- and trans-disciplinarity to openness and flexibility in teaching across university and institutional boundaries. From dimensions of collaboration in design and research. And last but not least, a new type of public-civil cooperation as a “third mission” in education through direct cooperation with communities, civil society or the local economy.

The roundtable will collect project examples, discuss structures and methods, tactics and strategies, and network interested stakeholders with the aim of strengthening co-educational approaches.

Keywords:

Urban Living Lab, Transdisciplinarity, Third Mission, Co-Production, Co-Education

Roundtable 11

RT_11 ROUNDTABLE ON CO-PRODUCTION OF KNOWLEDGE FOR TRANSFORMATIVE ACTION / 2042

ROUNDTABLE ON CO-PRODUCTION OF KNOWLEDGE FOR TRANSFORMATIVE ACTION –(Hosted within track 8: Education and Skill)

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The escalating planetary crises, including climate change, rapid urbanization, and social inequality, underscore the urgent need for transformative actions in urban planning. To address these global challenges, the potential of interdisciplinary collaboration, knowledge co-production and cross-sectoral partnerships to create innovative solutions tailored to the diverse needs of communities is increasingly emphasized and explicitly stated in the Cairo Call to Action, which captures the key messages of the recent World Urban Forum.

In this roundtable, we will focus on universities' role in the co-production of knowledge building on the findings and networks established during the past four years of research under the international, transdisciplinary funding priority SURE –Sustainable Urban Regions, bringing together researchers and knowledge networks across Europe and Asia. One of the key takeaways from this research is that knowledge co-production in urban research requires transdisciplinary teams and integrated efforts to build knowledge grounded in local realities while addressing global challenges. Localized data plays a central role here, enabling communities to provide grassroots insights that inform and refine urban planning efforts.

Universities, as “engines of knowledge,” can play a pivotal role in supporting and involving communities in the generation, review, and analysis of data. However, effective co-production depends on mutual validation: local communities must review data to ensure relevance and accuracy, while open access, shared definitions and harmonized methodologies are necessary for comparability and to scale local impact across different regions. This inevitably raises the question about the transferability of knowledge – what can be transferred, and how, for example, methodologies can be adapted to different local conditions. These issues will be critically discussed in the roundtable by representatives of universities and knowledge networks with diverse international project experience.

To sum up, the roundtable will explore the challenges and opportunities of knowledge co-production in international urban research focusing on the role of universities and their networks. By emphasizing collaborative research that leads to tangible outcomes, the discussion will critically examine how universities can serve as catalysts for transformative action, driving progress through partnerships with local communities and policy-makers and fostering international knowledge exchange. The session aims to build an international network of urban researchers advancing knowledge co-production through innovative methods, tools, and strategies. By uniting researchers from diverse networks, we seek to form strong coalitions to contribute to the pressing global and interconnected challenges that cities worldwide face today.

Roundtable 12

RT.12 BEYOND THE PROCESS: DIFFICULTIES FOR THEORISATION WITHIN PLANNING RESEARCH AND PRACTICE / 2043

BEYOND THE PROCESS: DIFFICULTIES FOR THEORISATION WITHIN PLANNING RESEARCH AND PRACTICE –(Hosted within track 10: Theories)

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This roundtable brings together contributors to the ARL Working Group; ‘Beyond the Process –Finding common ground for a discussion on planning’s substantial foundation’, to discuss the difficulties associated with grasping a common theoretical foundation for spatial planning.

Spatial planning activities often struggle for legitimacy in the face of populist politics, neoliberal forces and moves towards automation and digitisation, exacerbated by their often lacklustre contributions to addressing multiple crises (e.g. environmental, housing, economic etc.). Consequently, a lack of substantial theoretical foundation can be framed as undermining the discipline’s continued existence; without a substantial foundation how do we effectively communicate the positive contribution made by spatial planning and those that practice it in the face of such powerful forces? How do we communicate the importance of spatial planning to those who might be interested in practicing it in the future?

Reflecting on the importance of theory in educating future planners, John Forester writes about the normative role of planning theory:

“I take the task of planning theory only in part to do justice to the experience of contemporary planners facing the uncertainties, conflicts and political complexities they confront. But planning theory should do more: it should address possibilities for still better planning, possible directions for innovative work, avenues toward greater social welfare and lesser exploitation and domination, avenues toward lesser environmental degradation and toward more beautiful human environments. I take the challenge of planning theory to be not simply deconstructive, exposing false promises and self-serving rhetoric of ideologues, for example, but reconstructive, informing possibilities for human and environmental betterment.” (Forester, 2007, p.242)

Yet, the starting assertion for the roundtable is that our body of planning theories has become overly focused on procedural approaches, whilst being, simultaneously, often impracticable for practitioners and belying a lack of agreement amongst academics about what constitutes a substantial foundation for spatial planning. Starting from this premise, each contributor will discuss their perspective on the ‘sore spots’ of planning theory:

- What is missing or lacking from our current constellation of planning theory?
- Which aspects of spatial planning require further attention in planning theory?
- What theoretical approaches can move us away from the tensions between theories of planning focused on substance and procedure?

Ultimately, the roundtable aims to stimulate discussion around the state of contemporary planning theory and consider whether a common theoretical foundation for planning is possible or desirable.

Keywords:

Planning theory; substantive theories; procedural theories

References:

Forester, J. (2004). Reflections on trying to teach planning theory. *Planning Theory & Practice*, 5(2), 242–251.

Roundtable 13

RT_13 FUNDAMENTAL? OR BEST FORGOTTEN? CONTEMPORARY PERSPECTIVES ON THE PUBLIC INTEREST / 2044

FUNDAMENTAL? OR BEST FORGOTTEN? CONTEMPORARY PERSPECTIVES ON THE PUBLIC INTEREST

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The concept of the public interest has long been bound up in debates about the purpose of, and justification for, planning activities. Yet, writing at the beginning of the 21st Century, Campbell and Marshall (2000) highlight that:

“What constitutes the public interest has always been contentious but its value as a legitimising concept has been increasingly called into question in the recent past. It is a term which has often been used to mystify rather than clarify...it is frequently used as a device to cast an aura of legitimacy over the final resolution of policy questions where there are still significant areas of disagreement.”

(Campbell and Marshall, 2000, p.308)

The concept is simultaneously a carrier of many meanings and of no meaning; its inherent lack of content beyond the vague notion of serving the public leaves it open to being appropriated for less than normative purposes and, despite a lineage debating back to Aristotle, its practical application remains contested. On the other hand, it remains a justification for action that the discipline of planning clings onto; without a remit to serve the public what reason is there for spatial planning to exist?

Using the theory and practice of spatial planning as a basis, the aim of this roundtable is to present a range of contemporary perspectives, some optimistic, some less optimistic, about the relevance of the concept as we move further into the 21st Century. Each contributor will be asked to respond to the following questions:

- Does/should the public interest remain a relevant as a conceptual basis for spatial planning?
- How should the public interest be theorised or conceptualised?
- Is the public interest a relevant concept for practitioners?
- To what extent is a consensus needed around who or what constitutes the public?

Some contributions will focus on the relevance of the concept in practice, whilst others will explore how the theorisation of the public interest has evolved. Specifically, we want to draw out the contrasts and dissensus between viewpoints and generate debate about whether the public interest remains an important foundation for planning theory and practice.

Keywords:

Public Interest; Planning Theory; Planning Practice; Legitimacy

References:

Campbell H. and Marshall R. (2000) Moral Obligations, Planning and the Public Interest: A Commentary on Current British Practice. *Environment and Planning B*. 27 (2), p.297-312.

Roundtable 14

RT_14 PROJECT MANAGEMENT IN CROSS-BORDER INITIATIVES: PRACTICES, CHALLENGES AND OPPORTUNITIES / 1958

Project management in cross-border initiatives: practices, challenges and opportunities

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This roundtable will focus on the role of project management in addressing the challenges faced by EU cities, with a particular emphasis on cross-border urban projects. As cities contend with pressing issues like climate change, energy transition, digital transformation, and sustainability, effective project management is important for fostering collaboration, optimizing resource use, and achieving long-term goals.

Project management frameworks, based on global best practices, provide structured approaches, method, models and tools to planning, executing, and completing projects efficiently within defined timeframes and budgets. Frameworks such as Agile, PRINCE2, and PMBOK are effective in managing resources, risks, stakeholder and team collaboration. They incorporate planning and monitoring tools, such as Gantt charts, project dashboards, and key performance indicators, to ensure tasks are scheduled, tracked, and adjusted as needed. By utilizing these frameworks and tools, projects can maintain clear timelines, monitor progress, and address complex challenges effectively while delivering practical, sustainable results.

The discussion will highlight how management practices can bridge gaps between stakeholders, align diverse interests, and ensure that urban initiatives deliver sustainable and equitable outcomes. From the project management side the discussion can emphasise specific project management tools and approaches that fit best the needs of EU cross-border projects. It will also delve into the complexities of managing urban transformation projects in the EU, for example how cities must navigate a variety of regulatory frameworks, cultural differences, and competing priorities. Topics will include how to overcome governance fragmentation, address funding uncertainties, and drive innovation to build resilient and inclusive urban spaces.

Key topics for discussion include:

- Best practices in managing cross-border projects.
- Governance, funding, and stakeholder coordination challenges.
- The use of project management tools and methods to improve project outcomes.
- Lessons from successful EU urban projects and partnerships.

Keywords:

Project Management, Urban Transformation, Cross-Border Collaboration

Roundtable 15

RT.15 PLANNING PROFESSIONALISM AND RE-BUILDING TRUST IN A POST-TRUTH ERA / 1904

Planning professionalism and re-building trust in a post-truth era

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This roundtable will look at trust in planning and trust in planners with a focus on professionalism and expert knowledge in a populist, polarised “post-truth”, era, where the sense of “public interest” remains vital but is in dispute. In a broader international context, trust in institutions and experts is often deemed to be under pressure. However, looking more closely to trust in institutions studies show that this is only true among specific groups in society (e.g. those geographically far from governments seats, marginalized groups etc.). However, exemplified by traditional and social media, feelings of distrust of an ongoing crisis in trust in institutions and experts effect planning and planners. Especially, as trust in planning matters because planning is at the heart of increasingly contentious –and at times polarising - debates about tackling global challenges around climate, access to housing, health, and inequality. This round table, It will enable critical consideration of the commonalities and differences in the role of planning and the planner in different contexts.

It will draw on divergent experiences in the Netherlands, South Africa and the UK outline differing relationships with residents, governments and knowledges; to seek commonalities and difference between practice and practitioners. We seek new framings of how relationships of trust vary over time and context, and aim to add more conceptual and empirical depth to these questions of key social and academic importance.

Critically, this discussion aims to explore how and if we can learn through international comparison to re-building trust, critical for ensuring planning’s positive role in tackling key global challenges.

Roundtable 16

RT_16 POST-GROWTH, OR THE RETURN TO THE FABULOUS FIFTIES? EVIDENCE OF FUNDAMENTAL CONTRADICTIONS BETWEEN THEORY AND PRACTICE OF PLANNING / 1959

"Post-Growth, or The Return to the Fabulous Fifties? Evidence of Fundamental Contradictions between Theory and Practice of Planning

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Despite growing recognition of environmental and social challenges requiring a shift from traditional development paradigms, planning tools and practices remain fundamentally growth-oriented, largely unchanged from their mid-20th century features. This contradiction manifests differently across planning traditions and national contexts.

Across Europe, from South to North, we see that in major Italian cities like Rome and Milan, while explicit suburban expansion has declined, the "zero soil consumption" rhetoric (similar to "no net land take" policy in EU and "land use neutrality" Initiative in Norway), masks a continued prioritization of private development interests similar to 1950s practices. This perpetuates traditional pro-growth patterns through density maximization, green space reduction, and regulatory exemptions that favor private property owners over public planning objectives. Moreover, this seemingly degrowth strategy is evidently used to greenwash and legitimize growth-oriented agenda. Norway presents an interesting contrast between urban and rural contexts. Major cities experience "spontaneous" growth driven by economic and demographic trends, requiring no special stimulation. However, rural municipalities actively promote development through permissive regulations and simplified land conversion processes, essentially using planning policy to attract growth.

Common patterns emerge across different countries, even as urban growth shifts from expansion to densification: Frequent plan exemptions and derogations; Maximized building density; Inadequate provision of green spaces; Developer-driven location choices; Compromised collective space programming. Despite environmental messaging, contemporary urban development practices continue to prioritize private interests and deregulation, much like during the post-war building boom. This approach fundamentally contradicts stated objectives of addressing socio-environmental crises.

The key question becomes: How must planning tools evolve from their "Fabulous Fifties" origins to effectively implement different paradigms? Specifically, how can planning systems be redesigned to pursue objectives of sufficiency, reduction, and downscaling, rather than perpetual growth?

Keywords:

Pro-growth Post-growth Paradigms; Planning Theory and Practice; Post-growth Transition in Planning

Roundtable 17

RT_17 DEMONSTRATING THE APPLICATION OF DIGITAL TWINS IN URBAN PLANNING: ENSURING CITIZEN CENTRIC IMPACT / 1956

Demonstrating the Application of Digital Twins in Urban Planning: Ensuring Citizen Centric Impact

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Digital Twin (DT) technology revolutionises urban and spatial planning, providing dynamic, real-time digital replicas of physical environments. This technology enables planners to simulate, analyse, and optimise urban spaces. By integrating data from various sources, such as models, sensors and IoT devices, DTs offer a comprehensive view of urban systems, facilitating informed decision-making.

Incorporating Artificial Intelligence (AI) and data analytics, DTs can predict and maximise opportunities within cities, including areas of growth, locations for investment, and mitigate traffic congestion, pollution, and infrastructural damage. This AI synergy enhances the accuracy and efficiency of urban planning, ensuring sustainable and resilient cities.

This proposed roundtable session draws on lessons from multiple European Commission funded DT research projects from across Europe including BIPED (Building Intelligent Positive Energy Districts), TIPS4PED and Twin4Resilience.

Reflections from BIPED, funded under Horizon Europe, will demonstrate how DTs assist urban planners in navigating the energy transition and decarbonisation requirements within their city/urban environments. BIPED's ambition is to manage this transition by developing and scaling Positive Energy Districts (PEDs), a key building block in achieving city-wide climate neutrality, in the city of Aarhus, Denmark (and other cities in turn). At the core of the solution lies the advanced digital twin technology complete with AI-driven optimisation tools for better urban planning and citizen engagement.

TIPS4PED is a Horizon Europe project designed to showcase an Integrated Assessment Platform (IAP) that will help municipalities in the creation of PEDs. This platform will empower cities to make informed decisions by enabling the design, development, and efficient management of PEDs using DT technology. With an intuitive dashboard, users can easily visualise different scenarios and results. Furthermore, the TIPS4PED platform will incorporate AI-driven modules, designed to optimise the creation and management of PEDs, while also integrating smaller-scale management tools like Building Management Systems (BMS) to enhance overall performance.

Twin4Resilience (T4R), INTERREG North-West Europe co-funded project, brings together 14 partners from 6 European countries to explore the use of Local Digital Twin (LDT) for a wide variety of applications in urban areas. Moving away from technology-driven solutions, T4R focusses on wider uptake of LDTs through a jointly developed resilient implementation strategy comprising 4 transformative frameworks –technical design, governance, ethics/inclusion/democratisation, and training. Dublin, one of the pilot and frontrunner cities, will highlight various challenges and ethical dilemmas which need to be addressed before/during the implementation of LDT projects and use cases. It will also share best (data) governance practices for an inclusive and democratic approach to LDTs.

This roundtable will explore how applied methodologies facilitate the development of smart, sustainable societies by enabling precise modelling and simulation of urban environments. Our roundtable consisting of DT experts and urban/ spatial planners will explore how DTs can enable urban planners and other built environment specialists to predict and optimise energy usage, reduce emissions, and enhance the overall quality of urban life for the betterment of the citizens and the whole of society.

Keywords:

Digital Twins; Smart Cities; Positive Energy Districts

Roundtable 19

RT_19 CITY, DIVERSITY AND TOLERATION: THE LEGAL AND POLITICAL GEOGRAPHY OF PLURALISM / 1940

City, diversity and toleration: the legal and political geography of pluralism

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The roundtable arises from the conviction that the issue of “pluralism” –and the connected question of toleration –is today, more than ever, a crucial theoretical and practical problem in need of critical debate. The roundtable discussion is based on the recently published book “The Legal and Political Geography of Pluralism Supporting Diverse Public and Private Spaces in Contemporary Cities” (2025), by Francesco Chiodelli and Stefano Moroni. This book addresses questions of pluralism in a time of increasing ethnic, religious and cultural diversity in the public and private spaces of our cities, by analysing different types of regulation –property rights, municipal ordinances and urban planning. In the same vein of the book, the roundtable reflects on the kinds of rules public institutions should adopt in relation to “private spaces” as well as which ones they should promote in relation to “public spaces” in order to protect and support pluralism.

Keywords:

Toleration, diversity, public space, pluralism

Roundtable 20

RT_20 AESOP-INDIA PLANNING EXCHANGE: TOWARDS GLOBAL NORTH-SOUTH RELATION IN KNOWLEDGE PRODUCTION / 1917

AESOP-India Planning Exchange: Towards Global North-South relation in knowledge production

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The roundtable is proposed at the background of the AESOP International PhD Workshop in India in 2026. In the past, AESOP members have advocated for learning about planning education and practices from countries/continents beyond the boundary of Europe, and especially from the Global South and East countries. One of the main aims of forming the Global South and East thematic group was that the budding planners of AESOP has a lot to learn from the complexity of the Global S&E countries. The international workshop is a step towards that direction with innovative pedagogy. The focus of the workshop will be on the proposed eleven industrial and economic corridors in India. While such corridors are not always about planning, in Indian context, these corridors are the catalyst for rapid urbanisation, economic development, and are strategic and spatial planning tools. With this background, we will frame our discussion around the following questions:

- a. Why India is a significant location for such an international workshop from an urban and regional planning perspective? (Chandrima Mukhopadhyay, Coordinator of Global S&E Thematic group)
- b. An in-depth explanation of Indian planning practices (and urbanisation process); (Sandip Chakravorty, Indian Institute of Management Ahmedabad)
- c. The legacy of hosting an international workshop for AESOP and YA; (YA CT member-name TBC)
- d. The importance of bringing multiple international development organisations on board to collaborate; (Chandrima/Bruce Stiftel, Georgia Institute of Technology, US)
- e. What is the implication of the workshop for the Global North- South relationship in terms of knowledge production about south, research grants, publications about southern urban issues in international high-impact journals etc? (Bruce Stiftel & Oren Yiftachel, Ben-Gurion University of the Negev, in Beersheba & Honorary Professor at UCL)

The discussion could conclude with a presentation on the format of the workshop including pedagogy, and locations.

Keywords:

International, Workshop, India, Strategic and Spatial plans, Cross- border learning;

Roundtable 21

RT_21 COPING WITH UNCERTAINTIES AND THE POLY-CRISIS WITHIN EUROPE: THE METROPOLITAN ARENA / 1918

Coping with uncertainties and the poly-crisis within Europe: The Metropolitan arena

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The challenges regarding European Metropolitan Regions are growing in these times of a polycrisis: climate change adaption, the energy transition and a turn towards a post-carbon-economy, and variegated socio-economic and spatial fragilities, are all building up stress levels in those regions. What happens in the 'power houses' of modern urban societies, and how can we navigate these areas between strategic positioning and providing everyday life worlds? How are urban policies coping with these challenges, and what impact does the Next Generation EU policy play in addressing transformations and transition?

The RT will address related issues in a critical inquiry but also by outlining some pathways to the future of the European Metropolitan Space. Against this backdrop, the RT intends to explore three dimensions of the current transition, focusing on the nature of the game changer and the possible implementation mechanisms for innovative policy and planning responses: Urban policies dimension: Is there enough understanding of the configurations of socio-spatial-ecological formations that result from the processes of territorialisation, deterritorialization and reterritorialization within the pathways of contemporary capitalism(s)? Spatial imaginaries: What are the new spatial imaginaries, either produced by experts and institutions at EU level, but also by people, as collective constructions with a performative and normative role, in response to the 'polycrisis'? Pathways to the future of the European Metropolitan Space:

Which conceptual and methodological challenges result for public policies and planning, as conceived so far? Which scenarios can be sketched for the future of the metropolitan regions in the coming decades and under what enabling conditions can policy and planning foster just and sustainable urban regions?

The RT will bring together authors contributing to a special issue for Territory, Politics, Governance.

Keywords:

Europe, metropolitan regions, strategic planning, game changer

Roundtable 22

RT_22 LIVING WITH WATER AT THE TIME OF MULTI-RISK CONDITIONS / 1902

Living with water at the time of multi-risk conditions

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The interconnected risks faced by water cities—such as river basins, deltas, lagoons and coastal landscapes—require integrated approaches that transcend traditional planning methods and administrative boundaries. These areas, marked by ecological fragility and social vulnerability, are emblematic of the need for multi-risk and multi-scale adaptation strategies. Accelerating climate change exacerbates existing geological, hydrological, and environmental hazards, while anthropogenic pressures amplify the challenges, creating additional layers of complex to deal with risks. Despite decades of effort, the reliance on outdated planning frameworks and insufficient localized knowledge has hindered policymakers from effectively addressing these risks. This gap has led to unsustainable urban growth, escalating social inequalities, and intensifying environmental threats. A rethinking of urban metabolism and governance models is essential to foster circular development and future resilient scenarios. This contribution proposes a transformative methodology, developed within the PNRR-financed MIRACLE project, which integrates multi-risk analysis, vulnerability mapping, and scenario development into experimental urban laboratories. By leveraging tools such as community engagement, gaming, and artificial intelligence (AI), these laboratories foster collaboration among diverse stakeholders to co-design adaptive strategies. We invite contributions that address the complexities of multi-risk conditions, focusing on innovative frameworks that integrate spatial, social, and technological solutions. How can water cities adapt to evolving hydrological risks while promoting inclusivity and ecological balance? Contributions may explore methodologies, case studies, or governance models to advance knowledge and practice in multi-risk planning.

Keywords:

multi-risk planning; water; climate change; scenario thinking; adaptive strategies

Roundtable 23

RT_23 NEIGHBORHOODS FOR TRANSFORMATIVE ACTION / 1935

Neighborhoods for Transformative Action

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Neighborhoods are more than mere physical spaces; they are dynamic socio-spatial assemblages that reflect the interplay of identity, diversity, and community while serving as key loci where space and society become tangible. Often overlooked in urban planning, neighborhoods are increasingly recognized as critical platforms for addressing today's multifaceted crises, such as climate change, social inequality and public health crises. Serving as the nexus between individual households and broader urban systems, neighborhoods hold unparalleled potential to shape the future of cities through local governance and social interaction with the advantages of proximity and interdependence.

The diversity of European neighborhood experiences and how neighborhoods can foster resilience, encourage participation, and drive community transformation will be explored in this roundtable. By fostering cross-country dialogue within Europe and its wider region, urban planners and policymakers can utilize diverse approaches to address challenges and enhance neighborhood-driven transformation.

Transformative actions at the neighborhood level hinge on bridging grassroots initiatives with top-down policies. Collaborative governance models demonstrate the potential of integrating citizen-driven innovations. The roundtable will focus on three themes:

1. **Participation:** Neighborhoods provide accessible platforms for community engagement, enabling residents to co-create solutions and influence decision-making processes. The panel will explore strategies that empower marginalized groups, amplify local voices, and bridge the gap between top-down policies and grassroots initiatives.
2. **Resilience:** Neighborhoods are essential for fostering resilience in economic, social, environmental and governance crises. Panelists will present examples of adaptive strategies that promote social cohesion, mutual support, and long-term recovery.
3. **Transformation:** Beyond resilience, neighborhoods can act as laboratories for transformative change. Discussions as digital technologies, data-driven tools and urban labs will highlight how neighborhoods redefine urban living, foster innovation, and create inclusive, equitable futures.

Panelists will provide insights from Türkiye, Central and Eastern, Western, Northern and Southeastern Europe and the Balkans:

- **Türkiye:** Exploring the dimensions of community resilience, the ability of communities and neighborhoods in navigating multiple crises.
- **Central and Eastern Europe:** Highlighting neighborhood dynamics in post-socialist urban contexts shaped by unique historical and cultural factors.
- **Western Europe:** Showing innovative, community-driven, participatory approaches to sustainability and governance.
- **Northern Europe:** Resource sharing focusing on a reshareability index for sustainable planning and 'reshared' neighborhoods to apply circular principles.

- Southeastern Europe and the Balkans: Offering comparative insights to broaden understanding and applicability.

In the quest to transform the neighborhood from being a passive policy recipient to becoming an active change agent, panelists will provide economic, social, environmental and governance frameworks and case studies that will lead the redefinition of the neighborhood in spatial planning.

The roundtable outcomes are envisioned to have significant implications for the 2025 Ankara Urbanism Biennial organized by İlhan Tekeli Urbanism Culture Trust, offering a comprehensive understanding of neighborhoods as critical sites for fostering inclusivity, resilience, and adaptability in urban environments. By synthesizing insights from diverse contexts, the roundtable will help identify key themes for the biennial, ranging from social equity and grassroots democracy to sustainability and urban innovation. Finally, an edited volume will consolidate theoretical and practical knowledge on neighborhoods as essential building blocks of urbanism.

Keywords:

Neighborhoods; Transformative Action; Sustainability; Resilience; Participation

Roundtable 24

RT_24 HAS THE PANDEMIC BOOSTED INNOVATION? EXPLORING URBAN TRANSITIONS / 2045

Has the pandemic boosted innovation? Exploring urban transition

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The COVID-19 pandemic created a brand new social, economic, urban environment. Actors, at any scale and nature (public, private, firms, associations...), experienced completely unpredictable contingent situations and indefinite horizons. The fuzziness of the situated exigences was concurrent with the strictness of the policy and laws to limit the spreading of the virus. In the frame of transition studies and the spatial turning literature, the round table discusses what followed the pandemic shock, evidencing hints from case studies and theoretical reflections on transitions. The aim is to debate changes in times of poly-crisis, and if those have the potential for a permanent restructuring of spatial practices and imaginaries. Evidence from case studies at the table will discuss the role of the space in recovery policies with respect to four specific sectors (cultural and leisure activities and tourism; people and goods' mobility; higher education; manufacturing activities), while the theoretical contributions will reflect on (possibly new) roles and approaches in planning theory to deal with the post-pandemic poly-crisis and transitions.

In the frame of a National Interest Research Project ("Plastic or elastic? Exploring the spatialities of post-Covid 19" coordinated by Valeria Fedeli, Politecnico di Milano), the organisers put on the (round) table the following questions:

1. What role have the crises, here namely the pandemic by COVID- 19, in restructuring the relations of people, firms, and institutions with spaces?
2. Do the crisis and the externalities produced by them have an impact on innovation? Which actors and which fields are more responsive in these processes? And if so, which role has the space in prompting or experiencing innovative practices?
3. What is the role of the public in enabling or disabling new relations of actors with the space for boosting innovation?

Results of the RT will be valorised in the deliverables of the Research Project. Moreover, depending on the interest and results of the discussion, the organisers will draft a theoretical manifesto to challenge Italian policymakers and actors coping with systemic disruptive change by generating collaborative governance of transition space.

Keywords:

Transition studies; crises, space; governance; innovation

Roundtable 25

RT_25 UGOVERN: FROM POLICY TO PRACTICE: INNOVATIVE REGULATORY TOOLS FOR ADDRESSING THE AFFORDABLE HOUSING CRISIS / 1945

UGoveRN: From Policy to Practice: Innovative Regulatory Tools for Addressing the Affordable Housing Crisis

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The roundtable we propose will explore innovative regulatory tools and practices addressing the affordable housing crisis within fragmented governance systems, with a focus on their implementation, benefits, and challenges in diverse country contexts. While housing market trends and urban development processes vary significantly across nations, this session aims to foster a comparative analysis of actionable policy instruments that have demonstrated potential to stimulate affordable housing production while addressing equity and sustainability goals.

In the context of the global housing crisis, particularly in the Netherlands, Turkey, Portugal, the U.S., and France, discussions on the most effective public policies and planning tools have gained urgency. A nuanced analysis of specific regulatory approaches within these fragmented governance systems is essential to formulating innovative strategies. This roundtable will pursue three key objectives:

- 1) Highlighting Innovative Tools:** Exploring specific regulatory instruments and policies being used to address the housing crisis in different contexts.
- 2) Evaluating Contextual Effectiveness:** Understanding the conditions under which these tools operate and the factors influencing their success or failure.
- 3) Fostering Adaptability:** Discussing the potential for adapting and scaling these tools across diverse governance systems while respecting contextual specificities.

Additionally, the roundtable will aim to establish a set of key metrics and issues to support future comparative research, potentially leading to a broader international publication on this theme, comprising a larger number of countries.

Structure of the Roundtable

1) Introduction and Comparative Data

The session will begin with a brief overview of the affordable housing crisis and its relationship with fragmented governance systems across the different case studies. A comparative statistics dataset will set the stage, helping to understand the different contexts on which the different policy tools operate.

2) Policy Tool Presentations

Each speaker will present one innovative regulatory tool currently in use in their country. Presentations will focus on:

- a) Tool Design and Implementation:** A detailed description of the regulatory tool, including its goals, mechanisms, and governance structure.
- b) Impact and Challenges:** An evaluation of the tool's effectiveness in addressing the affordable housing crisis, with attention to equity and sustainability.

The tools presented may include:

*** The Netherlands: **The 40-40-20 rule, which balances social, mid-income, and market-rate housing in new developments.**

*** **Turkey:** Urban transformation projects incentivized through public-private partnerships.

*** Portugal: **Affordable rental housing programs targeting middle-and low-income households.**

*** **U.S.:** Inclusionary zoning policies and housing trust funds.

*** France: ** The ZAC (Zone d'Aménagement Concerté) model for integrated urban development and affordable housing production.

3) Discussion and Interactive Engagement

The open discussion will examine the benefits, limitations, and transferability of the described tools across governance systems. Participants will critically assess how these fragmented yet innovative approaches can address housing affordability while advancing equity and sustainability goals.

To make the session more engaging, interactive elements such as small group exercises or real-time polling may be incorporated. For example, participants might propose adaptations or new tools inspired by the cases presented and collaboratively discuss their feasibility in different governance contexts.

Keywords:

affordable housing, regulatory tools, fragmented governance, urban development, comparative analysis

Roundtable 26

RT_26 AESOP QUALITY RECOGNITION (QR) PROGRAMME: A EUROPEAN PLANNING EDUCATION PLATFORM FOR TRANSFORMATIVE REFLECTIONS, LEARNING AND ACTION / 1950

AESOP Quality Recognition (QR) Programme: A European Planning Education Platform for Transformative Reflections, Learning and Action

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The AESOP Quality Recognition (QR) Programme was initiated in 2006 after reflections on the needed transformations of planning programmes under changing requirements, and often challenging conditions for the planning profession and academia. After years of efforts invested by many colleagues and working groups, the Programme moved in 2015 from its Pilot Phase into the Standard Phase in 2019 following the main intention: AESOP will offer member schools its institutional support by certifying recognised qualities of fostering the European dimension in planning education programmes, as well as in nurturing a certain planning specialisation/distinctiveness within their national and regional context (Lo Piccolo, 2017; Galland and Chettiparamb, 2020).

Emerging from previous rounds of evaluations and consultations, the AESOP Excellence in Education Board (EEB) was officially established in 2017 and was assigned to develop further the QR Programme. In 2020/2021, the QR Mission, Ethos, Timeline and Criteria (AESOP QR, 2024) were defined to enable peer-to-peer sharing and mutual learning concerning the programme's curriculum identity, contents, settings and pedagogies, championing programmes' best practices, and fostering an ethic of quality enhancement amongst the programmes' staff.

The work "among peers" is two-fold: on the one hand, applicants and assessors (assigned EEB members) exchange their recognitions of the planning programme's adherence to the criteria, and on the other, assessors reflect, identify and integrate into the QR Programme qualities emerging from the previous assessments. This way we are continuously framing and sharing recognised qualities of planning education needed to prepare future professionals and scholars to address global and local multidimensional challenges and opportunities in constantly changing spaces and places.

The purpose of the Round Table is to discuss how the QR programme can guide and inspire joint reflections, learning and action needed for the planning programmes transformation in Europe and beyond, now and in the future.

Past and potential QR applicants and several EEB members/assessors, as speakers of the Round Table will discuss:

The mission and ethos of the QR programme;

How the QR Application form and Timeline guide the interactions among the programme representatives and between EEB assessors and applicants towards the recognised quality of a planning programme? How is the process seen as "transformative" from the side of the applicants? How is it seen from the side of EEB assessors?

How is sharing the QR documents, reports and articles, with the organisation of the QR events at the AESOP HoS meetings and Congresses fostering future transformations of planning programmes and how can it be developed further?

In a general sense, by revealing speakers' motivations, reflections, learning experiences and actions, we aim to open the discussion on the merits of QR to the AESOP community and to explore its existing and possible transformations as the European Platform for enhancing the quality of planning education.

Keywords:

planning education; quality enhancement; best practices; peer learning and engagement

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Roundtable 27

RT.27 TRANSFORMATIONS TO POST-GROWTH –POSITIONS, PERSPECTIVES, AND PROSPECTS FOR PEOPLE AND PLANET / 1920

Transformations to post-growth –Positions, perspectives, and prospects for people and planet

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In the context of critical and looming change toward a post-growth society –one that aligns ecological imperatives with social equity –planning plays a pivotal role in shaping viable pathways forward. In recent years, post-growth ideas have gained significant traction within planning discourse. However, this shift raises serious questions about the suitability of existing planning paradigms, their underlying logics, and their capacity to drive systemic change. Understanding their contextual relevance and legitimacy is essential in responding to the profound challenges of an increasingly complex and rapidly changing world.

This roundtable will engage with these discussions from three consecutive perspectives:

- A key tension in planning for sustainability and transformation lies between top-down governance and bottom-up participation, in particular moving beyond studying them in isolation. A major challenge for future research is to better connect insights from local experiments with broader policy implementation. This panel will explore the trade-offs, contradictions, and potential of hybrid governance models that bridge these perspectives, offering original pathways to move beyond growth dependencies.
- Current planning paradigms reach limits and systemic barriers, highlighted by post-growth and degrowth critiques. Many of these challenges arise at the intersection of planning's deep-rooted growth orientation and the broader economic and societal frameworks that reinforce it. By interrogating these dynamics, we aim to uncover opportunities for rethinking planning approaches beyond conventional growth imperatives.
- Established roles and practices seem insufficient to meet contemporary societal and environmental challenges effectively. The panel will reflect on how post-growth planning approaches can enhance institutions, tools, instruments, and governance structures. This includes reimagining the role of planners in coordinating diverse and often conflicting demands while navigating the increasing complexity of policy landscapes and public expectations.

The roundtable invites panellists to share insights from their research and practice, examining the paradigms and theoretical foundations that shape their work. We encourage the audience to critically engage with the potential of spatial planning as a transformative force, reflecting on its capacity “to shift our thinking and adopt alternative approaches that prioritize people and the planet”(AESOP 2025, Call for Papers). Through this dialogue, we aim to explore the diverse approaches that position planning as a critical catalyst for systemic change in an era of planetary crisis.

Keywords:

Post-growth planning; transformative agency; experimentation; role of planners

Roundtable 28

RT_28 PUBLISHING PLANNING RESEARCH: A CONVERSATION WITH EDITORS / 1905

Publishing Planning Research: A Conversation with Editors

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This session aims to explore the process and challenges of publishing in planning research, featuring editors from planning journals, such as: *Habitat International*, *Progress in Planning*, *Journal of Planning (Planlama)* and *plaNext*. Each editor will have 10–15 minutes to share advice on publishing—highlighting their do’s and don’ts of submitting a paper—and offer their critical perspective on the future of publishing in planning academia. Key questions to be addressed include: What makes a good (international) paper? What should authors be mindful of when submitting a paper? Who should be the co-author of a paper? What is the ‘best’ journal to publish and how significant are metrics in choosing where to publish? What is the most effective way to respond to reviewers’ comments? How long should the review process take? What is the role of AI in the future of publishing?

While publishing remains a critical aspect in terms of developing as a scholar, the publishing landscape is becoming increasingly complex and confusing, especially for early career researchers. Challenges include the proliferation of journals—both legitimate and predatory—rising publication costs, delays in the review process due to the growing workload of academics and increasing levels of submissions, and contentious metrics for evaluating journal and article quality, ranging from citation counts to social media mentions. At the same time, structural inequalities persist, such as the underrepresentation of global south contexts and universities on editorial roles and in published outputs, compounded by the dominance of English as the primary language for international dissemination, which creates its own distortions in terms of knowledge construction.

Rather than avoiding such complex issues, the purpose of this roundtable session is to engage in a moderated Q&A with researchers—particularly PhD students and early-career scholars—and to facilitate a constructive discussion on this evolving landscape, while providing practical advice for navigating its challenges.

Keywords:

publishing; planning; journals; editors

Roundtable 29

RT.29 'CONVERSATIONS IN PLANNING THEORY AND PRACTICE': A COLLABORATIVE E-PUBLICATION BY AESOP'S YOUNG ACADEMIC NETWORK / 2046

'CONVERSATIONS IN PLANNING THEORY AND PRACTICE': A COLLABORATIVE E-PUBLICATION BY AESOP'S YOUNG ACADEMIC NETWORK

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The Conversations-in-Planning YA-AESOP booklet series, an initiative of AESOP's Young Academics (YA) network, foster meaningful dialogues between scholars on theories, concepts, ideas, and practices in spatial planning. This series provides an interactive platform for YAs to develop their academic and intellectual skills through an intergenerational knowledge share. Each issue delves into the evolution of planning approaches, draw lessons from experiences practitioners, and encourages reflection on the future of the discipline.

The roundtable focuses on four key objectives:

1. Promoting the editorial project Introducing the booklet series while addressing the challenges and opportunities of this bottom-up, collaborative initiative. This project emphasizes discussion and learning through active engagement within the scientific community.
2. Discussing the cultural significance Highlighting the project's outcomes and identifying new directions, including potential contributors, relevant topics, and compelling case studies for future issues.
3. Presenting the latest booklet Showcasing In the Mirror of Urban Landscapes: Sharing Experiences and Grounding, authored by Prof. De las Rivas, Ana Ruiz Varona, and Federico Camerin.
4. Introducing the special issue "European Planning Contexts" Announcing the second special issue in the series'new format, following Planning Practices and Theories from the Global South (2021). This edition will address critical topics such as climate change, housing challenges, and feminist cities; featuring contributions from both experienced scholars and young academics.

The roundtable aims to foster open discussion by engaging contributors, participants, and the audience, enriching the dialogue on the discipline's core challenges and innovations.

Roundtable 31

RT_31 PLANNING, PUBLISHING AND THE PLANET: ACADEMIC PLANNING PUBLISHING IN TIMES OF PLANETARY CRISES / 2047

PLANNING, PUBLISHING AND THE PLANET: ACADEMIC PLANNING PUBLISHING IN TIMES OF PLANETARY CRISES

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This roundtable will address the role of academic planning publishing in today's world of multiple and protracted crises. It will include perspectives from editors of leading planning journals such as Planning Theory, European Planning Studies, Planning Theory & Practice, European Journal of Spatial Development, and disP - The Planning Review.

By engaging with the Congress theme, this roundtable will discuss the role of academic planning journals in today's age of planetary crises, what these journals can and should do to approach these world of multiple interlinked crises (such as climate change, biodiversity loss, related social exclusions and socio-spatial inequalities, and ongoing wars and displacements) and whether and how they can contribute to transformative action. We will discuss whether these global crises are well represented, reflected and analysed through the lenses of planning in planning journals and what could be future approaches to make our planning journals more relevant for transformation action. We are sure that planning research has much to say about how these crises are playing out, affecting different regions of the world and different populations in different ways. We will also ask whether we have enough diverse perspectives represented in planning outlets; and how we can engage with diverse disciplines, all of which are relevant to analysing these crises and proposing transformative action, despite being already a highly interdisciplinary field.

We will also discuss important issues about the future of academic planning journals: What are new publishing formats, article types, and processes to be more innovative, inclusive and equitable? How can early career researchers and voices from practice and community organizations be better integrated? How can we better incorporate the perspectives of planning scholars from different regions of the world, and what role can AESOP and other international planning associations play in facilitating academic planning publishing?

All in all, we will ask substantive and procedural questions for how to produce and disseminate planning knowledge relevant for better understanding these planetary crises as well as formulating transformation strategies, tools and pathways for approaching these crises. After some initial reflections from various editors of planning journals, we will open the roundtable for comments and questions from the audience. Please come and ask questions that interest you!

RTPI

RTPI / 2091

WHAT ROLE SHOULD THE ROYAL TOWN PLANNING INSTITUTE AND OTHER PROFESSIONAL INSTITUTES PLAY IN SHAPING AND RESPONDING TO THE EMERGING EUROPEAN PLANNING RESEARCH AGENDA?

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The Royal Town Planning Institute (RTPI) is current developing a new Research Strategy for 2026 to 2029. Among other important functions, the Strategy will guide the Institute's significant investment in new research, shape its relationships with key partners (including planning schools around the world), and determine its approach to generating impact.

In this context, this special session, chaired by the RTPI's Head of Practice and Research and featuring representatives from other key planning-related institutions, will explore:

- Emerging Europe-wide research priorities;
- Key international research 'gaps';
- The scope for greater international collaboration between planning institutes; and
- The role professional bodies and planning institutes should play in supporting and delivering research with partners in academia.

In addition to a panel discussion, there will be the opportunity for the audience to interactively feed into the RTPI's consultation on its new strategy.

Special Session 1 | PLANNING FOR JUST ENERGY TRANSITION

SS_01 PLANNING FOR JUST ENERGY TRANSITION / 2007

Pathways to Just Energy Transitions in Post-Conflict Ukrainian Cities

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Achieving just energy transition in post-conflict Ukrainian cities requires addressing multiple layers of transformation. As Ukraine moves toward EU membership, aligning its energy transition with EU climate and energy policies is essential for joining related programmes and fostering inclusive and resilient urban development (Energy Community, 2024). This transition goes beyond decarbonisation, aiming to ensure that the benefits and burdens of energy reforms are distributed equitably, preventing social exclusion and energy poverty (Bouzarovski and Simcock, 2017). More importantly, developing comprehensive strategies for post-war redevelopment is essential to ensuring a coordinated and effective reconstruction process, mitigating disruptions, and facilitating sustainable recovery (Lukash and Namoniuk, 2024).

Ukraine is currently facing numerous challenges. The course of the war and its potential outcomes, especially in light of recent geopolitical developments, have made the situation increasingly difficult. However, when focusing specifically on the energy transition, it becomes evident that addressing these challenges through targeted reforms and preparing adequate strategies can support more resilient urban development and alignment with EU standards (European Commission Joint Research Centre, 2025).

Consequently, in addition to providing an overview of the Ukrainian context, this study firstly draws on the experiences of Central and Eastern European (CEE) countries to illustrate how post-socialist states navigated urban transitions during their EU accession. It also examines the challenges they currently encounter in moving towards carbon neutrality, aligning policies with EU frameworks, and addressing regional inequalities (Dąbrowski and Piskorek, 2018). Nevertheless, it appears evident that lacking targeted policies may disrupt the transition process, leading to uneven benefits and the continuation of energy poverty (Bouzarovski and Simcock, 2017).

Therefore, to support their efforts, the EU has integrated Ukraine into several dedicated funding mechanisms and policy frameworks, including Horizon Europe, the European Green Deal, and the Energy Community Treaty (Energy Community, 2024). These initiatives promote infrastructure modernisation, renewable energy deployment, capacity building, and participatory planning. They also encourage stakeholder engagement and the development of governance frameworks to strengthen Ukraine's alignment with EU sustainability goals.

Secondly, the research examines how projects such as U_CAN (or SUN4Ukraine), through partnerships with the Cities Mission –Climate-Neutral and Smart Cities (CNSC), can facilitate Ukraine's journey towards carbon neutrality. These collaborations foster knowledge exchange, promote good practices, drive innovation, and support co-developed decarbonisation strategies tailored to the needs of war-affected urban areas. A critical element of this transition is addressing the needs and factors which significantly affect disadvantaged areas. It necessitates the development of appropriate recovery frameworks to aid post-conflict redevelopment, building on Ukrainian

potential, ensuring affordable and resilient access to clean energy, enhancing energy efficiency, and supporting community-owned renewable projects (Lukash and Namoniuk, 2024). Strengthening local governance and planning can also assist municipalities in devising tailored solutions while remaining aligned with national and EU policies (Dąbrowski and Piskorek, 2018).

Finally, the study presented in this paper discusses how spatial planning systems can navigate the challenges of integrating spatial justice into energy transition strategies amid the complexities of war-affected urban areas. It offers actionable insights for Ukrainian policymakers and planners striving to align energy transitions with EU standards with support from the Mission Cities (European Commission Joint Research Centre, 2025).

Keywords:

Just Energy Transition; Spatial Justice; PostConflict Planning; EUIntegration; U_CAN Project

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SS_01 PLANNING FOR JUST ENERGY TRANSITION / 2000

Positive Energy Districts as an Urban Project: Representation, Redistribution and Scale in Cureghem's Just Energy Transition

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In recent years, numerous energy transition projects on the scale of the neighbourhood have emerged, along with a range of concepts and programmes to stimulate, support, streamline, mainstream or assess these. Many of these initiatives intend to achieve their ambitions through a meticulously engineered combination of technical and social interventions. When confronted with real-world heterogeneous urban arrangements, their implementation often turns out more challenging or less effective than anticipated (Gohari et al., 2024; Karvonen et al., forthcoming; Rutherford and Coutard, 2014).

The PED4ALL project (JPI Urban Europe, PED Call II) has studied possible pathways for just energy transitions in Cureghem, one of the most socio-economically vulnerable and culturally diverse neighbourhoods of the Brussels Capital Region. Co-directed by local residents and organisations, a conversation on everyday energy practices was initiated. This resulted in a rich understanding of the needs, opportunities and challenges concerning renewable energy in the neighbourhood. Beyond financial and technical considerations, this conversation also emphasized the importance of social and cultural realities in shaping renewable energy transitions in Cureghem.

Building on these insights, energy transition strategies for the neighbourhood were co-developed. These strategies strike a careful balance between multiple tensions affecting the neighbourhood's energy transition: The institutional framework of energy transition programmes facing a neighbourhood characterized by fragmentation, diversity, informality and constant change; the dilemma of promoting the energy transition by putting emphasis on its financial profits for building owners or by focussing on the improvement of living conditions for residents; a focus on individual households versus the already present, but at times unconventional collective dynamics concerning energy practices and their potential for renewable energy.

Although these tensions are particularly pronounced in Cureghem, they reflect broader dynamics that are prone to be found in other urban settings. By framing energy transition as an urban project rather than solely as socio-technical infrastructure (Castán Broto and Robin, 2020), this paper offers critical insights into planning for just energy transitions. It highlights how urban processes can integrate spatial justice principles, ensuring that energy transitions address representation, redistribution, and scale in equitable and context-specific ways.

Keywords:

just energy transition; Positive Energy District; everyday energy practices; co-creation

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SS_01 PLANNING FOR JUST ENERGY TRANSITION / 2049

Energy Justice in Underprivileged Neighbourhoods: Reimagining Energy Transitions Through Community Storytelling

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Achieving fair and inclusive urban energy transitions is a pressing societal challenge, particularly in the context of the ongoing climate and energy crisis. These transitions extend beyond technical upgrades or infrastructural changes; they necessitate a rethinking of social relations, governance models and economic structures. While concepts and frameworks such as Energy Communities and Positive Energy Districts (PEDs) emphasize the neighbourhood scale and integrated transformations of energy systems and living conditions, recent research highlights that energy injustices often remain under-addressed. In particular, there are fundamental challenges in addressing complex and interrelated injustices in underprivileged inner-city neighbourhoods. Residents of these neighborhoods frequently face energy injustices due to high costs and limited access to renewable energy services. Moreover, structural injustices undermine engagement for collective action and diminish community cooperation (McNamara et al., 2013), depriving inhabitants of the necessary resources and opportunities to develop their capabilities (Gaupp et al., 2023). These factors can act as barriers for collective energy transformations.

In response, energy justice has gained increasing attention in recent years, emphasizing the need for fair distribution of benefits and burdens in energy production and consumption, inclusive public participation in energy decision-making, and the recognition of diverse perspectives rooted in social, cultural, ethnic, racial, and gender differences (Feenstra & Özerol, 2021). While energy justice provides a valuable analytical framework for institutional processes and policy discourse, it predominantly emphasizes individual responsibility and rights-based approaches to justice (Damgaard et al., 2022).

Scholars and practitioners have called for more inclusive, creative, and participatory approaches to broaden voices and visions in energy futures, engaging more directly with everyday lived experiences. Recently, storytelling has been increasingly recognized as a useful tool for envisioning just energy futures, particularly in its ability to engage diverse voices such as policymakers, community members, activists, and other groups of population directly affected by energy decisions (Dahlgren et al., 2024; Moezzi et al., 2017). Storytelling offers a way to uncover experiences, practices, emotions, and meanings associated with energy, leading to a deeper appreciation of its sociotechnical nature (Staddon, 2017). It also ignites people's imagination and broadens perspectives on future possibilities (Hajer & Versteeg, 2019) and has the potential to unite people and strengthen community processes (Sol Cueva, 2025). Thus, methods focusing on narrative approaches can allow researchers to pose alternative questions, focus on neglected issues, and include marginalized perspectives.

This contribution explores the potential of storytelling and narrative mapping methods as a means to engage with everyday experiences of energy vulnerability and diverse community perspectives on energy systems and transitions. Moreover, we explore how storytelling can be deployed to bridge the gap between local needs and experiences and governmental and institutional stakeholders. Drawing on feminist theories of care and care ethics, we aim to explore how storytelling can challenge the individualistic framing of energy concerns, and can serve as a powerful tool for democratizing energy transition discourses by revealing how energy is deeply interwoven with everyday practices, emotions, and aspirations. To do so we draw on empirical work conducted in a neighbourhood in Ghent, Belgium, exploring different ways to build collective storylines based on how individuals and community organisations encounter energy in their daily lives and how they assess its role in shaping their lived experiences (Smith & High, 2017). Moreover, we reflect on the potential to increase energy literacy and foster collective action.

Keywords:

Positive Energy Districts; energy vulnerability; energy injustice; storytelling; narrative mapping

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SS_01 PLANNING FOR JUST ENERGY TRANSITION / 1937

Sacrifice zones of the EU's just energy transition in transport – The case of Jadar - Serbian rural, biodiverse and lithium rich region

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The rise in global greenhouse gas (GHG) emissions and pollution since the 1960s is causing a global climate crisis. Some parts of the world have stepped up their efforts to transition from carbon-based to renewable energy sources in the last decade(s). While the use of renewable energy sources is increasing, GHG emissions are reaching record highs with no evidence that they have peaked. Similarly, transport is responsible for around one-sixth of global fossil fuel emissions and is experiencing exponential growth in many, but not all, parts of the world. Electric vehicles (EVs) are considered the key technology for decarbonising road transport. Their production and sales are also increasing in many, but not all, parts of the world.

The EU has a number of acts and documents guiding the EU's energy transition and the functioning of the internal market, e.g. the Critical Raw Materials Act. The EU laws defend the interests of its citizens and ensure that all potentially affected stakeholders have a say in the process (European Commission, 2023a; 2023b). In addition, the EU's Territorial Agenda 2030 calls for strengthening the territorial dimension of sectoral policies and aims to promote an inclusive and sustainable future for all places.

What are the contradictions of planning “just energy transition” in the EU?

First and foremost, no territorial entity controls its climate. Lower GHG emissions and improved environmental conditions only in the EU will not stabilise its climate. Secondly, Fressoz (2024) claims that there is no energy transition. The primary energy sources do not replace each other. Rather, they fuel each other's exploitation, along with the exploitation of raw materials, especially under the imperative of competitive, uninterrupted economic growth. While some countries are deploying more EVs and managing to reduce GHG emissions, the production of EVs pollutes areas where the needed raw materials are extracted. Moreover, the EU considers justice for stakeholders only within its borders.

Where are these contradictions manifested?

The protracted EU integration process has turned the Western Balkans countries into EU candidates but also stabilitocracies. Stabilitocracy in Serbia means that the country is ruled by a (semi-)authoritarian regime supported by the EU. The regime can ensure

a certain degree of regional stability and fulfil the interests of powerful foreign governments while deteriorating internal democracy and increasing its wealth. Lithium, which is (currently) the main material in EV batteries, is on the EU “critical raw material” list, and while its presence has been identified in several EU countries (most notably Germany), the Serbian agricultural and biodiverse region, Jadar has been chosen by the company Rio Tinto for its exploitation. At that moment, Jadar became a “sacrifice zone” of the EU “just energy transition”. Moreover, spatial planning for lithium mining has since been an instrument to legitimise the ruling party’s narrative of unimaginable national economic growth, for Rio Tinto’s interest to profit from lithium exploitation, the interest of the German “green” EV industry to get cheap lithium while restricting its access to the Chinese EV industry, and the interest of EU citizens to feel climate-friendly while driving EU-made EVs.

In Serbia, this “sacrifice” and the proven negative effects of lithium mining have provoked the resistance of the local stakeholders, who are supported by the majority of the people in Serbia. Questions for this occasion are: If the EU continues to plan its “just energy transition” under these conditions, are citizens and planners from the EU agreeing to permanently ruin the environment and wellbeing of people outside the EU? Are the borders of the EU states the true boundaries of its citizens’ and planners’ dignity and sense of spatial justice?

Keywords:

electrical vehicles; critical raw materials; contradictions; borders; EU; Serbia.

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SS_01 PLANNING FOR JUST ENERGY TRANSITION / 2026

Planning for A Just Urban Energy Transition: A Phronetic Approach

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The energy transition has become a crucial issue in recent years, particularly regarding urban sustainability. However, current academic and practical discussions often emphasise management perspectives and technical expertise within a political context shaped

by historical and contemporary practices. This paper explores a planning perspective essential for a just urban energy transition, focusing on deliberative planning processes, the evolution of values, and the practical judgment informed by the reflections of planning professionals.

The objective is to develop a planning perspective largely overlooked in discussions about a just urban energy transition. This lack of focus has resulted in various un-addressed challenges, particularly regarding the dynamic interaction between the socio-spatial development of urban environments and the energy transition. This interaction involves critical issues such as energy efficiency, flexibility, and production. The connection between urban and energy sectors is becoming increasingly important for planning future urban energy transitions. Although there have been advancements in both areas, adopting a planning perspective can enhance our understanding of how energy transitions can be stimulated through urban processes, practices, and transformations.

A significant question from this planning perspective is how we can move beyond the simplistic dichotomy of fossil fuels versus renewable energy and the distinction between clean and dirty urban energy transitions. There is a pressing need to develop new methodologies that address the complexities of urban processes. Patsy Healey's concept that futures are 'path contingent' rather than strictly 'path dependent' emphasises the importance of examining specific experiences and their relevance in various contexts rather than adhering only to generalised universal principles.

Through three contemporary Danish case studies, this research analyses reflective practices related to urban energy transition processes. The case studies involve co-creation processes in renewable energy planning, planning for energy communities, and developing positive-energy districts at the neighbourhood level in three diverse Danish contexts. Being often quoted for its advanced progression in the energy transition, the Danish cases offer valuable examples on how national frames and expert knowledge work in the urban context uncovering emerging power dynamics, conflicts, and resistances. By examining metaphors, learning processes, and necessary adjustments to planning routines, the research focuses on how reflection significantly influence how planning professionals develop narratives for just urban energy transitions while also considering urban transformation processes and the importance of public participation. Exploring ongoing projects and processes of urban energy transitions critical aspects emerge in relation to enhancing social sustainability and social justice. These considerations raise essential issues for urban energy transition processes and the power dynamics that affect democratic urban energy planning practices. The presentation concludes by advocating for a renewed interest in a 'phronetic' planning approach to encourage and incorporate practical wisdom into practitioners' work to foster the critical reflexivity needed for urban energy transition planning processes while also addressing the ethical implications related to social justice issues. Key considerations include existing governance structures, regulatory frameworks, stakeholder engagement, and strategic negotiations. The findings from this analysis enhance urban energy transition strategies by bridging critical insights from planning theory and practice into existing STS and transition management approaches.

Keywords:

path contingency, social justice, transition management, STS approaches

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SS_01 PLANNING FOR JUST ENERGY TRANSITION / 2050

Urban Regeneration-Energy Transition Nexus. Challenges from Multidimensional and Place-Based Approaches to Energy Justice

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Urban strategies for energy transitions have been largely driven by the decarbonisation imperative in response to global concerns for climate change. Mainstream research, with its emphasis on the development potential of renewables, energy balances, energy efficiency and financial models, as well as international policies supporting the replication potential of specific transition components (see e.g. the EU Renovation Wave for energy efficiency at building level), both emphasise a technocratic and market-driven approach. However, this framing tends to oversimplify the intricacies of urban dynamics and the significance of social, institutional and cultural factors interwoven with technological and market dimensions of energy transition.

A growing body of research has begun to shed light on the dark sides of the diffusion of low-carbon innovations (Ertelt and Carlborg, 2024). Several contributions have emerged, highlighting energy injustices associated with the prevailing energy transition paradigm while advocating for a human-centred approach (Jenkins et al., 2018). The concept of energy justice, with its multidimensional and intersectional features, has emerged as a theoretical, methodological, and empirical tool to both highlight these concerns and suggest new conceptual frameworks to support energy transition (Walker and Day, 2012; Amorim-Maia et al., 2022).

These issues are beginning to resonate in the planning debate, with questions being raised about how planning can contribute to the energy transition while fostering transformative changes and equity (Scott, 2022). Whilst the relationship between spatial and energy planning at the city scale has been criticised for the adoption of a top-down and normative approach, the neighbourhood context is increasingly recognised as a promising scale for transition, although this is still largely interpreted from a functionalist perspective (De Pascali and Bagaini, 2019).

The present paper focuses on integrated urban regeneration initiatives in disadvantaged neighbourhoods with the aim to highlight their contribution for a just energy transition. The transformative potential of these initiatives for achieving just transitions can be attributed to several factors: their place-based focus and the search for context-specific and integrated solutions; the attention paid to collective practices and place-making dynamics, which can reveal new solution spaces; the promotion of situated learning of energy practices, which serves to overcome a simplistic analysis of energy demands and needs; and the understanding of multiple drivers of energy vulnerabilities, which supports the possibility of operationalising the multifaceted features of energy justice.

The analysis is carried out through a combination of theoretical investigation and multiple case studies, and contemplates the prospect of suggesting a transformative agenda to strengthen the urban regeneration-energy transition nexus from the perspective of energy justice.

Keywords:

Urban Regeneration; Energy Transition; Energy Justice; Disadvantaged Neighbourhoods

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SS_01 PLANNING FOR JUST ENERGY TRANSITION / 2048

Fostering Local Inclusive Energy Transitions Through Innovation Communities

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Innovation Communities (ICs) provide a dynamic framework for embedding the energy transition in society, fostering broader engagement and accelerating progress towards climate goals. These communities empower participants by cultivating a sense of collective efficacy, trust in collaboration and community, and by creating networks and activating different resources (knowledge, know-how, infrastructure, financial resources...). Building an innovation community for climate action is not only about technological progress, but also about cultivating a sense of agency among participants. Through shared experiences of transformation, individuals and organisations become more aware of their ability to contribute to sustainability goals. The participatory nature of such a community ensures that solutions emerge from a wide range of perspectives, fostering trust and long-term commitment. In addition, an IC supports the well-being of its members by creating an environment where collaboration leads to tangible change, reinforcing the idea that democratic processes can drive effective climate action. A key challenge is to strike a balance between providing support structures and encouraging individual responsibility and creativity. Addressing this balance is essential to unleashing the full potential of innovation communities in advancing inclusive and sustainable energy transitions.

This presentation is based on the project “Strengthening and Consolidation of Innovation Communities to Implement the Recommendations of the Climate Citizens’ Council of the Freiburg Region”. (Innovation Campus Sustainability ICN) The project facilitates and accompanies cooperation between civil society, science, politics and business to promote an inclusive energy transition. The initiative came from civil society within the framework of the Climate Citizens’ Council of the Freiburg Region:

- How can the energy transition be made more inclusive and actively shaped by a broader segment of society?
- What can innovation communities contribute to the implementation of a sustainable energy transition?
- How can these communities enhance the social sustainability of cities in terms of democracy, community and participation?

As part of a Seed Money project, the primary research focus is on exploratory process

analysis. This includes

- Identifying potential opportunities and barriers in the development of an IC.
- Analysing key factors that influence the effectiveness of the community in achieving climate goals.
- Examining the self-efficacy and well-being of participants, particularly in the context of the energy transition.

By systematically exploring these issues, the project aims to provide a basis for future large-scale IC initiatives that integrate climate action with democratic transformation.

The presentation will introduce the idea and background of Innovation Communities, the project design and the main results of the accompanying scientific research.

Keywords:

Innovation communities; urban energy transition; agency

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Special Session 2 | DISCUSSING SPATIAL JUSTICE FROM/TOWARDS A SOCIO-ECOLOGICAL PERSPECTIVE

SS_02 DISCUSSING SPATIAL JUSTICE FROM/TOWARDS A SOCIO-ECOLOGICAL PERSPECTIVE / 1916

The case of the Old Town of Taranto and its post-disaster possible futures

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The paper proposal focuses on the peculiar case of Taranto's Old Town which today finds itself in extremely precarious conditions in terms of both spatial and social infrastructures.

The city of Taranto (Apulia, Southern Italy) is paying the consequences of a massive process of industrialization (Italian Institute for Industrial Re-construction). Its territory is undergoing one of the deepest environmental crises of Southern Europe as it is affected by severe pollution, environmental degradation and a growing public health crisis. In 2022, Taranto's territory was included in the UN's world list of "sacrifice zones".

Throughout the 20th century - as a consequence of the industrial turn - the Old Town underwent an impressive diaspora: a large number of new social housing complexes were built in the outskirts of the city and, through an intervention of so-called "sanitation", most of the inhabitants were forced to move. It gradually became a stigmatised place as it was perceived as dangerous and unsafe. The number of inhabitants decreased from 25 thousand (19th century), to less than 3 thousands.

One of the most drastic effects of the depopulation is the collapse of abandoned buildings. At the beginning of the 21st century, almost 80% of the buildings in the Old Town were no longer able to accommodate life. Entire areas are now enclosed and inaccessible and, due to the physical ruination and persistent lack of care, local communities are fragmented and fragile.

The paper could unfold in two parts:

- Part 1 aims to provide a cognitive framework of the situation including, first, an analysis of the context and processes that have led to a condition of structural crisis, and second, regeneration policies implemented by local and regional administrations.
- Part 2 takes into consideration specific cases of civic activation that, through cultural production programmes, pursue an agenda aimed at promoting a process of collective emancipation by building a renewed imagery of the city as a laboratory for urgent urban topics.

Keywords:

Precariousness; Post-disaster recovery; Possible futures

SS_02 DISCUSSING SPATIAL JUSTICE FROM/TOWARDS A SOCIO-ECOLOGICAL PERSPECTIVE / 1925

The words and operational tools of transition. On territorial systems

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This contribution proposes a critical analysis of the acronyms and operational tools that describe the package of measures, actions and projects implemented with the resources allocated by the National Recovery and Resilience Plan (PNRR), the instrument through which the 'Next Generation EU' European plan (the programme with which Europe responded to the pandemic crisis) was territorialised in Italy. The purpose of this analysis is to investigate the relationship between public policies and the operational tools they make use of, in order to reflect on the effects they produce on the territories, through textual analysis - the explicitness of words, their recurrence (or not) in institutional documents, the possible ambivalent meanings they take on - and the parallel spatial mapping of inertia and territorial transformations.

In particular, we examine a wide-ranging research programme, financed with PNRR funds, which involves, in an 'extended partnership', several universities, research centres and companies: the network called 'GRINS', an acronym for Growing Resilient, Inclusive and Sustainable. This case study allows us a privileged point of view, since each of the authors of this contribution is involved with a different role within this research network. The deconstruction and critical analysis work looks at the PE9 partnership within the broader system of European funding allocated through the Next Generation EU (NGEU), also known as the European Green Deal. The pact was endorsed by the European Commission in 2019, when member states committed themselves to a process of converting their once prosperous and linear growth into a sustainable and virtuous development process. On the contrary, in the PNRR, approved after the pandemic emergency, the words recovery and resilience refer to the capacity of a system to resist, adapt and recover its form after traumatic events, denouncing the state of crisis and the need to cope with the effects generated by the pandemic on economies and territories.

An analysis of the acronyms and words most frequently used in the two documents reveals a shift in the focus of the issue: climate, ecology, the environment and the green transition, central in the former, assume marginal importance in the latter, which highlights the need for reforms and territorial investments instrumental to recovery.

As in the use of the term territory, which in its adjectival derivation is reduced to a background presence, so in the GRINS proposal for the implementation of a database, to which the description of the territory is entrusted, space is represented through an abstraction. This contribution, reflecting the research approach of the DiARC unit within the GRINS project, highlights the need to integrate this perspective by restituting the material system, woven with tangible and intangible relationships. This system is not merely a locus of sovereign authority for implementing the actions outlined in the Plan. The absence or disappearance of the terms Landscape and Ecosystem, that is, precisely those devices constituted by the relations themselves and in which rights and interests intersect, denounces the reversal of priorities and ambitions of the Plan and its implementation tools.

The problem therefore arises of restoring the complexity of territorial systems, dynamic configurations of relationships in which flows, interactions and interdependencies intertwine, within data-informed processes.

This investigation into the vocabulary of premises and the use of tools aims to bring to attention the territorial specificities and the otherwise unexpressed needs of the plurality of instances involved in transformation processes that produce significant effects on the socio-ecological cohesion of territories.

Keywords:

Spatial sustainability, site specific, ecological transition

Public spaces in Rome: expanding the potential by reinterpreting old rules in a new framework

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Fifteen years after the approval of Rome's Master Plan, less than half of the designated green and public service areas are accessible. This is due to delays in land acquisition, management issues, the presence of incompatible uses, and the divestment of originally planned facilities. As a result, only one-third of urban areas meet the legally mandated provision of 18 m² of public space per inhabitant.

To address these long-standing issues, the Capitoline Administration has launched a dedicated program and enlisted university support for both its strategic framework and the development of operational tools.

Although designed for operational needs, the program has been conceived as a laboratory.

New territorial figures (Roma città-territorio e Roma 300 quartieri) illustrate how socio-ecological factors and proximity infrastructure can redefine the relationship between spatial justice principles, the vision of the city, and the layout of public spaces at the local level. A new monitoring and evaluation tool translates this new framework into project assessment and approval procedures.

After briefly outlining the current situation, aims, and contents of the program, the paper reflects on how the implemented mechanism can trigger new ways of thinking, mobilize social resources, and exploit the unique potential of Rome.

Keywords:

Public spaces; planning obligations; proximity infrastructure

SS_02 DISCUSSING SPATIAL JUSTICE FROM/TOWARDS A SOCIO-ECOLOGICAL PERSPECTIVE / 1994

Pathways towards and interpretations of shared governance. Comparative notes on Brussels, Naples and Barcelona.

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Focusing on Brussels, the research project WELCOMIN* aims to explore long-lasting forms of shared governance and ownership to overcome the fragile conditions of many civic initiatives legally framed as temporary occupations. The working hypothesis at the core of this project is that many of these, maintained by the communities for the communities, interweaving care practices for the human and the non-human, represent a welfare infrastructure towards what I define as ecological welfare, the word "ecological" being meant in the sense of the deep ecology (Naess, 1973).

During the first year of the research project, the hypothesis of shared governance has been applied to a few highly contested sites, whose future is debated between the opportunity of spontaneous regeneration of nature and wilderness on the one hand; and the need to address crucial issues such as developing strategic infrastructures or tackling

the housing question on the other hand (Lenna 2024). A prospective, scenario-based approach using research-by-design to explore the potentials of shared governance has been combined with a comparative framework. The purpose of such a hybrid methodology is to support and complete the visionary component of the scenario approach with the pragmatic knowledge and the hands-on expertise of actors from other European cities well known in the literature and amongst practitioners for their innovative experiments of shared governance (Lenna 2025).

The paper aims to illustrate these research results, learning from the cities of Naples and Barcelona to identify both supportive and less favourable conditions for shared governance in Brussels while pointing out site-specific and political variations on the theme.

*WELCOMIN is the acronym for “Community Welfare Mixed Infrastructures. Reclaiming vacancy, federating capacities and empowering communities towards an ecological welfare”, a project funded by the Brussels Capital Region research funding entity Innoviris, in the framework of the Prospective research programme.

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SS_02 DISCUSSING SPATIAL JUSTICE FROM/TOWARDS A SOCIO-ECOLOGICAL PERSPECTIVE / 1928

Nurturing More-than-human Relations in Contested Urban Spaces: Learning from Parco Terranostra

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In Naples’ periurban fringe, the case of Parco Terranostra in via Boccaccio challenges conventional urban planning approaches by revealing how spaces beyond institutional control can become laboratories for socio-ecological justice. At the heart of this experience lies a three-hectare former aviation fuel depot that became an unexpected laboratory for alternative forms of urban space. In 2015, the Terranostra collective declared the abandoned site a “self-managed liberated green area,” initiating an experiment in ecological co-existence. Through years of mutual interaction and repair, new relationships emerged between human and more-than-human inhabitants, creating a spontaneous and vibrant ecosystem where multiple species participated in the space’s transformation. However, when the Municipality of Casoria included the site in its EU regional funds proposal, these existing relationships faced erasure. Through persistent dialogue initiated by the collective and supported by the Department of Architecture of the University of Naples Federico II and the Urban Permanent Observatory on the Commons of Naples, a new “Regulation for the care and regeneration of urban common

goods" was approved, recognizing both human and more-than-human communities as legitimate stakeholders through "civic and collective use". Yet, despite this achievement, the community of Terranostra ("our land") is presently "Senza Terra"("landless"), as the site is still fenced off even after the completion of works, leaving its potential as a laboratory for multispecies governance unrealized.

The Parco Terranostra-Boccaccio experience points us toward a radical reimagining of public space through the lens of more-than-human commoning. While authorities weaponize contamination and security concerns to justify the erasure of existing socio-ecological relationships, treating these spaces as technical problems to be solved through standardized interventions, these spaces are not problems to be resolved but active places where socio-ecological conflicts are continuously negotiated and reworked. Rather than seeking conflict elimination, urban space should embrace and foster productive tension between different forms of life, recognizing daily practices of care and emotional connections as legitimate forms of stewardship. This situation challenges us to consider socio-ecological justice as a framework for recognizing the voice and the political agency of more-than-human actors in urban space-making, pushing us beyond anthropocentric models toward generative governance and design systems that can respond to emerging forms of ecological relationships.

Keywords:

urban commoning; multispecies justice; more-than-human planning

SS_02 DISCUSSING SPATIAL JUSTICE FROM/TOWARDS A SOCIO-ECOLOGICAL PERSPECTIVE / 1924

Discussing spatial justice at the intersection between migration and housing. The inclusion system in the inner regions of southern Italy

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The interaction between migration, access to housing, and depopulation provides a significant perspective on how Italian territories adapt to global dynamics and the role of public reception policies in addressing social urban inequalities. This paper proposes the case study of INTRA, a social cooperative located in Avellino, Campania, to examine the connection between Italian migrant integration policies and informal practices of access to houses. Focusing on the recognition of fundamental rights -enshrined in international legal frameworks and endorsed by nation-states- and proceeding through the lens of migration and housing, we recognise housing as a necessary tool to access the right to the city and thus to achieve minimum conditions of spatial and social justice. The analysis inquires a SAI project (Sistema di Accoglienza e Integrazione) in a network of small towns in the Campania region -partly- affected by the National Strategy of Inner Areas. Examining social inclusion policies in vulnerable areas, such as Avellino, illustrates the crucial role of local communities in implementing these policies by triggering bureaucratic barriers delaying the recognition of migrants' spatial and social rights. At the stage of finding housing - as well as employment - the strategic role of mobilising personal skills and local networks within resident communities becomes evident, as these systems facilitate the integration of new inhabitants muddling through a complex formal inclusion system.

The informal practices of the proposed case study appear both as potential alliances between subjects with differential distribution of precarity and as a measure of the opportunities created by public policies. These alliances are built on the recognition of shared and contrasting vulnerabilities among subjectivities bringing different approaches and methodologies. Migration and housing access, therefore, are not only interconnected

issues but also privileged arenas for observing and fostering practices of resistance and solidarity.

Keywords:

Migration, housing, practices, alliances, precarity

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SS_02 DISCUSSING SPATIAL JUSTICE FROM/TOWARDS A SOCIO-ECOLOGICAL PERSPECTIVE / 1910

Unveiling spatial interdependencies between inland areas and urban poles for enhanced regional cohesion strategies

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A key challenge for territorial cohesion is to cope with the increasing marginalization and inequalities brought by urbanization. The “inland areas” discourse is today fostered by academic literature and policies to describe areas remote from the delivering of services such as health, education, and mobility while overcoming the connotation of “rural” in dichotomy with urban centres. These areas are undergoing a process of economic decline and depopulation, while not being recognized for their crucial role in terms of the multiple ecosystem services (ES) they provide to society. Such neglect is often due to current territorial policies, which prioritize investments based on economic benefits but fail to consider the ecological functions characterizing these areas. To overcome this gap, our work applies the lens of landscapes as social-ecological systems to analyse territorial dependencies between inland areas and urban poles, combining 9 socio-economic indicators for territorial characterization with patterns of supply and demand for 12 ES in Le Marche region, Italy. First, we identified 5 bundles of ES supply and demand, which were best characterized through land use and social indicators. Second, the ES budgeting highlighted how the outermost inland areas are the main providers of regulating and cultural ES; while the urban poles on the coast are the main consumers of provisioning services. Our results revealed the interdependencies along the coastal-mountain gradient, highlighting how the urban-rural dichotomy which characterizes environmental analysis often disregards the socio-cultural heritage of the inland areas and ignores the polycentric condition of rural territories. These results allow to unveil potential environmental equity conflicts. We suggest that cohesion policies should embed a place-based approach integrating local environmental characteristics to the socio-economic perspective.

Keywords:

cohesion policies; interdependencies; landscape ecology; ecosystem services; social-ecological systems

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SS_02 DISCUSSING SPATIAL JUSTICE FROM/TOWARDS A SOCIO-ECOLOGICAL PERSPECTIVE / 2028

Energy Transitions as Socio-Ecological Urban Projects: Representation, Redistribution, and Scale in Cureghem's PED Strategies

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In the face of interlinked socio-ecological challenges, energy transitions are increasingly framed not merely as technical undertakings but as urban projects that reshape spatial, social, and political relations. This paper examines the case of Cureghem, one of the most socio-economically vulnerable and culturally diverse neighborhoods in the Brussels Capital Region, through the lens of spatial justice. Drawing on findings from the PED4ALL project (JPI Urban Europe, PED Call II), it critically engages with the governance, design, and implementation of Positive Energy Districts (PEDs), highlighting their role in redistributive and participatory energy transitions.

Through a co-directed engagement process with local residents and organizations, this research unpacks the interplay between socio-technical interventions and the lived realities of Cureghem's inhabitants. It identifies key tensions that shape energy transitions in fragile urban environments: 1) navigating institutional frameworks that often fail to accommodate fragmented, informal, and rapidly changing urban fabrics; 2) balancing economic incentives with broader socio-ecological imperatives, particularly regarding the uneven distribution of benefits among different community groups; and 3) reconciling individual household energy needs with pre-existing, yet often overlooked, collective dynamics of energy practices.

By framing PEDs as urban projects embedded in complex socio-ecological assemblages, this paper argues that energy transitions must move beyond technocratic solutions to embrace more inclusive, multi-scalar, and justice-oriented approaches. The Cureghem case offers broader insights into how spatial planning and policy-making can support just energy transitions that foreground participation, redistribution, and ecological sustainability in marginalized urban territories.

Keywords:

just-energy-transition; spatial-justice; Positive-Energy-Districts; socio-ecological-urbanism; participatory-processes

SS_02 DISCUSSING SPATIAL JUSTICE FROM/TOWARDS A SOCIO-ECOLOGICAL PERSPECTIVE / 1216

A Community Out of the Box: Understanding Flexibility and Justice through Self-organised Housing in the Netherlands

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Introduction

The concept of flexibility, generally associated with the customisation of dwellings, has shifted to a more restrictive meaning, particularly in the context of housing emergencies. Temporary, mobile, modular, containerised, and prefab have become synonyms with flexible. In the Netherlands, flexwoningen (flexible housing) are primarily designed to accommodate migrant workers and are often characterised by containerised and temporary nature. These housing solutions, driven by efficiency criteria, allow employment agencies to exert control over workers' lives, regulating behaviour through inspections and warnings, while organizing shifts and transportation via algorithms. These practices reveal the oppressive nature of workers' housing, where hyper-rationalised layouts amplify workers' stress. The study examines the Roma community at De Witte Plas campsite, North Brabant, as an emblematic case of self-designed housing, which subverts corporate planning models in the Rotterdam-Venlo logistics corridor.

Sustained Thesis

The thesis explores the Roma community's practices within broader theoretical debates on flexible housing and spatial justice emphasising their relevance to reimagine contemporary urban forms. Through practices such as self-planning, recycling and sourcing building materials, and negotiating labour conditions, the community challenges rigid models of workers' housing imposed by employment agencies. By actively reshaping the logistical systems that govern their lives, the community embodies Adrian Forty's concept of 'flexibility as a political tactic,' where architectural flexibility becomes a means of resisting the capitalist control of space, enabling emancipatory forms of living. Rejecting the compartmentalisation of life into rigid functions typical of flexwoningen designed to optimise profit and control labour, the community's approach shows how workers' housing can be reconfigured into adaptable, circular, ecological, and participatory frameworks that serve the inhabitants' needs.

A key theme of this study is reconfiguration. The Roma community's practices illustrate how logistical systems, designed to optimise profit and control labour, can be repurposed to serve the needs of marginalised groups. By subverting the conventional use of online platforms and supply chains, the Roma community transforms tools of corporate logistics into mechanisms of empowerment and sustainable development. The study also identifies the Roma community's methods as an embodiment of spontaneous order, a concept developed by Edwin Buitelaar. This contrasts sharply with the designed order typical in urban planning. Rather than adhering to strict, top-down regulations, spontaneous order relies on minimal and generic building rules, enabling the evolution of community spaces.

Methodology

The adopted method adopts a combination of field research and design-driven research. Data were collected through spatial analysis and field research, as well as a series of qualitative interviews at De Witte Plas campsite with the inhabitants, and with the Barka Foundation, an organisation supporting migrants experiencing homelessness, and FairWork, an NGO committed to aiding individuals facing exploitation. Additionally, a 12-minute documentary, filmed at the campsite in both formal and informal settings, provides a brief impression of community life.

Outcomes and Conclusions

This case study contributes to the debate on spatial justice, suggesting that the Roma community's approach provides a tangible example of how marginalised groups can assert control over their living conditions. It challenges the prevailing norms of spatial organisation in the logistics corridor, illustrating an alternative paradigm where community needs and environmental considerations dictate the use of space and resources. The findings demonstrate the Roma community's ability to negotiate autonomy within the constraints of global logistics and racialized labour systems. Their housing practices, rooted in circular economy principles and participatory design, show how self-organised housing can create adaptive, fair, and resilient environments. This case suggests urban planning frameworks that prioritise community agency, flexibility, and ecology, offering a redefinition of justice and equity in spatial arrangements.

Keywords:

self-design; workers'housing; flexibility; spatial justice

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SS_02 DISCUSSING SPATIAL JUSTICE FROM/TOWARDS A SOCIO-ECOLOGICAL PERSPECTIVE / 1932

Infrastructures, Inequalities, and Rights: The Sacco Valley in Italy's Intermediate Territories

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The contribution refers to the PRIN “Italia di Mezzo” and proposes the exploration of the Sacco Valley as an emblematic synthesis of the tensions between social and ecological dimensions that characterize the territories of Italy in-between metropolises and inner areas. In a territory marked by a century structured over time around various sectors, the river stands as a structuring axis and a witness to global and local transformations. The infrastructures of the Valley - such as the canal systems, the industrial development policies, the road network that fragments territories and local cultures - materialize forms of exclusion and privilege, revealing the intrinsic asymmetries in the development processes. These infrastructures, although often perceived as abstract entities functional to the connection of flows, possess a materiality and symbolic weight that anchor them deeply to the territory. They are devices that amplify inequalities. Divested of its vital function and reduced to a “stream of unconsciousness,” the Sacco River is reduced to a symbol and vector of pollution, otherwise forgotten and excluded from everyday life. It becomes a point of the intersection between environmental and socio-economic marginality: an impoverished actor of an unsustainable development model, the offspring of extractive logics and industrial reconversion. The Valley, a significant part of which is within the boundaries of an area identified by the national government as being of significant environmental concern, requiring special environmental remediation and restoration measures, tells now a history of new extractive trends that are being distributed in the seemingly empty space left by the broken promise of growth. The Sacco Valley becomes a laboratory to investigate socio-ecological justice, where the frictions between promises of industrial well-being and the disillusion of that development model converge: how to rethink infrastructures for a vision that considers the right to space for all forms of life? What territorial configurations can foster alternative and emancipatory coexistences? How can policies and projects address inequalities, not only material, but also symbolic and cultural? The relational value of infrastructures and the plurality of subjectivities that inhabit the territory (human and more-than-human communities) require renegotiating the territorialization of transition also as a process in which it is necessary to clarify and reposition rights, avoiding forms of compensation that perpetuate unequal access to collective resources.

Keywords:

infrastructures; intermediate territories; socio-ecological justice

SS_02 DISCUSSING SPATIAL JUSTICE FROM/TOWARDS A SOCIO-ECOLOGICAL PERSPECTIVE / 1926

Civic peri-urban: repositioning peri-urban urbanization in new forms of inter-generational co-ownership

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Peri-urban territories are complex socio-spatial configurations that challenge the dichotomous theoretical categories of urban and rural inherited from urban theory. They represent the local-scale outcome of spatial restructuring processes that organically intertwine decentralization, deconcentration, and territorial dispersion. These phenomena are observable both in the distribution of functions, built densities, and population, as well as in the extractive processes that subordinate these spaces to infrastructures serving urban performance. This dynamic results in a space devoid of long-term co-evolutionary processes (landscape), where specificities have been dissolved within a few decades, and the ecological context has become an instrument of the provisional present.

The intricate geography of peri-urban areas is symptomatic of multipolar organization,

where residual spaces are simultaneously a frontier to be shielded from further urbanization and a porous “ecotone” open to new forms of use and sociality.

The closure of the peri-urban realm to urban externalization and extractive phenomena necessitates a process aimed at redistributing rights through a negotiated space where urbanity acknowledges an ecological context beyond the immediacy of present needs. This process, co-created with local communities, seeks to overcome hierarchical and anthropocentric conceptions of justice, fostering intergenerational co-ownership founded on socio-ecological relationships. Such principles resonate with Article 9 of the Italian Constitution, which links environmental protection, biodiversity, and ecosystems with the rights of future generations. This shift requires rethinking the individualistic conception of space, the anthropogenic pressures, and the fragmentation of ecosystems. It calls for the recognition of collective rights based on shared practices and «living uses», which transcend the dualism between city and nature, as well as the perceived separation of society and the environment.

The concept of civic uses offers a valuable reference point, as it shares, in its original configuration, a functional character with the peri-urban fringe, often viewed as a space of performance. Contemporary legislation reframes this functional aspect by emphasizing ecological and environmental protection, thereby embedding intergenerational co-ownership within values of territorial inclusivity (Mangone, 2022).

Such closure, paradoxically, opens up the regenerative potential of peri-urban spaces, envisioning eco-public networks at a metropolitan scale as incubators for new urban civic spaces (Formato, 2021) and spatial assemblages capable of recovering «living uses» (Capone, 2016: 621). Reconstructing a public framework of civic and collective rights, practices, and spaces establishes a connection between landscape protection (e.g., Constitutional Court ruling 310/2006) and democratic participation in decision-making. This reflects a collective capital linking land ownership to the community (Di Genio, 2019: 127-140) and liberates peri-urban landscapes from any further stable development or exploitation.

This process of “re-landscaping” reimagines spaces where quantitative consumption has already occurred, reassembling what remains into qualitative relationships through spatial practices. These practices oppose the «speculative supremacy of the conceived» and ensure that the «technical activation» (Capone, 2020: 34) of regulatory frameworks does not flatten space into a mere commodity or consumable asset.

Keywords:

peri-urban, civic uses, re-landscaping

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SS_02 DISCUSSING SPATIAL JUSTICE FROM/TOWARDS A SOCIO-ECOLOGICAL PERSPECTIVE / 1998

MOTILITY as a lens to challenge the urban metabolism research agenda. Towards more just and sustainable cities

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Motility is a biological term, referring to the capability of organisms to move independently. The research "MOTILITY - Metabolism Of inTersectionaLITY" starts from this metaphor, to investigate mainstream discourses on Urban Metabolism (UM), Sustainable Development (SD) and Circular Economy (CE), recently criticized for being focused on technological issues, neglecting spatial and social justice, and thereby not considering the need for social and systemic changes (Agyeman, 2005; Korhonen et al., 2018). To adopt a Territorial Metabolism perspective, there is the need to integrate various components: human, industrial, urban, political, landscape (Grulois et al., 2018). Building on past research on urban political ecology, the research works from an intersectional perspective looking at the management of spatial resources and intersecting social abilities of minority groups in sample communities in East Naples.

MOTILITY focuses on the city role on social interaction among people developing their own identity and orientation, conceiving sexuality and gender as multiscalar axes for developing and expressing meaning and power in public spaces (Wright, 2010). To this end, it revisits research within the diverse fields of queer and feminist theories, studying a variety of social experiences of places, identity and power across the space (Forsyth, 2001), challenging the traditional discourse on CE and related practices.

The objective is to include minorities in envisioning new purposes for metabolic flows, raising awareness as the base to promote local transitions. By fostering citizen engagement in co-designing CE micro-actions, the research aims to bridge the gap between social, behavioral aspects and the ecological transition, advancing a socially just ecological transition.

To support an experimental phase of mapping, the project will develop a community-based online mapping platform for digitally archiving experiences of care and use of metabolic resources and flows in the built environment, to build collective learning and awareness from past experiences/acquired competences and strengthen the potential relationships with forms of co-production of sustainable and inclusive space with the institutions.

The project started in January 2025, posing three questions, on which the research team is currently working through a literature review/mapping of the national and international debates, actors, main categories of research and critical points:

- Which are the main forms of marginalization in the access to metabolic resources (water, air, soil, etc.) for people out of heteronormativity?
- How do intersectional categories of minorities respond to socio-ecological issues, using metabolic resources and spaces (privately/collectively)?
- To which extent could these collective experiences of care and use feed Niches of Innovation (ref. Transition Studies) and make significant progress in terms of regulations, institutional level, experimental governance?

In compliance with the 2030 Agenda for SD (UNDP, 2015), the paper will explore spatial and social justice aspects, which can contribute to increasing the engagement of non-conformist groups (Fernandez & Maione 2017), disregarded by targeted policies of CE, as subversive of the mainstream approach on resource management and related spatial assets.

Keywords:

urban metabolism, intersectionality, minorities, nonconformist

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SS_02 DISCUSSING SPATIAL JUSTICE FROM/TOWARDS A SOCIO-ECOLOGICAL PERSPECTIVE / 1898

Water justice, scarcity and environmental flows. The case of Marseille

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Marseille is situated in a dry region lacking water courses and groundwater reservoirs. Despite such scarcity, the city benefits of an abundant freshwater supply of the best quality. The Canal del Marseille is the 1800s infrastructure that allows this by extracting water from the Durance river -an artificial system replicated at a bigger scale and integrated by the Canal EDF, the Canal de Provence, and several storage basins.

The territorial hydraulic network is efficient and mostly composed of pressurized underground pipes which minimize leaks: it draws water from the river ecosystem and bypasses the surrounding landscapes for the benefit of anthropic consumption. Together with energy production, the system uses 80% of the Durance's flow. While the distribution principles don't normally cause conflicts between human consumers, the river doesn't have a legal personality, lacking representation for its environmental flows needs -on which many ecosystems in a vast territory depend, like the étang de Berre wetland, endangered by the Canal EDF's outlet, and the Rhone delta area.

The extractivist water 'cycle' of Marseille -where only 12% of the ground isn't sealed and floods regularly saturate the drainage networks -ends into the sea, sometimes without treatment. Yet the presence of two water streams within the urban area can be an occasion for rethinking the city-water relationship: how can urban soils be transformed to support biodiversity?

While water bodies can paradoxically weaken their stand by achieving legal rights (O'Donnell 2018), a 'political ecology of things' perspective (Bennett 2010) may strengthen the value of all water flows, especially in the need of a new environmental justice for the city (Morizot 2024; ETH 2020) in a climate that is becoming drier (Bertrand 2023). Can a new awareness of urban water help recognise the global necessity (Latour 2015) of a new ecological balance with the larger territory?

Keywords:

urban political ecology; water biopolitics; ecological commoning

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SS_02 DISCUSSING SPATIAL JUSTICE FROM/TOWARDS A SOCIO-ECOLOGICAL PERSPECTIVE / 1903

Uncovering the potential of community energy actions to cope with energy poverty in remote areas: a systematic literature review

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Energy is one of the essential services that everyone should have access to, as identified by the European Pillar of Social Rights. Nevertheless, according to Eurostat, in 2023, an average of 10.6% of the European population was in a condition of energy poverty, i.e. could not afford to keep their homes adequately heated. For some Mediterranean countries (Portugal, Spain, Bulgaria, Turkey) and Lithuania, this percentage exceeded 19% and reached about 21%. Against this backdrop, alleviating energy poverty becomes crucial to fostering a fair and equitable transition. However, the design of effective policies to reduce energy poverty in the EU is a challenge that faces several barriers, including the lack of (i) a shared definition of energy poverty at the European level, (ii) a set of common indicators to measure and monitor it, and (iii) the disaggregation and spatialisation of data.

Energy poverty is multidimensional and thus depends on a plurality of factors, both individual (income, living conditions, available technologies, health-related needs) and external (energy price, climatic conditions, which are also exacerbated by climate change). In addition, energy poverty represents a form of spatial injustice regarding the geographical issues of resource accessibility, production, and distribution.

The 'Clean energy for all Europeans package', adopted by the EU in 2019, introduced the concept of energy communities to denote forms of citizen-driven energy actions able to accelerate the clean energy transition and foster social innovation. Regarding the latter, engaging and empowering citizens can fundamentally impact sustainable behavioural change for consumers, who become energy prosumers, thus helping to transform the energy system. Moreover, this engagement is extended to all consumers, regardless of socio-economic status. Hence, energy communities represent a valuable tool in responding to energy poverty. Despite this promising picture, evidence of their contribution to a just and sustainable energy transition in Europe is still lacking: further experiences, scientific studies, and analysis tools to capture their potential in energy poverty alleviation are thus needed.

This work addresses these gaps from a spatial planning perspective while adopting a socio-ecological justice lens. Indeed, it investigates practices of clean energy production through multi-purpose community actions, focusing specifically on remote areas, typically rural and remarkably impacted by poor energy access and socio-economic disadvantage. It discusses the results of a systematic literature review conducted in two phases to investigate possible access to such practices. Through a keyword analysis - in Scopus - of titles and abstracts, the first phase collects publications since 2000 with one or more EU case studies in which three research domains - namely, clean energy production, community actions, and remote areas - appeared jointly. The second phase explores the links between domains and identifies those publications with the highest relevance to the research objective. Out of 1127 publications collected, the number has

eventually been reduced to 67.

Based on the results obtained, the contribution discusses several issues, including (i) in what geographical contexts and subject areas they are addressed, and concerning the relevant publications identified, (ii) what are the elements that generate success or problematic situations, (iii) what is the degree of citizens engagement, and finally (iv) which is the primary publication's scope or output, e.g. assessment, modelling or implementation. In conclusion, the contribution questions to what extent the available instruments and identified initiatives can be improved with a view to remote areas.

Keywords:

energy poverty; sustainable energy transition; community actions; remote areas

SS_02 DISCUSSING SPATIAL JUSTICE FROM/TOWARDS A SOCIO-ECOLOGICAL PERSPECTIVE / 1907

UNFAIR PROXIMITY The coexistence of energy infrastructures in marginal territory, reemerging conflicts, unfair supply, and unbalanced governance

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The territories of energy production often do not coincide with those of their consumption. The "energy footprint" of urban areas has always extended over increasingly large basins, shaping distant and detached territories and creating "reciprocal landscapes." For example, for much of the 20th century, hydropower production has particularly impacted alpine territories near urban areas, marginal and fragile regions both in socio-economic terms and in terms of representation and self-determination. The construction of these infrastructures has not merely juxtaposed with the existing forms of territories but has instead led to drastic transformations, including the physical erasure of landscapes (valley submersions) and the alteration of natural and economic metabolisms (reduced water flow has changed river ecosystems and related activities). Over time, these infrastructures have failed to provide benefits to the surrounding areas (in many cases, the regions hosting the plants were the last electrified) and have even caused catastrophic repercussions (e.g., the Vajont disaster). These events are not as distant from us as they may seem. Today, energy transition policies and pressing narratives about energy and water security have once again turned the spotlight on mountainous regions and their potential infrastructural development, reviving long-standing tensions. However, something new seems to be emerging in this era of re-infrastructuring: historical memory and the growing awareness of local communities have fostered a widespread network of conflicts, forcing a reassessment and redesign of these projects. This situation presents an opportunity: acknowledging and giving agency to these conflicts by emphasising their spatial dimension could enable a fair and balanced design that considers both the external interests of the infrastructure and the local needs of the communities (human and non-human) living nearby.

This contribution aims to reinterpret five stories of conflict in the Piave basin in the Eastern Italian Alps, highlighting often latent but ever-present spatial and design-related issues. The construction of small hydroelectric plants, the reconfiguration of a high-voltage power line, the management of an old hydroelectric reservoir, and the funding for a new one for water supply all serve as examples of the new forms of territorial injustice tied to hydropower. At the same time, these cases reveal new potential design approaches that emerge from conflict and strive for a balance between external and local interests.

Keywords:

hydroelectric; energy security; mountain; energy conflict

SS_02 DISCUSSING SPATIAL JUSTICE FROM/TOWARDS A SOCIO-ECOLOGICAL PERSPECTIVE / 1913

Ecological Strategies for Historic Center of Lima: Camaná Linear Park

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The Historic Center of Lima is an urban palimpsest that reflects the various stages of the city's growth. The initial orthogonal and regular grid, typical of hispanic cities, was altered during the 20th century by massive road widening projects that prioritized automobiles over pedestrians. This process led to an inadequate distribution of available urban space, as vehicular asphalt areas prevailed over vegetated zones and shaded spaces. This street configuration contributed to the generation of heat islands and temperature increases in the Historic Center compared to other areas of Lima with greater vegetation coverage. Furthermore, the expansion of vehicular areas accelerated the degradation of air quality, as evidenced by pollution levels that exceeded the maximum permissible limits established by the WHO.

To counteract these effects, the redesign of road widening projects is proposed, transforming them into pedestrian boulevards that function as green corridors while maintaining minimal vehicular areas. This strategy seeks to restore the historical, urban, and ecological value of this heritage zone. In this context, the Camaná Linear Park emerges as a flagship project to provide green infrastructure for the city: it proposes the pedestrianization of an underutilized vehicular space resulting from an incomplete road widening project extending across only three blocks. The intervention envisions renaturalizing the street and converting it into an ecological corridor that connects public spaces near the Rímac River with the 'Parque de la Exposición', one of Lima's most important green areas.

This proposal not only promotes the integration of the area's commercial dynamics but also contributes to the revaluation of historical heritage and the renaturalization of the Historic Center. Moreover, it will provide the city with essential ecosystem services, such as temperature regulation and biodiversity conservation.

Keywords:

historic center, ecological corridor, spatial justice

SS_02 DISCUSSING SPATIAL JUSTICE FROM/TOWARDS A SOCIO-ECOLOGICAL PERSPECTIVE / 1921

Mobile Commons and spatial justice in the face of climate change on the North Adriatic coast

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The North Adriatic coastline has undergone profound transformations due to the interplay of human interventions and natural forces. Two major modernization projects, in particular, have reshaped the region: the early 20th-century land reclamation efforts, which converted marshy areas into productive land, and the extensive developments that established coastal resorts, now among Italy's leading tourism sectors. However, agricultural productivity in the reclaimed areas is in decline, while coastal tourism faces the crisis of mass beach tourism. Today, climate change introduces new and urgent challenges, particularly rising sea levels, necessitating an examination of spatial justice (Soja, 2010) and mobility commons (Sheller & Urry, 2006; Sheller, 2018) in the region. This paper investigates the modalities and impacts of climate change on the North Adriatic and explores future mobility and adaptation strategies. It emphasizes the uneven distribution of climate change effects across different territories and the role of planning processes in either mitigating or exacerbating social and spatial inequalities. Employing a qualitative, multi-method approach, the research integrates interviews, policy document analysis, and a review of European projects. Based on the collected data, a 'Scenario 0' (business-as-planned) is formulated to identify current trajectories and gaps in long-term strategic planning, while future scenarios are developed under the hypothesis that promoting slow forms of mobility can drive a more just transformation of the territory.

Results indicate that climate change has only recently emerged as a concern in the North Adriatic. While European projects reflect a growing awareness, their approach remains incremental rather than transformative, and planning documents still lack concrete adaptation measures. Interviews with local administrators reveal varying levels of concern, but climate change is not yet perceived as an urgent issue. This lack of adequate recognition, coupled with the limited implementation of adaptation strategies, is already contributing to unequal impacts across different territories and populations—disparities that are expected to intensify in the coming years. In regard to mobility, conflicting trends are evident. On one hand, investments in high-speed infrastructure reinforce territorial centralities and enhance economic competitiveness, often prioritizing tourism-driven growth over local needs and environmental justice. On the other, certain local initiatives promote alternative, slower mobility networks aimed at fostering sustainable territorial development beyond seasonal tourism. These initiatives have the potential to improve spatial justice by ensuring more equitable access to resources and mobility opportunities.

Keywords:

Climate Change; Mobility, Mobile Commons; Spatial Justice; Adaptation

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SS_02 DISCUSSING SPATIAL JUSTICE FROM/TOWARDS A SOCIO-ECOLOGICAL PERSPECTIVE / 1908

Brussels's not an island. A critical reflection on the places of multispecies spatial injustice

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The need to expand the idea of justice from the individual human subject to the non-human and the planetary is increasingly recognized today, thanks to a growing body of theory nurtured by Indigenous, decolonial, and feminist posthuman philosophies (Winter, 2022). The emerging field of Multispecies Justice recognizes the interconnectedness of human and other-than-human oppression, seeking to build fairer interspecies relationships (Celermajer et al., 2021). Here, the role of urban design and planning is compelling, as the design of space is part of a biopolitical action that has an inherent responsibility to make space (or not) (Secchi, 2015) for the living to thrive. As Metzger notes (2023), even in the “impossibility” of the perfect coexistence for all beings simultaneously in any space, planning can certainly act on reducing the degree of violence and segregation that its processes produce.

In reasoning about socio-ecological spatial justice, I argue that a multispecies justice framework can help unveil blind or overlooked injustices spots. Indeed, the landing of this sensibility into urban design practice questions us about its spatial repercussions. Where do the social and ecological demands create friction when we consider the interests of all the species and other-than-human actors involved, and not just human well-being?

Drawing on interviews and fieldwork in Brussels with people involved in projects using a more-than-human approach (students, engaged citizens, urban practitioners, university researchers, administration workers, etc.) I propose a critical reflection on the places of multispecies spatial injustice, helped by a radical ecological standpoint that seeks nothing less than the emancipation of the living (Ouassak, 2024). Alongside spaces where transspecies socio-ecological injustices are more evident (i.e. contested undeveloped abandoned land in the compact city), the research underpins how the major sites of violence were deliberately planned out-of-sight/out-of-town and still are often forgotten in the major discourse about city ecological transition, where the Brussels capital region is depicted as an island forgotten of its territory.

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Keywords:

multispecies justice, radical ecologies, more-than-human cities

SS_02 DISCUSSING SPATIAL JUSTICE FROM/TOWARDS A SOCIO-ECOLOGICAL PERSPECTIVE / 1911

Re-mining Punta Corna. A Laboratory on the Local Impacts of the Critical Raw Material Act in the Alpine Region

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The transition to a clean energy economy necessitates securing critical minerals—such

as nickel, copper, and cobalt—essential for advanced technologies and low-carbon solutions. The European Critical Raw Materials Act (2023) seeks to enhance the EU's self-sufficiency by mandating domestic sourcing of mined, processed, and recycled materials, while addressing the geopolitical challenges of dependence on external suppliers. This proposal explores the environmental and socio-economic implications of renewed extractive activities in Europe, focusing on the Alpine landscapes, particularly investigating Italy, which possesses 16 of the 34 critical raw materials identified in the Act but lacks active metal mining since the 1970s.

Our investigation centers on the proposed strategy by the Italian government to revitalize old and open new mines, particularly in the Alpine regions, alongside the need for substantial technological investments. Among the significant sites is Punta Corna, once Europe's largest cobalt mine, now a focal point for examining the clash between extractivist development and sustainable local economies rooted in tourism. Through a cartographic analysis, we analyze the competing narratives surrounding these mining initiatives, characterized by a traditional extractivist model and the "enrichment economy" (Boltanski & Esquerre, 2019) which emphasizes ultra protective territorial development strategies as territorial patrimonialization. This contrast raises critical questions about the sustainability of mining projects and their alignment with the values of local communities experiencing peripheralization and depopulation.

Our findings shed light on the intricate conflicts arising from rare earth extraction, illustrating the tension between economic aspirations and environmental integrity but also across different development paradigms. By framing Punta Corna as a case study, exploring its extractivist dynamics as advantaged laboratory for understanding the fears and hopes of local communities linked to the European Critical Raw Materials Act projects, we aim to ultimately contributing to broader discussions on sustainable resource governance and the socio-political complexities of extractive economies.

Keywords:

re-mining, alpine region, territorial patrimonialization, extractivism, depopulation

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SS_02 DISCUSSING SPATIAL JUSTICE FROM/TOWARDS A SOCIO-ECOLOGICAL PERSPECTIVE / 1912

Ecopublica: a tool for socio-ecological emancipation

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The paper proposes to explore the issue of spatial justice through the concept of the eco-public network, conceived as the intersection of spaces that integrate ecological and social values.

North-East Italy, the object of this analysis, is characterised by a recurrent tendency towards disconnection, with a growth model that has produced fragmentation and territorial, economic and environmental fragility. However, the wide meshes of this territory suggest new opportunities for enhancement, focusing on open space as a de-polarised ecological framework of variable intensity, which is activated and reorganised on the basis of multiple factors and conditions. This network involves on the one hand physical and spatial elements (urban and rural open spaces, open porosities in the urbanised area, slow mobility routes, collective infrastructures, community spaces), and on the other hand expectations and imaginaries that over time have defined ecological roles and values in relation to uses and practices.

Observing the eco-public network, with its uneven and plural movements, allows us to

reflect on the very essence of the project and the need to recognise spaces, subjects and collaborations of potential transformation, as in the proposed case of the renaturation of the Stella River. Among the actors of change are human and non-human subjects that make it necessary to explore the topic of cohabitation, of new possible alliances and conflicts, including spatial ones. In this context, there emerges the need to promote what we might call ‘weak projects’: minor, open and processual projects that rely on a constantly changing framework, and that reflect the action of non-hierarchical and secondary subjects.

The spatial achievements that characterise these projects are often fragile, charged with emancipatory tensions, and subject to external pressures. However, recognising their potential allows us to test the circularity between prefiguration and exploration: past the time of the ‘grand urban project’, we are called upon to experiment with an open, possibilist and pragmatic attitude, where even different, secondary or vulnerable subjects are recognised as having the capacity for change and spatial rights at multiple scales.

Keywords:

eco-public network; weak projects; emancipation

SS_02 DISCUSSING SPATIAL JUSTICE FROM/TOWARDS A SOCIO-ECOLOGICAL PERSPECTIVE / 1914

Designing good life for all. Explorations on “fragile” neighbourhoods in Trieste

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In Europe, multiple crises (economic, environmental, social, demographic, ...) are impacting the quality of life in urban contexts, with direct consequences on the “affordability” of housing and the resilience of welfare facilities. While sustainability, inclusivity, and accessibility “for all” are central to many urban regeneration interventions, their translation into local actions often suffers from vague strategies and, in the worst cases, results into depoliticized processes, gentrification and speculative dynamics displacing residents (Checker, 2007; Swyngedouw, 2007). Strong is, therefore, the need for a project-oriented reflection on: i) the spatial conditions of comfort; ii) the policies, actions and actors for their “just” implementation.

The paper questions the conditions of poverty and fragility that are growing in many European cities. “Poverty” is framed as a multidimensional phenomenon encompassing material, relational, and contextual factors that constrain well-being, making people “fragile” by limiting their opportunity to build and maintain a decent quality of life (Sen, 1976; Bourguignon & Chakravarty, 2003; Aaberge & Brandolini, 2015). From this perspective, space is understood as a “capacitating” infrastructure (Sen, 1993; Nussbaum, 2011), that can either worsen or help reduce fragility conditions. Consistently to this, urban design is called to overcome a binary view of private space versus public space towards a networked approach integrating services, open spaces, and welfare equipment to create more accessible and personalized support to well-being.

The paper describes “research by design and action” developed in marginal parts of the inner city of Trieste, a medium-sized Italian city facing population aging and decline, economic distress, gentrification, and rising pressure on welfare facilities. The research

involves: (i) mapping spatial indicators of poverty, including housing, food accessibility, socio-relational, and environmental conditions; (ii) engaging local stakeholders in dialogue and fieldwork; (iii) developing design explorations on underutilized spaces to strengthen the relationship between collective facilities and open spaces.

Keywords:

Housing affordability; Fragility; Trieste

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Special Session 3 | REPOPULATING LEFT-BEHIND TERRITORIES: POLICIES, PRACTICES, AND EMERGING PATHWAY

SS_03 REPOPULATING LEFT-BEHIND TERRITORIES: POLICIES, PRACTICES, AND EMERGING PATHWAY / 1943

Revitalizing the Po Valley's margins: challenges, strategies and future prospects

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Among Italy's many "middle lands," the Po Valley's lower plains (Bassa Padana) remain one of the least studied. This area, stretching across Lombardy, Emilia-Romagna, and Veneto, has long been perceived as marginal and economically depressed. However, recent years have seen profound transformations reshaping its spatial structure, socioeconomic fabric, and collective identity.

The Bassa Padana represents a vital yet fragile agricultural heartland. Its highly mechanized agro-industrial system, intensive livestock farming, and historically abundant water resources are now facing severe environmental challenges, including water scarcity, soil degradation, and climate change pressures. Urbanization remains limited, with small towns dotting the landscape, while industrial sectors such as mechatronics, biomedical, and household appliances concentrate in the more dynamic western areas. This contribution critically examines the area's evolving dynamics. On one hand, processes of marginalization, demographic decline, and economic downturn exacerbate a sense of isolation. On the other, territorial development initiatives focus on revitalizing local heritage, fostering new economies, and integrating diverse cultural influences. The interplay between sustainability-driven local projects and the pressures of agro-industrial and logistics expansion raises key questions about the region's future. The contribution also invites reflection on the risks and opportunities of the area's development model in the face of climate and social change.

SS_03 REPOPULATING LEFT-BEHIND TERRITORIES: POLICIES, PRACTICES, AND EMERGING PATHWAY / 1944

Attempting coproduction, (strategically) misunderstanding coproduction, failing coproduction? Motivations, positionalities, challenges and (concrete) experiences in coproduction processes on left-behind places in Lombardy, Italy

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The newly emerging housing question is widely considered to be exclusively affecting large metropolitan regions. This is also true for Italy, where Milan –and its metropolitan

region –have become the hotspot of a housing supply and affordability crisis that does not seem to mitigate in anyway. However, many peripheral areas in the region of Lombardy are experiencing high stress in their ability to answer housing demand.

Forms of loosely defined coproduction are widespread in area-based, integrated policies in the European space. National and regional governments –as well as local ones – increasingly recur to the mobilisation of external actors to define and implement strategies, both to confront a crisis of legitimacy that affects the political system and its executive apparatuses while exercising governance “at a distance” and to mine more profound and more extensive knowledge deposited with the social organisation. These processes are especially evident in large metropolitan areas, but they are making themselves more and more visible in rural or peripheral urban environments, i.e., left-behind places. National institutional design, governance, and participation legacies matter significantly in Europe. However, we can say that Such contexts are less used to this kind of exercise; therefore, reflecting on the conditions and challenges of their implementation there is of utmost scientific interest.

The paper intends to address this issue by presenting a long-term, comprehensive coproduction exercise conducted since 2022 by a working group of planners, geographers, sociologists and architects of the Department of Architecture and Urban Studies at the Politecnico di Milano, Italy, in the framework of an agreement with the regional government of Lombardy. The agreement –framed as a coproduction accord between regional technical apparatuses and a research institution –is aimed at supporting regional offices and local actors in the design and implementation of area-based integrated strategies involving 14 areas deemed left-behind places. The group engaged in sustained exchanges with regional officers and in the organisation of local workshops with over 1400 participants. What forms of knowledge and labour are involved in the coproduction of place-based policy and their implications for the understanding of professionals and policy-makers? 2. What new organisational modes and institutional forms are emerging for the coproduction of place-based policy and the relative implications for researchers, universities and funders? 3. how does the coproduction of place-based policy relate to ideas and movements for foundational and everyday economies, just transition, degrowth, postextractivism and regenerative economies?

SS_03 REPOPULATING LEFT-BEHIND TERRITORIES: POLICIES, PRACTICES, AND EMERGING PATHWAY / 2061

Infrastructuring repopulation. Regeneration of left-behind territories and construction of new housing practice.

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The more the regenerative projects and experiments of paths of epopulation of the left-behind territories and mountainous areas advance, the more a fact emerges forcefully: the concrete difficulty of welcoming and accommodating, transforming them into inhabitants, the various people who today, in Italy, seem to express a growing demand for mountains.

This finding that emerges from the experiences taking place in the territories severely contradicts what has always been a powerful discursive element in favor of regeneration projects in left-behind territories: the existence of a considerable housing stock that is highly available and favorable - by quantitative size, economic value, etc. - for implementing revitalization and repopulation policies.

Instead, in Italy, all experiences in the field show how the conditions of technological and

qualitative backwardness of the existing stock the difficulties in finding housing units on the rental market make this issue today a priority concerning policies on left-behind territories in recent years, traditionally focused on the triad health, schooling, mobility. Many realities in the Alps and Apennines where regeneration pathways are underway show attempts to build neo-inhabitable conditions through the “autarkic” construction of housing and welfare services for neo-population. However, it is clear that these virtuous actions characterized by “do it yourself” are not sufficient to build real and effective widespread action to support potential neo-housing processes.

Our research is positioned within this challenging framework. It aims to address issues regarding housing possibilities and models suitable for repopulation dynamics, both in terms of policies and projects for sustainable rents and possible public action at the local and national scale for the activation of projects that take into account at the same time housing, employment and access to culture and community-making needs.

Keywords:

left-behind territories; habitability; repopulation

SS_03 REPOPULATING LEFT-BEHIND TERRITORIES: POLICIES, PRACTICES, AND EMERGING PATHWAY / 1961

Navigating (Im)mobility and alternative development in Left Behind Areas: Insights from Valle di Viù, Italy

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Human mobility has been investigated as a key factor in the challenges faced by left-behind areas (LBAs), yet its actual capacity to drive sustainable development remains underexplored. This study critically examines the case of Valle di Viù, a mountain area in the Turin Metropolitan Area, Italy, to explore the limitations, contradictions, and potential of relying on human mobility to address the problems of depopulation, ageing demographics, decaying infrastructure, and an overarching sense of left-behindness in mountain areas.

While inward mobility present opportunities for revitalization —for instance through the return of former residents and the attraction of newcomers —structural challenges persist. Residents often experience social isolation, infrastructure exists in precarious and intermittent forms, community resources are stretched thin, and local economies struggle to accommodate new residents or retain existing populations.

Drawing on in-depth interviews with key players and individuals conducted in Valle di Viù, this study examines the perceptions and livelihood practices of (im)mobil people across various life domains to understand micro-strategies for coping with peripherality. It also analyses policies and projects addressing LBAs at different scales and their impacts on specific local contexts. The analysis focuses on three specific dimensions: first, conventional development strategies primarily linked to infrastructure provision; second, non-conventional strategies emphasizing well-being, quality of life, local identity, and place attachment; and third, (im)mobility dynamics that consider not only in- and out-mobility but also recognize immobility as a critical component of local development.

Preliminary findings suggest that mobility-driven development should be associated to the removal of structural barriers to reduce the risk of exacerbating disparities. This underscores the need for systemic policies and place-based actions to ensure equitable access to resources and opportunities. Furthermore, the study highlights the importance

of nuanced, context-sensitive approaches to address the underlying causes of marginalization in LBAs.

Keywords:

Left Behind; human mobility,

SS_03 REPOPULATING LEFT-BEHIND TERRITORIES: POLICIES, PRACTICES, AND EMERGING PATHWAY / 1995

Social Infrastructures for Repopulation: Learning from ‘School Zones’ in England

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Across diverse sized cities in England, School Zones are a new way to plan for districts centred on securing the next generation’s well-being in disadvantaged areas. This paper teases out lessons for repopulation from social infrastructures, which is demonstrated by such zones around public educational facilities in England. The paper builds on a recent study of ‘School Superzones’ in London (Natarajan, 2025) as well as concepts of social infrastructures to generate alternative forms of value for declining places (Tomaney et al., 2024). School Zones step up to the lack of delivery on maintaining long-term community wellbeing (Natarajan et al., 2020), and harnesses community capitals inherent in educational facilities through local partnerships. These offer non-growth dependent value generation and support place attachment, with generation of local social value and place-based liveability. As such, in respect of population-challenged areas of Europe, School Zones have great potential. Drawing on research in targeted districts in Brighton, Birmingham and London, the emerging outcomes of School Zones will be explored, including insights from those involved in partnerships around these initiatives, i.e. stakeholders from civil society, local businesses and government actors. Analysis centres on the question: how might School Zones pre-figure means to long-term thriving communities that do not rely purely on the logics of capital investment or growth?

Keywords:

School zones, left-behind, post-growth, sustainable communities

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Special Session 4 | PLANNING FOR TWIN TRANSITION IN REGIONAL AND URBAN SYSTEMS

SS_04 PLANNING FOR TWIN TRANSITION IN REGIONAL AND URBAN SYSTEMS / 1933

Insights from Portugal's Solar Energy Transition in the framework of Cohesion Policy (2014—2020) implementation

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The European Union's (EU) ongoing energy transition, rooted on frameworks such as the European Green Deal and REPowerEU, seeks to balance climate commitments with goals surrounding energy security and economic competitiveness. As the EU reconfigures its energy strategies, member states are required to adopt more ambitious renewable energy targets within increasingly constrained timelines. This has given rise to heightened territorial tensions related to renewable energy development (Poggi et al., 2018; Rodríguez-Pose & Bartalucci, 2023; Vezzoni, 2023). In Portugal, recent updates to the National Energy and Climate Plan have set a significantly higher target for solar capacity, intensifying land-use pressures, namely in agricultural areas and forested land, with impacts in sustainable spatial planning. This study presents the Cohesion Policy as an essential financial tool for encouraging sustainable energy systems based on important characteristics of project funding in Portugal, presenting prospects for advancing climate and environmental goals. An analysis of projects funded between 2014 and 2020 under the five regional operational programmes and the Sustainability and Efficient Resource Use Programme (POSEUR) reveals that the Cohesion Policy has supported a diverse range of energy transition initiatives, including decentralised solar energy, renewable gases such as hydrogen, and energy efficiency initiatives. Moreover, a positive relationship was observed between funding and PV self-consumption, particularly in municipalities with higher CO₂ emissions from the industrial sector. Building on these findings, this study discusses potential future challenges and opportunities of Cohesion Policy, with a particular focus on co-location strategies promoting sustainable spatial planning.

Keywords:

Renewable Energy; Solar Energy; Cohesion Policy; European Union; Portugal.

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SS_04 PLANNING FOR TWIN TRANSITION IN REGIONAL AND URBAN SYSTEMS / 1946**Planning for Clean Transport: Role of Electric Vehicles and Hydrogen Energy in Urban and Regional Systems****Author:** M.B. Sushma¹**Co-author:** Igor Sirnik²¹ *Wageningen University*² *Wageningen University and University of Ljubljana***Corresponding Authors:** sushma.marangantibhatter@wur.nl, igor.sirnik@wur.nl

Electric vehicles (EVs) and hydrogen-based energy systems are emerging as transformative solutions in the transportation sector, offering the potential to significantly reduce carbon emissions and promote a cleaner environment. By 2030, hydrogen is expected to complement other renewable energy sources, playing a pivotal role in the energy transition alongside EVs (Tran et al., 2023). However, the integration of Twin Transition in transport depends on the equitable distribution of EV charging stations (EVCS) and hydrogen refueling station (HRS). To address social inequalities in infrastructure placement, this study is guided by research question: What are the socio-economic, environmental, and demographic factors that quantify spatial inequity in EVCS and HRS access?

This study presents a decision-making framework for developing policy recommendations to evaluate the optimal siting EVCS and HRS based on incorporating stakeholders' preference (i.e., cost, congestion, environmental considerations) and socioeconomic and demographic factors. Recent studies conducted studies on spatial planning of EVCS and HRS focused on minimizing investment costs (Xu et al., 2018), optimizing traffic flow (Tran et al., 2023), and managing charging schedule (Gong, D., 2019). However, a significant gap persists in addressing equity concerns related to the spatial distribution of EVCS and HRS infrastructure. We propose a GIS-based Multi-Criteria Decision-Making (MCDM) model that integrates socio-economic, environmental, and demographic factors to assess spatial inequities in access to EVCS and HRD (Rashmitha et al., 2024). The model's efficacy is validated through a city Warangal (India), recognized for promoting sustainable mobility (PM E-DRIVE, 2023). The Warangal city covers an area of 46.821 km², and its existing network of EVCS and HRS provides a suitable setting for validating the proposed framework.

Preliminary results identify vehicle ownership, population, household income, education level, major road connectivity, and proximity to utility areas as key factors influencing placement of EVCS and HRS. The regions in Warangal are categorized into low, medium, and high inequity levels. Approximately 63% of the region falls within high-inequity zones and are characterized by low vehicle ownership, high population density, poverty, limited education access, and inadequate median household income. These areas also lack proper power grids and road connectivity, increasing EVCS installation costs and discouraging investment. However, the majority of the population in these areas is aged 20–40 years, indicating a strong potential for future EV demand. The current and predicted EVCS and HRS placements also failed to account for evolving EV adoption, policy shifts, and grid constraints, worsening infrastructure disparity. Additionally, limited awareness and affordability create further inequities.

The integration of EV and hydrogen infrastructure is essential for achieving the Twin Transition in transport, where green and digital innovations converge to create resilient, inclusive mobility systems. This study aims to address emerging disparities in EVCS and HRS accessibility by developing a generalizable framework to quantify inequities in station placements. The framework enables policymakers to identify underserved communities and direct targeted infrastructure investments to ensure widespread EV and hydrogen vehicle adoption. By incorporating socioeconomic parameters, such as income levels, population density, and major road connectivity, the study ensures that infrastructure planning aligns with the needs of lower-middle-income populations, improving accessibility and equity over time. In future study, we aim to extend these findings by integrating ground truth data from existing EVCS and HRS to refine predictive modeling. AI-driven GIS models can generate predictive maps of EVCS and hydrogen infrastructure placements based on the identified environmental, socioeconomic and demographic factors. These predictions can be validated against real-world infrastructure data, ensuring accurate, data-driven decision-making. To conclude, this study created policy recom-

mentations that contribute to both environmentally sustainable and socially equitable mobility system.

Keywords:

spatial planning; energy transition; social inequalities

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SS_04 PLANNING FOR TWIN TRANSITION IN REGIONAL AND URBAN SYSTEMS / 1938

Twin Tools of the Global to Local to Global Geodesign for Climate Change Mitigation Project

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Climate change caused by increasing atmospheric greenhouse gas concentration poses a significant threat to life on Earth. Climate change mitigation, adaptation, and resilience are identified as narrowly connected concepts and actions needed to address this threat. However, the window for addressing climate change is shrinking as time is passing and needed action is lacking. If the global community fails to mitigate climate change in the next decades, climate adaptation and the resilience of local communities will become increasingly difficult.

In the past year, team of the International Geodesign Collaboration (IGC) Global to Local to Global (GLG) Climate Change Mitigation Project: Carl Steinitz, Harvard University and UCL, Pedro Arsenio, University of Lisbon, Michele Campagna, University of Cagliari and Tijana Dabovic, University of Belgrade developed an integrated geodesign framework for spatially and temporally designing and implementing climate projects. The GLG strategy explicitly focuses on creating a scalable workflow compatible across diverse jurisdictions, geographic scales, and time frames towards reducing atmospheric greenhouse gas concentration by 2050. It combines global perspectives and science with national, regional and local insights and feasibility, facilitated by digital technologies, primarily ArcGIS Online Organisation (IGC GLG portal through which users can create, manage, and share maps, apps, and data), ArcGIS Pro (software with innovative tools for managing spatial data and performing advanced mapping analytics), and Geodesignhub (geodesign digital collaboration and negotiation platform).

The GLG workflow is anchored in the GLG list of climate projects. Selected after a literature review, a total of 117 global climate projects contributing to sequestration/biodiversity and ecosystems enhancement and/or emissions reductions are organised in 8 systems/sectors –Oceans, Water, Forests and Grasslands, Agriculture, Settlements, Transport, Industry and Energy. All projects are globally assigned to expert maps and AI-assessed for their costs and benefits in reducing GHG emissions. Using the Steinitz's (2012) geodesign framework and digital tools and data, local teams can select and negotiate locally relevant climate projects considering the past carbon emissions and sinks, societal, economic, and political readiness for climate mitigation, as well as to 2050 projections of their climate regions, LULCs, and ecosystem changes. The local geodesign/plan for climate change mitigation is presented in the Gantt chart and a map. In turn, all collected local geodesigns of climate change mitigation are digitally processed and used for making the Global design and tested against global optimisation models. These serve to identify the gaps between capable, suitable, and feasible scenarios of the Global to Local to Global climate change mitigation by 2050. The IGC GLG team will make these resources freely accessible, enabling nations and communities to explore different spatio-temporal scenarios and geodesign and implement effective climate strategies globally and locally.

Keywords:

sequestration; emissions reduction; systems; climate projects; ArGIS Pro; AGOL; Geodesign-hub.

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SS_04 PLANNING FOR TWIN TRANSITION IN REGIONAL AND URBAN SYSTEMS / 2021

Teleworking in the EU Digital Transition Framework: Case-study of Portuguese Territories in Post-Covid Times

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The European Union's policy framework increasingly emphasizes the need for a Twin Transition, wherein the Green Transition converges with the Digital Transition to foster sustainable and inclusive development (EC, 2022). However, for the transition to happen, particular attention should be paid to territories where digital infrastructure gaps may impede the benefits of smart solutions (usually peripheral or urban ones) (EC, 2024) and thus hamper competitiveness and economic opportunities in underserved regions (Draghi, 2024; Morris, 2022). Although remote work has long existed, its surge during and after the pandemic has redefined consumption, mobility, and spatial organization, posing both opportunities and challenges for sustainable development and regional inequalities (Braesemann et al., 2021). After the COVID-19 pandemic, teleworking evolution altered, meaning that the factors behind teleworking adoption levels should be assessed, particularly at the local level, a scale often neglected, while also searching for territorial typologies inequalities. In this study we aim to analyze these factors within the Portuguese municipalities (local level), comprehending if adoption levels tend to be

caused by the economic activities/companies' endogenous factors (sector of activity, dimension, wages, etc.) or exogenous factors (namely the sociodemographic and territorial, like household composition, migration, digital infrastructure, etc.). However, scarce local-level data hinders the comprehensive understanding of this phenomenon, in the Portuguese case (a paramount example), national statistical systems do not allow monitoring of teleworking dynamics over a long period or on a local scale. To surpass this obstacle, we propose a novel methodological framework to quantify and spatially analyze teleworking dynamics: 1) to develop a methodological approach to understand how data relating to commuting movements collected at census or specific survey moments (municipal level), can quantify the phenomenon and evolution of teleworking; and 2) identify territorial patterns relating to the preponderance of teleworking at the municipal level, as well as its main influencing factors either endogenous (activities) or exogenous (sociodemographic and territorial). For this, an indicator based on the Portuguese Classification of Professions was constructed, which was then utilized as a dependent variable in spatial regression techniques that used the endogenous and exogenous factors as regressors, enabling the exploration of spatial variations on these. The findings reveal that there is a mixture of endogenous and exogenous factors contributing to higher/lower levels of teleworking, with these having different impacts in urban areas and more peripheral or rural areas (like the example of digital infrastructure – a key to teleworking adoption –, or certain economic activities characteristics such as the company dimension). While some factors exert consistent effects across broader regions, others vary significantly locally, proving to have a more localized effect (vs. regional or national), underscoring the differentiated territorial capacities and challenges or opportunities of peripheral territories. Framed within the Digital Transition narrative, this research provides empirical insights into the transformative potential of teleworking for enhancing spatial systems resilience and urban and regional planning adaptive planning strategies, proposing a replicable framework for future analyses that surpass data scarcity. Moreover, these findings are critical for policymakers and stakeholders seeking to leverage Twin Transition for transparent, inclusive, and sustainable urban and regional governance through teleworking, while mitigating territorial inequalities.

Keywords:

Digital Transition; Teleworking; Peripheral territories; Local level; Territorial inequalities

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Special Session 5 | SOCIAL ENTREPRENEURS: KEY AGENTS FOR SUSTAINABLE COMMUNITY-LED URBAN REGENERATION AND TERRITORIAL INNOVATION

SS_05 SOCIAL ENTREPRENEURS: KEY AGENTS FOR SUSTAINABLE COMMUNITY-LED URBAN REGENERATION AND TERRITORIAL INNOVATION / 2064

Leveraging Social Entrepreneurship for Sustainable Urban Futures: Transforming Governance Through Grassroots Innovation

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In urban contexts dominated by top-down governance, social entrepreneurship emerges as a key force in driving sustainable urban regeneration. It fosters grassroots agency and adaptive governance mechanisms. While state-led, redevelopment prioritizes economic

imperatives, local actors creatively navigate institutional constraints to make spaces for participation. The case of Sarıyer Derbent urban transformation project, Istanbul, illustrates how community-driven self-organization can transform urban governance through entrepreneurial strategies that challenge exclusionary policies.

One major outcome is the institutionalization of self-organization, where informal grassroots mobilization evolves into structured advocacy networks. In Derbent, neighbourhood cooperatives and associations have navigated legal frameworks, engaged in policy negotiations, and negotiated through entrepreneurial tactics to influence regeneration processes. These initiatives have disrupted state-driven urban renewal by re-politicizing governance structures. It demonstrates that local voices play an active role in decision-making.

Another key outcome is the emergence of adaptive governance mechanisms, where social entrepreneurs mimic the strategies of policymakers-in particular the state- and developers in some cases as in Fikirtepe to secure their rights. By utilizing digital platforms, legal tools, and strategic partnerships, Derbent residents transforms governance from an exclusionary model into a more responsive system. Their success demonstrates that social entrepreneurship is not just about economic innovation but also about reclaiming agency, reshaping governance, and ensuring urban regeneration serves broader social and environmental goals.

SS_05 SOCIAL ENTREPRENEURS: KEY AGENTS FOR SUSTAINABLE COMMUNITY-LED URBAN REGENERATION AND TERRITORIAL INNOVATION / 2062

Community-driven processes, public funding, and social entrepreneurs in Italy's PNRR urban regeneration projects, a balancing act.

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Community-driven urban regeneration has long been a significant topic in urban policies and planning, sparking debates on the potential of bottom-up approaches, the risks of top-down interventions, and the role of spaces and funding. Scholars agree that this phenomenon lacks a unified theory and requires empirical observation to understand its dynamics, rooted in trial-and-error practices and tailored techniques within the broader urban regeneration discourse.

A consensus among European scholars is that public actors must guide and ensure collective ownership of outcomes in community-driven urban regeneration. This approach guarantees that the benefits reach all citizens, including those unable—or excluded from—participating, but still affected by the results. This need for public leadership gains new relevance with the availability of unprecedented funding through programs like Next Generation EU and its National Recovery and Resilience Plans (NRRPs). These resources present a unique opportunity to implement ideas long discussed by scholars.

In Italy, the PNRR (Piano Nazionale di Ripresa e Resilienza) operates with the largest funding allocation in Europe, enabling cities—both municipalities and metropolitan cities—to orchestrate and directly implement urban regeneration projects. Under time constraints and the perception of a once-in-a-lifetime opportunity, many PNRR projects are targeting areas where slow, community-driven regeneration processes have long been underway. The injection of significant financial resources is, in many cases, addressing the challenges and limitations that community-led initiatives have faced in past decades. For instance, the Metropolitan Cities of Bologna and Florence are leveraging PUI (Programmi Urbani Integrati) funding to support regeneration projects in areas with established histories of community-driven actions, though each case presents unique characteristics.

The Former Cartiera Burgo in Bologna exemplifies an intervention centered on the large-scale requalification of a former industrial building. Here, the project designers opted to “inhabit” the construction site gradually, integrating local social entrepreneurs to properly territorialize the influx of financial resources. This approach is particularly significant for a small village that had never experienced such substantial investments.

Tenuta Mondeggi in Florence is another funded initiative where urban regeneration intersects with a longstanding community appropriation process of a former agricultural estate. This overlap highlights the potential for tensions and conflicts when large-scale public investments converge with grassroots initiatives.

Exploring the two cases of Bologna and Florence the contribution will critically illustrate if and how public funding under the PNRR has the potential to act as a catalyst for sustainable urban regeneration, particularly when it intersects with pre-existing community-driven processes. A critical element in this dynamic is the role of social entrepreneurs, who act as mediators and drivers of innovation in urban regeneration, their potential in mobilize local knowledge, resources, and networks, social entrepreneurs ensure that investments are not only efficiently utilized but also deeply rooted in the social and cultural fabric of the area.

Finally, the study highlights the evolving role of metropolitan cities as strategic actors, no longer merely coordinators but designers of interventions. It concludes with recommendations for optimizing community-led processes during periods of significant but temporary resource availability and reflects on how these lessons can inform sustainable development practices.

SS_05 SOCIAL ENTREPRENEURS: KEY AGENTS FOR SUSTAINABLE COMMUNITY-LED URBAN REGENERATION AND TERRITORIAL INNOVATION / 2063

Socio-Spatial Innovation in Central and Eastern Europe: Insights from Regional Innovation Capacity Research (REGINNO)

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The interaction of knowledge production, concentration and transformation into innovation shapes the regional economic capacity in Central and Eastern Europe (CEE). Socio-spatial innovation, a critical component of sustainable urban regeneration, provides a valuable framework for examining these dynamics. This contribution highlights insights from the Regional Innovation Capacity Research (REGINNO) project, which investigates regional innovation capacity at the NUTS 3 level in Slovakia and neighbouring CEE countries, exploring sectors, spaces, and human capital.

REGINNO adopts a spatial approach to innovation, applying local and global statistical models to analyse regional disparities and determinants of innovation. The findings reveal that geographical location and socio-spatial factors significantly impact innovative outputs, with unique patterns across different regional contexts. Furthermore, the research discusses the role of industrial cluster organizations and their intermediary functions in fostering regional knowledge networks, highlighting the need to rethink existing capacities for innovation-driven development.

Beyond identifying innovation disparities, REGINNO provides a research design for regional-scale innovation through spatial planning. The approach integrates knowledge production ecosystems, institutional frameworks and place-based governance to develop targeted innovation policies. The results indicate that while public research institutions play a vital role in regional knowledge creation, their cooperation with industry remains limited due to bureaucratic constraints and institutional inertia.

This special session emphasizes the importance of integrating socio-spatial innovation into planning and policy frameworks to enhance urban regeneration efforts. By addressing these regional dynamics, REGINNO contributes to a deeper understanding of regeneration of industrial spaces, innovation processes and pathways toward more resilient and competitive CEE regions.

Special Session 6 | METROPOLITAN RESILIENCE: CHALLENGES, FIELDS OF ACTION AND ANSWERS

SS_06 METROPOLITAN RESILIENCE: CHALLENGES, FIELDS OF ACTION AND ANSWERS / 1965

From complex adaptive systems to anti-fragility and social innovation: The notion of resilience in metropolitan spatial planning

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In the current polycrisis context, resilience has taken a prominent spot as a prime objective on the political agenda. In spatial planning, the concept has also received increased attention in the past two decades as a planning rationale for designing “future-fit” spatial structures and planning procedures. In that regard, the metropolitan region is particularly cited as a promising scale for ensuring resilient spatial development and dealing with the challenges of social-ecological transformation.

This paper presents the conceptual understanding of resilience in the context of metropolitan regions as currently debated in the ARL International Working Group “Resilient Metropolitan Regions”. We shortly introduce the concept’s social-ecological origins and recent differentiations in planning discourse to distill the five resilience principles of robustness, adaptability, learning, innovation, and governability as a general rationale for addressing and assessing substantial and procedural aspects of metropolitan resilience.

We then explore the concept’s evolution towards anti-fragility, that is, the ability to take advantage of uncertainties and disruptions, turning vulnerability into opportunity. In particular, we illustrate (i) how modern crises can be interpreted as opportunities to reorganize and improve existing structures, (ii) why a territorial perspective is necessary to assess resilience and how it can foster anti-fragility, and (iii) why a perspective on (planning) institutions matters particularly to ensure resilience.

To conclude, we discuss some key ambivalences that these rationales imply on the substantial and procedural level of metropolitan planning: On the substantial level, we emphasize the ambivalence between redundant and sustainable infrastructure systems, decentralization and polycentricity. On the procedural level, we discuss the ambivalence of legitimacy vs. agility/flexibility of (planning) institutions and what this implies for often-heralded social and governance innovations in planning.

Keywords:

resilience; transformation; metropolitan governance; metropolitan planning

SS_06 METROPOLITAN RESILIENCE: CHALLENGES, FIELDS OF ACTION AND ANSWERS / 1949

Spatial Planning at a time of climate change: Dutch metropolis to Eurodelta Megaregion

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The shifting focus from the development of Dutch metropolis to the Eurodelta megaregion represents a paradigm shift in spatial planning, emphasizing the need for collaborative, interscalar approaches to address complex challenges. The Eurodelta, a non-formalized metropolitan scale, offers unique opportunities for redefining governance and planning practices beyond traditional administrative boundaries. This presentation explores why the Eurodelta scale is crucial in fostering climate transitions and enhancing resilience, while crossing several borders of sectors, administration, values, planning systems and governance. This presentation calls for a critical discussion on how interscalar and collaborative approaches can drive transformative resilience strategies, offering a new exploration of the evolving roles of planners and designers.

Drawing on lessons from Dutch spatial planning, the presentation highlights scenario-based methodologies, interscalar and integrative design and planning practices that address climate challenges and socioeconomic transitions. This presentation will emphasize on informal planning procedures research by design approaches, frameworks for shared knowledge and exchange, fostering an interplay across scales and sectors. By shifting the focus toward the changing roles of designers and planners, the presentation aims to spark a dialogue on innovative approaches to resilience. How can planning evolve to navigate the complexities of climate transitions and ensure equitable outcomes? What new methods and collaborations are needed to create adaptable, future-proof megaregions? This dialogue seeks to exchange knowledge and ideas across disciplines and regions, advancing the global conversation on crossing borders for resilience and sustainable spatial development.

Keywords:

Spatial Planning; Eurodelta; governance; informal planning procedures

SS_06 METROPOLITAN RESILIENCE: CHALLENGES, FIELDS OF ACTION AND ANSWERS / 2002

It Takes a Metropolis and Even a Megalopolis to Become Resilient: Lessons from Bologna and Marmara

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This presentation will explore two distinct yet complementary case studies that exemplify unique and synergistic approaches to urban resilience: the Metropolitan City of Bologna in Italy and the Marmara Region in Türkiye, a megalopolis comprising six metropolitan areas. It will deal with complex problems like including rapid urbanization, climate change, widening social and economic disparities that require innovative approaches (for ex. new finance tools) and utilise the strengths of urban planning and cooperative administration.

In 2021, the Metropolitan City of Bologna established the Metropolitan Equalization Fund, aligned with the strategies outlined in the Metropolitan Area Development Plan ("PTM - Piano Territoriale Metropolitano"). Funded by urbanization charges collected

from significant developments near metropolitan hubs, primarily in central municipalities, this fund distributes resources with an emphasis on territorial equity. These programs not only support urban regeneration in socially, demographically, and economically fragile areas but also promote a more cohesive development across the metropolitan territory.

On the other side of the world, the Marmara Region, home to over 26 million people—one-third of Türkiye's population—displays a dynamic mix of urban complexity and interconnectivity. This region's response to climate crises and natural disasters is managed by the Marmara Municipalities Union (MMU), which includes over 190 member municipalities from 11 cities. The MMU employs a multifaceted approach to enhance urban resilience, incorporating the Local Government Academy, five specialized Centers, the Mentor Program, and initiatives like the Marmara Urban Forum (MARUF). Using these tools, MMU addresses the critical need for inter-city collaboration across the region to effectively confront and adapt to shared challenges.

Together, these case studies from Bologna and Marmara demonstrate proactive steps towards fostering urban resilience. They emphasize how strategic financial mechanisms and robust inter-municipal cooperation can create more sustainable and resilient urban environments. Drawing inspiration from the proverb, 'It takes a village to raise a child,' this presentation adapts it to urban dynamics, proposing that 'It takes a metropolis, and sometimes even a megalopolis, to become resilient.' This underscores the collaborative efforts needed to address the complexities of urban development in an era of growing planetary challenges.

Keywords:

resilience, spatial planning, metropolitan governance

SS.06 METROPOLITAN RESILIENCE: CHALLENGES, FIELDS OF ACTION AND ANSWERS / 1973

Spatial Planning and Metropolitan Governance to face flood risk in the new Climate Change context: A comparison between Eurodelta Megaregion and Valencia metropolitan area

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Spatial planning at metropolitan level is an important basis in order to make steps forward to an appropriate metropolitan governance as soft spaces, despite non-formalized metropolitan governments. That is asking for collaborative, interscalar approaches to address complex challenges, redefining governance and planning practices beyond traditional administrative boundaries. This presentation, based in a comparative approach between two case studies (Eurodelta metropolis and euroregion, and Valencian metropolitan area) will emphasise on innovative planning procedures research by design approaches, frameworks for shared knowledge and exchange, fostering an interplay across scales and sectors. Both The Netherlands (in past 2010 decade) and Valencia region (more recently in past october 2024) has heavily suffered effects of floods due extraordinary rainfalls intensified by the Climate Change, causing very important damages at personal, economic, facilities and infrastructural levels. If climate adaptation measures as well as the issue of resilience in decision-making

are not included in the planning of area developments, sooner or later these projects will be unviable; more particularly in low-lying areas with geomorphological risk. The compliance with planning, the knowledge of protocols and the coordination between actors will be some of the factors that will be evaluated.

The objective is to highlight the need to strength a territorial culture and to develop institutional capacity to respond in a coordinated manner to these phenomena at metropolitan scale. By shifting the focus toward the changing roles of designers and planners, the presentation aims to spark a dialogue on innovative approaches to resilience. How can planning evolve to navigate the complexities of climate transitions and ensure equitable outcomes? What new methods and collaborations are needed to create adaptable, future-proof megaregions? This dialogue seeks to exchange knowledge and ideas across disciplines and regions, advancing the global conversation on crossing borders for resilience and sustainable spatial development.

Keywords:

Metropolitan resilience; Floods; Planning, Governance

SS_06 METROPOLITAN RESILIENCE: CHALLENGES, FIELDS OF ACTION AND ANSWERS / 1987

Planning and Housing Policy: in defence of resilient metropolitan regions

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Over the last decade the affordability of housing has become a major policy issue and increasingly a concern for governments as house prices have risen dramatically with respect to wages. Whilst land is limited in supply and fixed in space, the quantity of credit and investment has expanded over time. The high liquidity has driven property prices at a much faster rate than rises in incomes, making housing increasingly unaffordable for a large proportion of the population. In various metropolitan contexts, the growing awareness of housing's multifaceted impact on social, economic and environmental systems has led to its recognition as a key governance issue to foster resilience. Based on evidence from case studies and fed from the activities of ARL working group, this contribution is based upon a dialogue between the authors that aims at contributing to the debate of:

- whether there is effective metropolitan-scale governance on this policy issue
- how legal and financial instruments can help to foster effective planning policies and practices for affordable housing.
- How solutions and tools adopted are inspired by a proactive conceptualisation of resilience and how the metropolitan dimension is key to this approach

Keywords:

affordable housing; planning policies; metropolitan resilience

Special Session 7 | TURNING NATURE-BASED SOLUTIONS INTO INCLUSIVE CLIMATE ACTIONS

SS_07 TURNING NATURE-BASED SOLUTIONS INTO INCLUSIVE CLIMATE ACTIONS / 2003

Lisbon's Urban Nature Imaginaries: rethinking values and meanings for a more inclusive urban transformation

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Urban areas are emerging as central arenas for strategies to tackle global challenges in the context of interconnected climatic, ecological and social crises. One of the responses to these multiple challenges has been the integration of nature into cities, increasingly promoted in urban planning based on concepts such as Nature-based Solutions (NbS). However, despite the growing endorsement of so-called green agendas within urban policies, there is a gap in understanding which and whose values and meanings of nature are being mobilized or excluded in imaginaries related to urban nature, raising questions about the imaginaries that underpin such concepts and their implications for urban transformations. This presentation, part of the “Naturescapes” project, investigates the official imaginaries - visions and narratives about desirable futures evoked in urban policy documents such as strategic plans, master plans, foresight studies and sustainability strategies - that shape institutional perspectives on nature and human-environment relations. We argue that these imaginaries, in addition to reflecting epistemic and power dynamics, have the potential to catalyze innovations in urban planning by allowing policymakers to imagine future possibilities and respond to evolving values, including nature's cultural and intrinsic services. The study examines the evolution of these imaginaries at different planning scales over the last two decades in Lisbon's Functional Urban Areas (FUA). Through semi-structured interviews, field visits, and documentary analysis, we explore which values of nature are being included or excluded, how these imaginaries have evolved over time, and how they can promote transformative changes in human-nature relations, pointing to pathways for more inclusive urban planning.

SS_07 TURNING NATURE-BASED SOLUTIONS INTO INCLUSIVE CLIMATE ACTIONS / 2066

An intersectional urban care framework for evaluating Nature-based Solutions

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NbS are hailed for their multiple benefits and their effectiveness to alleviate and respond to the risks presented by climate change. Yet, scholarship increasingly challenges NBSs underlying principles and values, highlighting that those who most need the benefits of NbS, often are not in receipt of them. Consequently, NBS practice has been critiqued for failing to engage with existing inequities and in some cases, reproduces inequalities through NbS practice. In this presentation, I outline a novel intersectional framework

which builds on climate justice and urban care frameworks to empirically examine four key dimensions; spatial and material factors, social and network relationships, place based climate adaptation and cross identity climate action with cross cutting themes of intersectionality and more-than-human in Amsterdam, Brussels and Bucharest. We employ abductive methods to enable person derived variables of vulnerability, that are then ranked using Q-sort methodology and lastly, we carry out a weighted GIS-based socio-spatial hotspot index at a city scale. Through this approach we intend to derive new co-created assemblages of data that recharacterize the impacts of NbS on multiply marginalized people and more-than humans and reflect their lived experiences of vulnerabilities in relation to NbS and climate adaption. Moreover, we intentionally engage with the theoretical paradoxes of intersectionality that seek to avoid reinforcement of inequalities through homogenized conceptions of vulnerability, but instead point to the relational power structures and lack of urban care regimes that create uneven impacts to communities and multispecies environments that are subjected to increased vulnerabilities.

Keywords:

Nature-based solutions; Intersectionality; Justice

SS_07 TURNING NATURE-BASED SOLUTIONS INTO INCLUSIVE CLIMATE ACTIONS / 2067

Literature review on inclusive Nature-based Solutions in Europe

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Nature-based Solutions (NbS) provide ecological, socio-cultural and economic benefits. However, in several cases they are less effective at performing such benefits, bringing inequalities and injustices in cities, such as access to NbS services, displacement through green gentrification, or lack of community participation. To deepen the concept of inclusive NbS we conducted a systematic review of 280 academic publications, centred on European urban regions. We explored the definition and criteria for inclusive NbS and used network analysis to group their associated barriers and enablers. Our findings reveal that in order to design inclusive NbS, it is essential to engage and properly address the urban residents'needs, requirements, and values. This could further minimise green gentrification and unequal distribution of NbS benefits (among the most important barriers) and enhance co-creation and accessibility to NbS for all, including vulnerable groups (among most important enablers). We further discuss lessons that can be learned from case studies where NbS inclusivity is at risk as well as where it is practiced at higher levels.

Keywords:

inclusive; nature-based solutions; justice; review; Europe

SS_07 TURNING NATURE-BASED SOLUTIONS INTO INCLUSIVE CLIMATE ACTIONS / 1954

Assessing the effectiveness of Nature-based Solutions as Inclusive Climate Actions: a case study from Torino, Italy

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Nature-based Solutions (NBS) are recognized as strategies for climate change mitigation and adaptation. However, while existing assessment frameworks focus on the environmental impacts of NBS, they usually neglect their relevant implications on social and economic issues. Instead, a more comprehensive approach might also reveal the vital role of NBS as Inclusive Climate Actions (ICAs): strategies that promote participation, inclusivity and justice along with the achievement of climate adaptation and climate resilience. This study details the empirical implementation of a Monitoring and Evaluation (M&E) framework designed to assess environmental, social, and economic impacts of NBS as ICAs. The framework is composed of 12 Key Performance Indicators (KPIs) and 8 supporting place-based indicators. The M&E framework is implemented in four different NBS projects in the city of Torino (Italy). For each indicator, a specific methodology is defined from and analysis of existing and peer-reviewed literature. Methodologies for the 20 indicators include interviews, questionnaires, spatial analysis, and economic modelling. Results of each indicator are then normalized for comparison between different projects within the city of Torino. Finally, results are discussed with the intent of highlighting synergies and trade-offs between the observed impacts. The findings highlight the relevance of NBS as ICAs. While the detected economic and environmental impacts are minimal due to the small dimensions of the projects, results place specific emphasis on the effectiveness of NBS in improving perceived well-being, participation, community engagement, and environmental education. Moreover, this work underscores the importance and possibilities of replication of the comprehensive M&E framework employed, and validates the methodologies proposed for the assessment of each indicator. By centering people at the hearth of the analysis of NBS, results of this research mark a starting point in making NBS inclusive strategies for fostering sustainable and just cities. Moreover, results contribute with actionable insights for policymakers and practitioners who aim to design and implement ICAs. This work is part of the European project GREEN-INC: growing effective and equitable nature-based solutions through inclusive climate actions.

Keywords:

Inclusive Climate Actions; Monitoring and Evaluation; Nature-based Solutions

SS_07 TURNING NATURE-BASED SOLUTIONS INTO INCLUSIVE CLIMATE ACTIONS / 2016

How equitable and inclusive is the green space strategic planning in Romania?

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Equity and inclusiveness are two of the main goals of sustainable urban development, which help achieving resilient cities. The elements of urban green infrastructure, comprising green spaces and nature-based solutions, represent an important tool for creating sustainable and resilient cities. The inclusion of equity aspects related to urban green infrastructure in strategic urban planning documents should increase the pace of

their implementation.

The analysis explores if and how equity is discussed by strategic planning documents in Romania in relation to urban green infrastructure planning. The analysis is comprised by 2 steps: (1) we used around 240 urban strategic plans to investigate which aspects of environmental justice (availability, accessibility, attractiveness, safety, walkability, and affordability) are discussed in relation to urban green spaces and which vulnerable groups (e.g. children, elderly, youth, sick people) represent a priority in planning and (2) we focused on a sample of 18 cities for which 3 generations of strategic plans were available and analyzed the potential changes in urban green space management using a framework centered on five dimensions related to the quality of the plans - communication-oriented, evidence-based, collaborative, adaptive and action-oriented aspects.

The results highlights that the most discussed aspects in strategic urban planning documents in Romania in relation to urban green spaces are those related to availability and attractiveness and the most targeted vulnerable group is represented by children. There is a small increase of the documents quality over time in relation to the way in which green spaces are planned and equity and inclusiveness aspects addressed.

Keywords:

equity; urban green spaces; strategic planning; vulnerable groups

Special Session 8 | TRANSFORMATIVE PLANNING ACTIONS FROM THE SOUTH: NEGOTIATING THE PAST FOR ALTERNATIVE FUTURES

SS_08 TRANSFORMATIVE PLANNING ACTIONS FROM THE SOUTH: NEGOTIATING THE PAST FOR ALTERNATIVE FUTURES / 1985

Modern, Restorative, Sustainable? Examining Neo-colonial Urbanism and Commons in the Global South

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Cities in the Global South are experiencing profound processes of urban renewal that, like to capitalism, need to be understood in their inherent dualities and tensions. These processes involve transformations that simultaneously produce and destroy, accumulate and dispossess, and oscillate between dominant narratives and dissident practices. This paper examines three neighbourhoods in the Argentinean cities of Córdoba, Resistencia, and Villa María, where urban development prioritises the production of capitalist value at the expense of diverse ways of life and the conflicts inherent in urban spaces. From a critical perspective, we explore modernisation in the Güemes neighbourhood, historical reparation in the Toba neighbourhood, and sustainability in the Ecobarrio, Villa María. Using a qualitative approach, we analyse the different characteristics of the urban transformations in each case through three dimensions: (a) neo-colonial urbanism as a manifestation of capital's influence under varying socio-historical conditions; (b) political discourses where the state assumes diverse hegemonic roles to legitimise neighbourhood interventions; and (c) the production of urban commons as an everyday resistance tactic used by the inhabitants of the Global South. By critically engaging with these dimensions, we aim to deepen understanding of how urban renewal unfolds and is challenged in intermediate cities.

Keywords:

Intermediate cities, neo-coloniality, critique of value, urban commons, Global South

SS_08 TRANSFORMATIVE PLANNING ACTIONS FROM THE SOUTH: NEGOTIATING THE PAST FOR ALTERNATIVE FUTURES / 2032

Decolonial Strategies for Urban Greenery –Initiating Change in Urban Landscapes

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Environmental degradation is a severe challenge in the rapidly expanding cities in the Global South. Amidst the uncontrolled urban growth in low- and middle-income countries, a tendency prevails to follow the same environmentally destructive pathways and mindsets that the wealthier colonial powers have laid out in the past. The greatest obstacle is the mindset of contemporary societies: lack of environmental awareness, and the continuous exploitation of both natural and human resources. For sustainable urban planning, avoiding colonial practices requires new approaches that raise awareness and local appreciation of the environment as an intrinsic cultural value, and support cultural resilience against external abuse.

This paper debates decolonial approaches for landscape architecture and urban planning to promote a balanced human-nature relationship and create new tools for Sustainability Transition in Sub-Saharan Africa. It investigates a case study named Kumasi Trees -Project of the Hearts, which aims at re-greening the Ashanti capital of Kumasi in Ghana, by evoking local engagement and ownership and exploring local knowledge as a means for decolonisation to rediscover environmental values and cultural identities.

The study draws upon cultural ecology as its theoretical framework to examine the impact of rapid urban expansion on urban green spaces, local resilience, and cultural identity. Adopting a decolonial approach, the research employs indigenous local knowledge (ILK) and cultural narratives to facilitate community-based ecological restoration and enhance environmental awareness. To gain a comprehensive understanding of the cultural context of the urban landscape in Kumasi, the study employs an archival study and ethnographic fieldwork. Subsequently, action research and participatory methods are employed to facilitate community engagement, with the objective of linking climate adaptation initiatives with the strengthening of cultural identity in the urban landscape.

The paper reflects practices of engagement in the framework of Decolonial Thought (DT), questioning the universality of Eurocentric thinking. It acknowledges multiple value systems and adopts alternative knowledge bases stemming from other cultures, particularly those in Sub-Saharan Africa. The research contributes to the discourse on landscape architecture, urban planning and ILK by advocating for place-based, culturally sensitive design solutions as a decolonial framework for sustainable urban development.

Keywords:

Landscape Architecture; Climate adaptation; Indigenous Knowledge; Participatory Action Research

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SS_08 TRANSFORMATIVE PLANNING ACTIONS FROM THE SOUTH: NEGOTIATING THE PAST FOR ALTERNATIVE FUTURES / 2013

Beyond Erasure: Alternative Understandings of Colonial Legacies in Urban and Rural Spaces

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Colonial histories persist in contemporary urban and rural landscapes through processes of erasure, resistance, and re-imagining. This presentation examines case studies from several countries in the Global South. Cases from Mumbai, Argentina, Ecuador, Malaysia, and South Africa, reveal how communities contest the ongoing entanglements between coloniality and contemporary spatial transformations. Through oral histories, ethnographic insights, and spatial analysis, these cases uncover how infrastructure projects in Mumbai displace fisherwomen, undermining their traditional livelihoods. In Ecuador, urban resignification emerges as a strategy to reclaim colonial spaces, where communities actively resist state-led homogenization. In Argentina, contested urban commons expose the friction between neoliberal real estate development and the persistence of colonial power structures. Meanwhile, Kuala Lumpur's urban governance in Malaysia still reflects British colonial logic, deepening contemporary spatial injustices. In South Africa, the concept of (s)place offers a transformative framework to heal cognitive injustices, reintegrating and revaluing indigenous knowledge into rural development. These insights contribute to the global decolonial movement by highlighting how spatial struggles reflect broader fights for epistemic justice and self-determination. By centring local agency and alternative narratives, this presentation advocates for a decolonial praxis that dismantles colonial hierarchies, fosters community-led planning, and reclaims spaces as sites of resistance, belonging, and cultural continuity.

Keywords:

Coloniality; Spatial Justice; Decolonial Praxis; Urban Transformation; Community Resistance

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Special Session 9 | GOVERNING THE “CARBON NEUTRAL CITY”: BARRIERS AND ENABLERS FOR AN INTEGRATED CLIMATE GOVERNANCE IN CITIES

SS_09 GOVERNING THE “CARBON NEUTRAL CITY”: BARRIERS AND ENABLERS FOR AN INTEGRATED CLIMATE GOVERNANCE IN CITIES / 2029

Digital tools for smart decision-making towards carbon neutrality

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This presentation focuses on how digital tools can support cities in achieving carbon neutrality by providing smarter decision-making frameworks. Using examples from the UP2030 project in Istanbul's Kadıköy district, it highlights tools like “Urban Building Energy Modeling (UBEM) and Urban Building Transport Energy Modeling (UBTEM): AI-based Digital Decisionmaking Tool for Decarbonization”. These tools use AI, GIS, and optimization techniques to make urban systems including buildings and transport more energy-efficient, reduce emissions, and improve overall comfort.

A critical aspect of achieving meaningful, sustainable strategies is the development of digital tools that can support urban decision-making processes by analyzing the impact of decarbonization strategies on cities. These tools should be designed to integrate climate change considerations into strategic planning and provide decision-makers with a means to evaluate the effects of different mitigation and adaptation measures considering different aspects, including energy consumption, related CO₂ emissions, and economic considerations. Moreover, the integration of digital tools with decision-making processes should be strengthened, ensuring that they are developed with interdisciplinary research findings that bring together expertise from various fields to support urban governance.

In addition to digital solutions, the implementation of tangible urban interventions—such as renewable-energy integrated urban furniture—can serve as a means to raise awareness and foster engagement with decarbonization strategies at the local level as a platform of digital tools. These integrated approaches not only enhance climate governance but also contribute to embedding climate action within the urban fabric in a way that is both visible and actionable.

We'll discuss all of these while also addressing social dimensions such as equity and governance. Insights from a recent workshop in Istanbul will highlight how community engagement, practical awareness campaigns, and policy incentives can empower local residents to adopt sustainable practices.

The aim is to demonstrate how cities can integrate technology with community-driven approaches, ensuring that decarbonization efforts are not only data-informed but also socially inclusive and contextually relevant. This work bridges technical innovation with local needs, offering a holistic perspective on urban decarbonization.

Keywords:

decarbonization; climate change mitigation and adaptation strategies; UBEM; AI; decision-making

SS_09 GOVERNING THE “CARBON NEUTRAL CITY”: BARRIERS AND ENABLERS FOR AN INTEGRATED CLIMATE GOVERNANCE IN CITIES / 1966

Accounting beyond boundaries: Exploring consumption-based carbon approaches in Paris and Gothenburg

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As cities increasingly commit to achieving carbon neutrality, they engage in greenhouse gas (GHG) inventories to measure their emissions. These inventories are guided by international frameworks, such as the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC) and primarily rely on production-based carbon accounting (PBCA).

However, growing claims, both from the literature and policy circles, highlight the limitations of PBCA, emphasizing that it captures only a partial view of urban emissions. Consumption-based carbon accounting (CBCA) addresses this gap by considering embedded emissions in goods and services consumed within cities. This is particularly important in European and Northern American cities, where production-based emissions are declining while consumption-based emissions are projected to increase. Overall, CBCA is considered to offer a more comprehensive and equitable framework for addressing urban GHG emissions, incentivizing the adoption of policies that promote less carbon-intensive consumption.

Despite its promise, CBCA presents challenges, particularly in governance and implementation. However, existing studies predominantly address methodological issues, such as data collection and calculation techniques, while the political and governance dimensions at the city level remain underexplored. This study bridges that gap by investigating the governance conditions necessary for CBCA implementation, using Paris and Gothenburg as case studies. Both cities are leaders in this area, having established ambitious targets for consumption-based emissions reduction. The research employs a mixed-method approach, analyzing city documents, conducting interviews with officials, and integrating desk research to uncover key drivers of CBCA adoption.

This presentation will expose the results of that research, highlighting the governance and political factors necessary for developing CBCA in cities. It will offer insights and best practices that can inform the development of CBCA approaches in cities and support global climate networks.

Keywords:

Consumption-based carbon accounting; Carbon neutrality; Climate governance; Production-based carbon accounting

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SS_09 GOVERNING THE “CARBON NEUTRAL CITY”: BARRIERS AND ENABLERS FOR AN INTEGRATED CLIMATE GOVERNANCE IN CITIES / 1988

Exploring the feasibility of climate actions: what guides adaptation implementation in Europe?

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European cities are reacting to the climate crisis. Climate planning has exponentially increased in recent years, but a gap remains between planning and implementing climate actions. While many cities and regions have outlined ambitious strategies, far fewer have turned these plans into tangible results. There is a need to act faster to keep global warming within 2°C, addressing mitigation and adaptation challenges. Thus, analysing the feasibility of climate actions (e.g., their potential to be implemented) becomes crucial.

However, some might argue that feasibility is no longer solely about implementation but should include the capability to reach climate goals in time and be implemented fairly. The feasibility of climate actions depends on a combination of factors. First, context is critical. Economic conditions, social dynamics, governance systems, and legislative frameworks all influence whether an action can succeed. For example, regions with stronger adaptation laws often make more progress in planning and implementing actions. However, even in these regions, changing conditions—such as shifts in political leadership or global crises—can alter what is feasible over time. Second, the role of stakeholders is essential. Feasibility depends on clear responsibilities, adequate resources, and meaningful engagement with all affected groups. A lack of clarity about who is responsible for implementation, funding, or monitoring can derail even the most promising projects. Furthermore, failing to involve vulnerable groups or address justice issues can lead to inequitable or counterproductive actions.

Time also plays a crucial role here. Actions need to be evaluated not only for their immediate feasibility but also for their long-term impact. Planning, implementation, and monitoring are interconnected, and decisions made at any stage can influence outcomes later. Solutions to close such gaps remain between empirical data. Exploring reported data from international initiatives such as the Covenant of Mayors without proper monitoring and contrasting it with detailed information about particular implementation processes reveals important information for the science community and practitioners, which can contribute to closing the gap between planning and implementation.

This session will explore the results obtained after analysing the European adaptation actions reported in the latest dataset released by the Global Covenant of Mayors. Spatial and inferential statistics have been used to identify potential socio-economic and agency-related factors that influence climate action implementation. The results are meant to clarify how such factors can increase the feasibility of actions and identify potential best practices and relevant patterns that can guide the decision-making process.

Keywords:

feasibility; implementation; adaptation; Europe

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SS_09 GOVERNING THE “CARBON NEUTRAL CITY”: BARRIERS AND ENABLERS FOR AN INTEGRATED CLIMATE GOVERNANCE IN CITIES / 1978

Urban Carbon Emission Data

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Cities across the globe are actively working to reduce their carbon footprint, with a common approach being the development of neighbourhood and district level pilots. However, whilst such interventions are well meaning and grounded in a will to reduce the city's carbon impact, the data to validate and inform such approaches is often lacking. To this end, many cities rely upon city-wide carbon emission datasets, downscaled from national emission inventories, which lack the granularity to support such pilots. Here a misalignment of data and context is present, resulting in the emission impacts of such neighbourhood level projects as being unquantifiable. This presentation serves to highlight approaches to closing this gap between carbon emission data and practices centred around reducing emissions within decarbonisation projects and the city as a whole. This is initially structured around outlining the current state of carbon accounting within European cities, and the data available to practitioners and decision makers, before expanding into the cutting edge of urban carbon accounting currently being conducted within academia. Here the concept of urban carbon emission data maturity is discussed, outlining the prerequisite resources, capacities and data availability required for city authorities to conduct more advanced carbon accounting.

Special Session 10 | SHAPING REGIONAL FUTURES TOWARD SUSTAINABLE TRANSITIONS: COMMUNITY INVOLVMENT IN VISIONING AND IMPLEMENTATION

SS_10 SHAPING REGIONAL FUTURES TOWARD SUSTAINABLE TRANSITIONS: COMMUNITY INVOLVMENT IN VISIONING AND IMPLEMENTATION / 2068

ASSETs for circular futures: boosting the transition to circular construction in the Eurodelta

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The ASSET project—A Spatial Strategy for Eurodelta, boosting the Transition to circular construction—is a transformative initiative to establish the Eurodelta as a blueprint for a circular built environment (CBE). ASSET is a collaborative project between the cities of Amsterdam, The Hague, Brussels, Krefeld, and Duisburg; RWTH Aachen and TU Delt universities; and the Deltametropolis Association and Metrex. The Eurodelta encompasses diverse urban regions such as the Randstad, Brussels, and Rhine-Ruhr, and it faces challenges of climate adaptation, biodiversity loss, and socio-economic inequalities, among others. ASSET uses shared infrastructure and economic networks to develop spatial strategies for a CBE. Early efforts, including material flow mapping and cross-regional collaboration, have identified circular construction hubs and reuse practices, and showcased scalable solutions that combine local innovation with regional coordination.

ASSET emphasises the importance of bridging visioning and implementation by integrating bottom-up innovation and top-down coordination. Through participatory practices, multi-stakeholder workshops engage municipalities, private companies, practitioners and communities in co-creating actionable design principles that reflect local needs and aspirations. These processes ensure alignment with long-term regional strategies, while maintaining a focus on place-based policy-making to address local specificities. Collaborative student-led design initiatives further enrich the process, combining grassroots creativity with structured governance to foster shared narratives that prioritise ecological balance and social equity.

By integrating local action with overarching coordination, ASSET illustrates a paradigm shift towards a place-based circular economy. It redefines land use, logistics, and governance to achieve regenerative material flows and adaptive urban systems. Thereby, positioning the Eurodelta as a global model for sustainable transformation, and demonstrating how collaboration at all levels can shape an equitable, resilient urban future.

Keywords:

Circular built environment; spatial strategies; Eurodelta; collaboration; ASSET

SS_10 SHAPING REGIONAL FUTURES TOWARD SUSTAINABLE TRANSITIONS: COMMUNITY INVOLVMENT IN VISIONING AND IMPLEMENTATION / 2069

GIVING OPERATIONALITY TO STRATEGIC PLANNING: FROM THE VISION 2030 TO THE TERRITORIAL PLAN OF THE METROPOLITAN CITY OF FLORENCE

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The contribution reflects on the way to give operability to strategic plan, by describing the path from the definition of the strategic metropolitan plan (SMP) and its implementation through operational projects that are the base of the territorial metropolitan plan (TMP) of the metropolitan City of Florence.

The SMP has provided to connect places with strategic development directions, providing with a visioning process able to define, select and make sense of the complex reality of the metropolitan city and its positioning into the global context. In such a complex framework, the making of the strategic metropolitan plan (PSM) has been conducted as a creative regional design practice for framing the urban region and envisioning its possible future development. By using spatial representations and shared visions, the debate has raised on physical changes, sharing responsibilities and resources. In the implementation phase, this process has conveyed to conceive a multi-level and trans-scalar approach to local projects, conceived as part of the integrated visions of the SMP. With the TMP, the Metropolitan City of Florence has embarked on an institutional experimentation aimed at simplifying the metropolitan planning, drawing up a Metropolitan Territorial Plan (PTM) With a form and nature that make it more in line with the social and economic conditions of our time.

The TMP of Florence is structured as an instrument for territorialization of the contents of the Metropolitan Strategic Plan, adopting at the same time a dialogic and cooperative approach, therefore not imposing on the municipalities, but rather governance made of soft power, multi sectoral and multi scalar instrument to guide the multiple directions of change. The PTM is divided into three main components: the Knowledge Framework, the Statute and the Proposals Framework which, organized in Strategies and Meta-projects, has the objective of serving as a grid to identify, first, and then define, some design solutions of “issues”subways.

Keywords:

strategic planning; territorial planning; operability; visioning

SS_10 SHAPING REGIONAL FUTURES TOWARD SUSTAINABLE TRANSITIONS: COMMUNITY INVOLVMENT IN VISIONING AND IMPLEMENTATION / 2004

UNDERSTANDING THE ROLE OF WATER DATA SPACE IMAGINARIES IN ACCELERATING TWIN (GREEN AND DIGITAL) TRANSITION PATHWAYS FOR THE WATER MULTIVERSE

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Europe is at the heart of a digital revolution affecting almost every domain of the economy, policies and citizens' lifestyles in general. The Covid-19 pandemic has accelerated the digital transformation unveiling at the same time important challenges characterizing this socio-technical transformation: 1) it has exposed society's vulnerability to new digital divides, 2) it demonstrated that there are wide variations in digital transformation advances between Member States, and 3) it highlighted the European Union's dependency on non-EU digital players and platforms (Negreiro 2022). On these premises, the European Parliament have launched the 2030 Policy Programme 'Path to the Digital Decade' to reinforce digital sovereignty and to ensure strategic autonomy, ensuring that the digital transformation will promote EU values and respect fundamental freedoms. The final goal is "to boost Europe's global competitiveness and further the digitalization of European industry, which still lags behind, particularly in [SMEs]" (Negreiro 2022). An important pillar of this policy programme is the intention to build a fair and sustainable data economy for Europe. One of the key conceptual foundations of this policy package is the creation of common European data spaces. This focus derived from the awareness that, despite the exponential growth of data produced and the value potential they bear for society and the economy, the use of this data is suboptimal and therefore its value is not fully exploited. There are multiple reasons for this but the most critical are: 1) lack of trust between data providers and data users; 2) data protection and regulatory aspects, 3) limited accessibility and availability of data (Otto, ten Hompel, and Wrobel 2022b).

This is the context in which the "Water Data Space" project was funded. The purpose of this project is for the water sector, in collaboration with universities and SMEs, to "establish an open data space that can systematically facilitate the complex task of collecting, organizing and displaying data from multiple data sources, so that it is possible for a large diversity of actors to develop new knowledge and business models for the innovation of the water sector". Our role within this project is to study how and if the emergence of sustainability transition pathways within the water sector can be facilitated and supported through the sharing of data, when this data sharing is made possible by means of innovative, open and accessible "water data spaces". An evidence-based approach seeks to document the knowledge co-production of emerging water data space imaginaries within this project to become a reference point for further initiatives nationally and internationally. The results from this study will provide the basis for a broader involvement of actors with the capacities needed to support the establishment of those transformational imaginaries bearing potentials for the acceleration of the twin (digital and green) transitions in Europe and beyond.

Keywords:

Knowledge co-production, socio-technical imaginaries, transformational capacities, institutions

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SS_10 SHAPING REGIONAL FUTURES TOWARD SUSTAINABLE TRANSITIONS: COMMUNITY INVOLVEMENT IN VISIONING AND IMPLEMENTATION / 2070

Enacting Istanbul Vision 2050: Addressing Key Urban Challenges Through Participatory and Multi-Scale Planning

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Climate change, biodiversity loss, and deepening socio-economic inequalities are global crises that increasingly compel urban governments to adopt transformative planning actions. Istanbul, significantly impacted by these challenges, also possesses unique potential for generating sustainable solutions. The city is distinguished by its rich historical context, multi-layered natural and cultural heritage, strategic economic role in Turkey, and dynamic metropolitan characteristics. However, the economic, ecological, and social costs associated with centralised decision-making, predominantly imposed by the central government, pose serious risks. Large-scale infrastructure projects and top-down spatial interventions not aligned with urban plans threaten Istanbul's urban landscape, presenting a significant challenge for local government and communities.

Istanbul is also the focus of demands for urban democracy and participation. The need for spatial decisions that are developed with participatory governance and provide equal opportunities to residents is directly related to the democratic functioning of the public sphere and the protection of freedom of expression (Istanbul Planning Agency - Vision 2050 Office, 2020).

Developing a shared urban vision between local municipalities and residents to establish a roadmap has become essential for urban governance. To steer Istanbul towards a resilient, inclusive, and sustainable future, the Istanbul Planning Agency (IPA) was established in 2020, resulting in the development of the Istanbul Vision 2050 Strategic Document (2022) and the Vision 2050 Action Plan (2024), which delineate the city's key strategic actions.

The Istanbul Vision 2050 Strategic Document and Vision 2050 Action Plan emphasise the need for a new planning paradigm in response to ongoing local and global transformations. Accordingly, rather than static policy documents or action plans, they are conceived as dynamic, continuously negotiated, and adaptable governance frameworks. The governance and democracy components shape the targets defined in the Vision, providing a foundation for decision-making processes. While the metropolitan municipality is responsible for steering Istanbul towards these objectives, implementing the proposed actions relies on collaboration with other public institutions, civil society organisations, and experts.

Civic engagement is central to developing and implementing these plans and to the broader future vision set by the Istanbul Vision 2050 Strategic Document and Action Plan. Accordingly, the Vision 2050 Action Plan defines numerous objectives and actions focused on participatory governance. Democratising urban life in Istanbul involves stimulating active citizenship and enabling residents to participate in urban policymaking. The plan proposes mechanisms and platforms for collaboration between civil society and local authorities in areas such as environmental sustainability, spatial planning, and cultural heritage. This approach prioritises decision-making processes that include residents, ensuring community involvement in shaping policies that directly affect urban life. Moreover, involving civil society and Istanbul residents in decision-making and implementation processes concerning urban services will contribute to making these services more inclusive, spatially just, and accessible, thereby reinforcing the city's resilience goals.

Improving the governance of urban commons based on the right to the city will strengthen solidarity among community networks and enhance residents' sense of belonging. This, in turn, will contribute to achieving the spatial objectives outlined in the Vision. Furthermore, civil society and individuals will actively engage in decision-making through participatory spatial planning and mechanisms defined within the Action Plan. Community participation will be strengthened through a resilience-focused governance model, starting at the neighbourhood level.

The established action areas, policies, and projects have emerged from a participatory approach, engaging pertinent institutions and societal stakeholders in the development process. Thus, the Action Plan is envisioned as a dynamic and continuously evolving roadmap. The next step involves creating a comprehensive spatial framework for Istanbul, aligning the new Istanbul Environmental Master Plan with key transformative projects outlined in the Vision 2050 Action Plan and their spatial implications.

Keywords:

strategic planning, participatory planning, urban democracy, vision

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SS_10 SHAPING REGIONAL FUTURES TOWARD SUSTAINABLE TRANSITIONS: COMMUNITY INVOLVEMENT IN VISIONING AND IMPLEMENTATION / 1969

Navigating Lusatia's Structural Transition Between Consensus and Dissensus

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The structural transition in Lusatia, Germany, prompted by the national coal phase-out, exemplifies the complex interplay between technocratic governance and divergent public narratives. Despite sustained economic stability, bolstered by job creation and infrastructure improvements, public sentiment often remains tied to the decline of the region's energy-intensive industries. Stories that make headlines tend to depict an unsettled, dissatisfied population and an urban environment resistant to change and wary of difference.

In view of the contingencies surrounding Lusatia's transition, the national Structural Strengthening Investment Program aims at establishing governance structures that bind various levels of decision making from national to local, which support projects aiming to stage a new aesthetics of transition through flagship structural projects and massive landscape restorations. This multilevel governance approach relies on consensus-driven, technocratic strategies that emphasize compromise and managerial coordination. Such depoliticization tends to be critiqued in social sciences for replacing adversarial politics and stifling radical new imaginaries. However, Lusatia's case reveals a different dynamic, in which dissent is driven by radical-right polarization, which capitalizes on narratives of exclusion, economic insecurity, and cultural fears, thus creating a complex ethical and political landscape that defies conventional categorizations of the post-political condition.

Drawing on qualitative data from document analysis, stakeholder interviews and focus groups, this study identifies three pathways regional governance structures use to address the challenges of aligning structural policy with regional aspirations. First, counteracting radicalization through accessibility focuses on demystifying the complex lexicon of sustainability transitions and emphasizing equitable outcomes. While the stakeholders underscore the importance of transparent, relatable policies, the emphasis on consensus can paradoxically fuel polarization as the voices that feel left on the other side of environmental justice are picked up and mobilized by populist movements. Second, depoliticizing transition through evidence-based governance prioritizes common interest for a coal phase-out aligning particular interests of mainstream political parties with interests of consensus-driven governance structures, which seek to address dissent by presenting decisions as apolitical and inevitable. Third, public participation is recognized as a mitigative tool for marginalizing radical-right narratives. Stakeholders advocate for an inclusive framework that foster consensus and actively engage publics across plural differences, yet at the operational level they agree there is still much room for enhancing active and direct public involvement.

This research reimagines technocratic governance as both a stabilizing force and a potential source of alienation, offering lessons for managing structural transitions in polarized contexts. By addressing the interplay between consensus-driven governance and dissensus rooted in radical-right polarization, this paper offers insights into balancing technocratic efficiency with inclusive participatory practices.

Keywords:

transition; technocratic governance; depoliticization; polarisation; participation

SS_10 SHAPING REGIONAL FUTURES TOWARD SUSTAINABLE TRANSITIONS: COMMUNITY INVOLVEMENT IN VISIONING AND IMPLEMENTATION / 1984

MAPPING COMMUNITY PERSPECTIVES FOR CO-DESIGNING REGIONAL SUSTAINABILITY TRANSITIONS

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For sustainability transition policies and plans to succeed, they must address territorial specificities and mobilize commitment from communities most vulnerable to transitional challenges. Otherwise, they risk being perceived as creating “winners” and “losers,” eroding trust in governance, increasing resistance to change, and exacerbating polarization and social unrest (COM, 2022). Active and direct involvement of communities is therefore an essential component of EU, national, regional, and local place-based policymaking for just sustainability transitions. However, involving communities in this policymaking is challenging because it is often a technocratic, top-down endeavor with little apparent relevance or meaning for communities.

Against this background, this paper discusses an instrumental approach to revealing the dreams and expectations of the least-engaged communities (LECs) in place-based policymaking in four European regions transitioning from coal and iron mining. The analysis was carried out as part of experimentation with design-led territorial and digital tools in the Horizon Europe project Democratising Just Sustainability Transitions (DUST) in Norrbotten (SE), Stara Zagora (BG), Katowice (PL), and Lusatia (DE). Experiments titled Regional Futures Literacy Labs (RFLs) engaged local communities in deliberations on transition policies during four co-design workshops.

The concept of Territorial Capital (TC) provided a framework to trace deliberations, identify regional social-spatial dynamics, inform regional design explorations, and compare community and policy perspectives. The communities’ dreams and expectations were captured through audio recordings, transcribed, and qualitatively analyzed using Atlas.ti software. The coding system was developed using a combined deductive and inductive approach, starting with broad predefined TC categories and gaining depth with specific TC aspects identified inductively in the qualitative data collected from LECs.

This paper presents key findings on the communities’ dreams and expectations vis-à-vis sustainability transition policymaking and explores how these narratives can inform regional designs and community-policy comparisons. The preliminary conclusions of the paper are twofold. First, we draw on the empirical results to discuss how the transition narratives of LECs evolved over the course of the labs and under the influence of various factors. Second, we propose how methods can be refined to enhance community future literacy and support community reflection on regional sustainability transitions. Final conclusions will draw on how the proposed design-led methodology can facilitate policy and community alignment, indicating their potential to better represent LECs’ voices in

shaping policies across diverse regional contexts, fostering inclusive decision-making processes.

Keywords:

Community perspectives; regional sustainability transitions; territorial capital; computer-aided qualitative analysis;

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SS_10 SHAPING REGIONAL FUTURES TOWARD SUSTAINABLE TRANSITIONS: COMMUNITY INVOLVMENT IN VISIONING AND IMPLEMENTATION / 2009

Navigating Regional Challenges: Food Systems as a Catalyst for Spatial Planning Innovation - The Food Transition Strategy and FoodLink Network in the Metropolitan Area of Lisbon

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In an anthropogenic era marked by recurring environmental and socioeconomic crises and heightened unpredictability, planning regional futures for a sustainable transition has become an increasingly pressing and complex challenge.

In Portugal, however, regional planning has historically been overlooked within the national spatial planning system and public policies. This is largely due to the fact that, while statutory planning within a traditional state framework rooted in nested territorial administrative units and formal tiers of government, regionalization has neither been pursued nor has a regional level of government been established. As a result, regional and supra-municipal policies depend either on central government decision-making or on the voluntary cooperation of local authorities in policymaking and decision. This highlights a significant gap between how power is territorially exercised and the pressing territorial challenges that are emerging, such as climate change adaptation, food production and supply, housing, and socio-territorial inequalities.

To address these challenges, the Metropolitan Area of Lisbon has, in recent years, become a key platform for developing several strategy-oriented soft planning initiatives grounded in multi-level governance arrangements, inter-municipal cooperation, and the active engagement of diverse territorial actors. Despite the difficulties of implementing territorial approaches at a regional scale, these strategies underscore the emergence of a new supra-municipal spatial reasoning aimed at fostering the metropolitan area as a transformative space for collaborative visioning and decision-making.

The Food Transition Strategy in the Lisbon Metropolitan Area (FTS-LMA) exemplifies such initiatives. Encompassing all 18 municipalities of the LMA, it seeks to integrate diverse policies to establish a sustainable and resilient food system at a metropolitan level. This strategy is developed and supported by FoodLink –the Network for Food Transition in the Lisbon Metropolitan Area –a bottom-up collaborative network that acts as an interface for identifying solutions to plan an integrated and intersectoral food system within the regional context of the LMA. Through its Action Plan, the FTS-LMA articulates a shared vision, guidelines, and objectives to be followed by the entities involved.

In this paper, we aim to examine how the transformative agenda of food systems can drive positive transitions in current spatial planning practices. As a voluntary policy instrument and an example of soft planning practice, the FTS-LMA offers an opportunity to foster the emergence of new planning spaces while advancing innovation in planning at the regional level. We seek to explore how this initiative, with its place-based,

territorially sensitive, and integrated approach, can lay the groundwork for supporting collaborative visioning and regional design approaches at the metropolitan scale, while also contributing to reinforcing traditional state-led planning frameworks.

Keywords:

Food Transition; Soft Planning; Regional planning; Lisbon Metropolitan Area

SS_10 SHAPING REGIONAL FUTURES TOWARD SUSTAINABLE TRANSITIONS: COMMUNITY INVOLVEMENT IN VISIONING AND IMPLEMENTATION / 2052

“Co-Visioning” Urban-Rural Futures: Testing a participative and integrated regional planning approach in Germany and China

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Integrating urban-rural linkages into local and regional planning processes can be a key factor in shaping sustainable social, economic and ecological transformation processes. In efforts to advance regenerative supplies of energy, food, or building materials while mitigating climate change and preserving biodiversity, the territories of extended urbanization are becoming a central arena for future innovation. Agile planning approaches, multi-stakeholder platforms and models of integrated regional governance are therefore needed to negotiate and envision urban-rural futures across administrative boundaries and sectoral silos.

The Sino-German Urban-Rural Assembly project (URA, 2019-2025) addressed this methodological gap by conducting transdisciplinary and transformative research in living labs in Germany and China. Based on multidisciplinary analyses of socio-spatial practices, material cycles, water landscapes, ecosystems, migration and inclusion, the project initiated “Urban-Rural Co-Visioning” processes in both regions. In a series of multi-actor workshops, researchers and local stakeholders entered into negotiations on regional futures and co-designed goals, future visions and transformation paths for strengthening sustainable urban-rural relations in the living labs. The aim was firstly to develop evidence-based and locally robust guiding principles for sustainable transformation in both regions, and secondly to derive a transferable methodology for “Co-Visioning” urban-rural regions. The paper will present the refined approach as published in a joint policy paper with UN-Habitat.

Keywords:

urban-rural linkages; regional design; transdisciplinary research; sustainability transition; participatory planning

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Hagemann, Anke, Ava Lynam, Gaoli Xiao, Wolfgang Wende, Li Fan, Sigrun Langner, Maria Frölich-Kulik, Laura Henneke, and Lukas Pappert. Urban-Rural Assembly: A Handbook for Co-Visioning Interconnected Regions. Berlin: JOVIS, 2024.

Special Session 11 | THE VALUE AND ROLE OF DESIGN IN PLANNING EDUCATION

SS_11 THE VALUE AND ROLE OF DESIGN IN PLANNING EDUCATION / 2008

Revisiting the art of town planning: what can archives teach us about the pedagogy of design?

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The historical archives of the Royal Town Planning Institute recently digitised by the Hathi Trust cover the period from establishing the Institute through to the 1990's, and offer a rich record of activities undertaken within planning practice from 1914-1993. In this paper I discuss my findings based on a purposive qualitative review of these archives relating to planning education, focusing on how design is treated as a discipline and the pedagogical approaches which drive this.

Throughout the archives there are fascinating opinion pieces, records of conference discussions and advertisements for courses and training. Design is seen as a key component of the "ethical principles governing our perception of the art and science of town planning" (Mawson, 1915, p. 83), and a storyline of the interaction of planning practice, planning education and the related professions against the backdrop of evolving legislation and public opinion is played out in these extensive volumes.

In the paper will also reflect on the problems and benefits in using institutional archives for pedagogical research, where a bit of serendipity and an archigraphic eye (Tamboukou, 2015; Stanley, 2016) definitely come in handy when casting a critical on archival "uncomfortable truths" (Royal Town Planning Institute, 2024).

Finally, I contextualise these insights by looking at how these are relevant in planning and design education today.

Keywords:

design; planning; pedagogy; archives; teaching;

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SS_11 THE VALUE AND ROLE OF DESIGN IN PLANNING EDUCATION / 2011**Teaching Planning Without Planning Schools: Challenges from Central America****Author:** Karla Barrantes-Chaves¹¹ *University of Costa Rica***Corresponding Author:** karla.barrantes@ucr.ac.cr

Planning education as a field characterised by epistemological diversity integrates disciplines such as social sciences, engineering, architecture and natural sciences. However, in regions without dedicated planning schools—such as universities in Central America—planning is often taught as a module within undergraduate or postgraduate programs in engineering or architecture. Consequently, planning departments in public institutions and local governments, such as those in Costa Rica, are often led by architects or engineers who lack formal training in planning; although urban design is a subject learned by architects, design-related skills are not necessarily the main focus of engineering programs. This situation raises two critical questions: How can planning be effectively taught without dedicated planning schools? Moreover, how can design concepts be tailored to students with diverse educational backgrounds?

This paper briefly overviews universities' programmes offering modules of planning and urban design in Central America. Using an example from the University of Costa Rica, it examines teaching techniques applied in a planning module offered to students from the Surveying Engineering School between July and December 2024; they aimed to introduce basic design concepts and planning principles. This work takes on the challenge of teaching basic design concepts so that, if these students oversee planning offices in the future, they can collaborate effectively with design professionals. The teaching strategies employed included a mix of digital and in-person gamification, field trips and role-playing exercises based on case studies. Classroom assessment techniques were used to evaluate the effectiveness of these methods in helping students achieve learning objectives. The findings suggest that students preferred field trips over other teaching methods to understand basic design concepts. Digital gamification was also highly successful, especially when students were involved in the game's design and shared it with their peers. Finally, the article reflects on the broader challenges of teaching planning when it is not the central focus of a degree program. It highlights the urgent need for deeper reflection and innovation in planning education to address the pressing urban challenges faced by Central American cities.

Keywords:

Central America; urban design; teaching strategies; planning programmes

SS_11 THE VALUE AND ROLE OF DESIGN IN PLANNING EDUCATION / 2014**Urban design content in planning curricula -an international comparison of the UK and Germany****Author:** Andreas Schulze Baing¹¹ *The University of Manchester***Corresponding Author:** andreas.schulze.baing@manchester.ac.uk

The extent to which urban design is part of planning education can vary between countries and even within a country between specific university programmes. The mode of teaching urban design (studio project versus lecture) can also vary (Faga, 2019). Being

educated as a planner in Germany where urban design is a key part of planning curricula, it always surprised me that this can be different in the UK. So I want to understand why that is and explore the scope for improving this.

As a first step I plan to analyse the extent of urban design content in planning curricula for RTPi accredited master programmes. Then I plan to compare this to German university planning curricula. I also plan to compare the accreditation requirements for planning programmes –so what is required to be a fully accredited planner.

One working hypothesis is that the discretionary planning system in England and other parts of the UK does not require planners to be urban designers, because in development management, planners respond to proposals including urban design concepts, hence would not need to know how to create urban design themselves. This is in contrast to regulatory systems, where publicly developed zoning plans often work as a rigid urban design regulation (Schulze Bäing and Webb, 2020). To explore this, I plan to compare the English planning practice to the practice in Germany, where a detailed zoning system requires local authority planners to have detailed urban design knowledge.

Keywords:

urban design; planning education; zoning

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SS_11 THE VALUE AND ROLE OF DESIGN IN PLANNING EDUCATION / 1964

Urban Development and Design Pedagogy at the University of New South Wales, Sydney –a critical reflection

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This paper focuses on the creation and implementation of a post-professional graduate program on urban development and design at UNSW, the Master of Urban Development and Design (MUDD).

The program was conceived with the conviction that urban design only has purchase on the reality of city making as an integral component of urban development. The complexity of this interrelationship demands years of study in a stand-alone, studio-based curriculum, grounded in experiential learning for graduate students from many disciplines.

The curriculum drew upon a synthesis of three bodies of knowledge about the city:

- spatial political economy, the manifestation in urban form of global patterns of capital formation, investment and disinvestment;
- urban design principles and paradigms, normative models of ‘good city form’ grounded in aesthetic, social and environmental concerns; and

- ‘urban design as public policy’, the intersection of public policy, design principles, the deal-making of the property sector and defence of the public realm.

Planning theory and practice as typically taught in the Anglophone world from a social science base is necessary but not sufficient for this educational endeavour. From the outset, the program was driven by two challenges of our time. First, urbanisation on an unprecedented scale in human history. Second, the emergence of the urban project as an instrument of late capitalism. Both entailed an international commitment in terms of the academic staff, student body, theoretical content and design studios overseas working with fellow universities, city agencies and eminent design firms. As a counterpoint to this strong international focus, urban development in Sydney was drawn upon as a continuing case study. The studio projects and associated research, which addressed critical urban issues across five continents, were documented in exhibitions and yearbooks as a cumulative teaching resource – a record of engagement with the complexities of physical city making for each new class of students and the design culture of Sydney.

Keywords:

Urban Development; Urban Design; Urban Development & Design Pedagogy

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SS_11 THE VALUE AND ROLE OF DESIGN IN PLANNING EDUCATION / 2006

Designing for Sustainability: Interdisciplinary Urban Planning Education Strategies in Norway

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Urban planning education faces challenges related to rapid global change, social and spatial transformations in cities, and climate change. It promotes sustainable practices, place-making, and participatory models while emphasising interdisciplinarity as essential for addressing contemporary urban issues. New educational approaches must incorporate emerging technologies and renew existing thinking, frameworks, methods, and long-standing technical, cultural, institutional, and social premises and perspectives to improve teaching and learning practices.

The role of design in planning education is emphasised as a way to engage with the complex processes of urban development and planning. Since urban planning draws from a variety of disciplines—including geography, economics, history, sociology, psychology, cultural studies, transport, and engineering—its interdisciplinary nature fosters a critical understanding of spatial forms and processes. This approach encourages moving beyond normative methods through design exploration, testing, and performance.

Students are encouraged to adopt a design mindset and develop flexible, interdisciplinary approaches. The student planner's work must be adaptable to the studied context and the actors involved, modifiable through practice, and aligned with the specific interests of individuals and society.

In addition to developing writing and speaking skills, students are encouraged to communicate complex urban processes using clear graphic representations that are easily understandable and transferable through digital technologies for the production, distribution, presentation, and exchange of knowledge.

The "Site Planning" course at Norwegian University of Science and Technology provides examples of how students address these tasks, working in interdisciplinary teams composed of future planners, engineers, facility developers and managers, and other professionals.

Keywords:

urban planning education, design, interdisciplinarity, site planning

SS_11 THE VALUE AND ROLE OF DESIGN IN PLANNING EDUCATION / 1934

Design in Urban Planning Education: An Interdisciplinary Studio Approach

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Recent scholarship challenges solely human-centric approaches to urban design (Yigitcanlar et al., 2019), suggesting a shift in perspective. Consequently, there is a growing recognition of more-than-human perspectives, asking for better integration of designers' views for urban cohabitation (Metzger 2023; Roudavski 2021), for example in the context of urban placemaking in public spaces (Sheikh et al., 2023). However, in planning education the exploration of non-anthropocentric design and futuring remains in its early stages, and the role of design has not yet been widely explored. In this article, we address this research need and focus in this illustrative case study on the questions of why design is important in the education of planners and what the relevance of design is in addressing current challenges such as climate change.

This research builds on a current studio course offered to students of urban studies and planning within an interdisciplinary graduate degree programme in Finland. The studio

is offered to students from several disciplines with the purpose of developing their urban planning skills while integrating methods from the involved disciplines, including design. The studio format has been recognized as a good setting for exploring future challenges as they engage students with real life cases and provide hands-on experiences (Balassiano 2011). The studio theme in autumn 2024 was on rethinking streets for life for humans and other species in light of climate change. The chosen area included both historical neighbourhoods and more recent urban development on reclaimed land. By integrating concepts from interspecies design, the course encouraged a reimagining of streetscapes as multispecies habitats. The agenda combines study area visits, guest speakers representing diverse stakeholders and disciplines. Together they inform experiential and project-based learning.

The studio spans over 13 weeks. In the first part, students explore the study area through site visits, interventions from guest speakers, and data collection using mixed methods. In the second part, students work in interdisciplinary teams to propose specific interventions to the identified urban challenges within the study area. Design thinking and design process were introduced, once the students had identified the challenges they would be addressing. This iterative, and participatory approach enabled students to appreciate the temporal implication of their proposals, and impact at various scales.

Experiences from the course show that design thinking with a more-than-human focus can transform planning education by fostering inclusivity, adaptability, and ecological and ethical awareness. Design thinking encourages iterative problem-solving and collaboration, integrating a variety of perspectives into the design of streetscapes, and redefining public spaces through design as co-inhabited rather than human-engineered. Some of the challenges faced during this learning process is establishing a common language among the members of the student teams as a basis for developing their project. Overcoming this challenge was addressed through the selected teaching and assessment methods. The teachers provide theoretical background by different experts, methodologies, and one-on-one tutoring with each team. The assessment methods include individual reflections on the learning process, peer-learning and peer-feedback, to enhance disciplinary exchange and develop teamworking and project management skills in diverse student teams.

Keywords:

more-than-human design; interdisciplinary; design thinking; Helsinki; common language

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SS_11 THE VALUE AND ROLE OF DESIGN IN PLANNING EDUCATION / 1953

Design thinking and designing as collaborative competencies in planning education

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The paper will present and discuss challenges in interdisciplinary student collaboration where the students have different skills and experiences in design and visualization. The paper is based on the reflections on ten years of teaching “Projects in urban development: Architecture, form and space” course. Approximately 60 students participate every year and belong to three different master’s study programs: landscape architecture, real estate development and urban and regional planning. The course focuses on urban development at project level and within the context of a specific Norwegian municipality. The students are organized into interdisciplinary groups, and their design skills vary. This exposes the students to practice-relevant situations where they can explore opportunities and test quality goals related to physical density, structural relationships and effects on the city’s form and content. The assignment is a feasibility study in the first stage of a planning task, where the visual material is used in analyses, idea development and presentation stages. The data employed in this study involves a combination of students’ work, course assessments, and teachers’ reflection on didactical challenges. The aim of the paper is to demonstrate the power of design as an instrument for interdisciplinarity and complex problem-solving. We argue that design is a powerful tool to prepare students for dealing with socio-spatial challenges and that visual literacy plays an important role in understanding the spatial dimension and foreseeing the future.

Keywords:

design; design thinking; visual literacy; collaborative learning; planning education

SS_11 THE VALUE AND ROLE OF DESIGN IN PLANNING EDUCATION / 1963

Who teaches urban design to planners in Poland? Challenges for planning curricula and implications for urban space

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Urban design education, unfortunately, holds a marginal position within spatial planning curricula in Poland (Belof & Kryczka, 2024). This situation stems from the absence of coherent program requirements and recent (2022) formal classification of spatial planning field of study to the discipline of human geography. As a result, there has been a radical weakening of the educational links between planners and architecture and landscape architecture. Consequently, this shift has led to a departure from creative, design-oriented methods in favour of analytical competencies, prioritizing subjects such as spatial and socio-economic analyses, particularly within GIS environments.

The diminished emphasis on urban design education within the curriculum can, to some extent, be mitigated through the quality of its delivery. However, this largely depends on the specialized expertise and practical design experience of lecturers, as well as their ability to employ innovative and unconventional pedagogical approaches to engage students effectively. Nonetheless, our preliminary observations reveal systemic issues in this domain, including the lack of standardized qualifications for academic staff. This absence of clear guidelines risks further marginalizing urban design as a subject and undermines students’ capacity to understand the principles governing urbanized spaces and to address associated challenges creatively.

In this study, we aim to assess the quality of urban design education by analyzing the academic profiles and professional competencies of lecturers responsible for teaching this subject within spatial planning programs at Polish universities. The study will examine trends and pedagogical methodologies employed by various institutions and address critical questions: Who is responsible for delivering urban design education? What is the extent of their expertise in this field? And what potential implications might this have for the academic rigor and practical relevance of urban design education in Poland?

The study will integrate quantitative data concerning academic programs and employment alongside qualitative insights obtained through direct interviews with management and teaching staff at various Polish universities. By employing this approach, it aims to stimulate a broader discussion regarding the value and role of urban design within spatial planning education in Poland. Furthermore, it seeks to verify whether current educational practices and trends align with global developments in urban design education for planners.

Keywords:

pedagogy; planning education; planning curricula; urban design; urban planner

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SS_11 THE VALUE AND ROLE OF DESIGN IN PLANNING EDUCATION / 1975

Teaching Design to Planners: pedagogical approaches from the UK

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Urban design is integral to planning education. Although its weight in planning programmes varies considerably (Frank, 2006), the knowledge and skills that planners acquire through an integrative design focus in their education are fundamental to addressing the complex challenges of cities. However, teaching design to planners poses a variety of challenges. Senbel (2012, p. 449) identifies two main issues: first, the lack of space in already packed planning programmes to “nurture a gradual development of spatial thinking with the requisite graphic presentation skills”; and second, the particular “pedagogical mission” of planning education, which, in contrast to architecture or

landscape architecture, assigns priority to the analysis of diverse socioeconomic contexts. Despite the long tradition of teaching design in planning schools, there is limited research about the design teaching available to planning students on different courses, and the pedagogical approaches that are employed and appropriate to teach design in this context.

In this presentation we examine pedagogical approaches to urban design teaching in two planning departments in the UK (at the University of Liverpool and University College London). We consider the value of teaching design to planners at undergraduate and postgraduate levels, the use of project based / studio modules, and how particular challenges encountered in the delivery of design content might be overcome. The findings show that design teaching is key to spatial literacy, with essential skills developed in short timeframes. But, the resource intensity of design teaching increases pressure for its removal, or reduction, in planning curricula. We argue that well-structured and supported teaching, group work strategies, interdisciplinary projects and community engagement provide the means to further enhance design teaching in planning education -and to ensure that design remains planning education's integrative focus.

Keywords:

urban design; planning education; pedagogy

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SS_11 THE VALUE AND ROLE OF DESIGN IN PLANNING EDUCATION / 2030

Urban Design Studios and Service-Learning in Planning Education

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The application of urban design theories and methods in a studio setting is fundamental in planning curricula as it allows us to test and visualize the physical and spatial implications of what planners generate through policies, programs, zoning, and land use regulations. However, the role of these studios is threatened. Planning's move towards the social sciences shifted interest towards social, economic, political, and cultural problems. Academic culture and accreditation boards increasingly required educators to have doctorates and engage in scholarship and publication, creating a culture that promotes traditional teaching over experimental, studio-based, community embedded projects. Increasingly tighter budgets exert pressure on studios as they require more time than a regular class from both students and faculty, require more space, serve fewer students, and involve a constant search for clients and "real" projects. Threats increase as planning programs develop more flexible curricula, embrace on-line teaching, and focus on moving students faster towards graduation.

In this presentation we will discuss the urban design four-studios sequence in the planning program at California Polytechnic State University, San Luis Obispo, USA. We will focus on the service-learning opportunities these studios had with local jurisdictions and private parties over a 25-plus year period. Dealing clients and "real problems" has proven to be an engaging and efficient method to reach the learning objectives while

providing students with a strong sense of satisfaction and self-confidence. The contracts help paying some of the extra costs involved in the studio and these opportunities allow us to give back to the communities served by Cal Poly and popularize what planners and urban designers can do. Our discussion will draw from insights from the authors' experience, from other faculty members, from assessments by the Planning Accreditation Board, and from surveying current and former students engaged in the profession.

Special Session 12 | RETHINKING ACCESSIBILITY IN THE 15-MINUTE CITY: GLOBAL PROJECT INSIGHTS

SS_12 RETHINKING ACCESSIBILITY IN THE 15-MINUTE CITY: GLOBAL PROJECT INSIGHTS / 1989

Evaluating the 15-Minute City Concept in Ankara: Resident Perceptions of Accessibility in Çankaya and Keçiören

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The concept of 15-minute cities has gained global attention as a sustainable urban planning model aimed at creating cities where residents can access essential services and amenities within a 15-minute walk or bike ride from their homes. This model emphasizes accessibility, reducing reliance on cars, and fostering more livable and inclusive urban spaces. This study explores the perceived accessibility of two districts in Ankara, Türkiye (Çankaya and Keçiören) through the lens of the 15-minute city framework. The research employs walk-along interviews as the primary methodology, engaging local residents in real-time assessments of their urban environments. This study is a part of the DUT-funded project, AccessCity4All.

The walk-along interview method involves participants in walking with the researcher through their neighborhoods while sharing their experiences and perceptions of accessibility, convenience, and safety. This approach allows for an in-depth exploration of how residents interact with their urban space, highlighting the gaps between idealized planning models and lived experiences. By focusing on Çankaya, an affluent old district with high infrastructure, and Keçiören, a more densely populated area with varying levels of new development areas, the study contrasts the accessibility of two different urban contexts within Ankara. Preliminary findings suggest that while both districts have areas that align with the 15-minute city ideal, significant challenges remain, particularly in terms of pedestrian infrastructure, safety concerns, and access to essential services in more densely populated or less-developed areas. Keçiören residents, though less educated, are pleased with their streets, having shaped them into their version of a 15-minute city. Meanwhile, Çankaya residents, who are more educated, often criticize their streets for problems like lack of cleanliness, obstructive pavements, and poor quality. The study highlights the importance of considering local context and resident perceptions in urban planning, and it calls for a more inclusive approach to designing cities that truly prioritize accessibility for all citizens. These findings contribute to the growing discourse on sustainable urban mobility and the practical realities of implementing the 15-minute city concept in diverse urban environments.

Keywords:

Accessibility, Fair 15-Minute City, Shared Mobility, Resident Perceptions, Urban Services

SS_12 RETHINKING ACCESSIBILITY IN THE 15-MINUTE CITY: GLOBAL PROJECT INSIGHTS / 2054**Positive and Normative dimensions of accessibility by proximity for supporting a fair and sustainable 15 min city model****Author:** Paola Pucci¹**Co-author:** Giovanni Lanza ¹¹ *Politecnico di Milano - DASTU*

The presentation introduces several dimensions of the concept of accessibility by proximity that may better frame the actual contribution of proximity in different planning experiences finalised to promote the Xmin city model. Challenging an acritical use of the proximity concept based on the physical spatial-temporal conditions and a focus mainly on dense compact urban contexts, the presentation proposes to enrich this concept by combining a functional dimension of proximity, with a relational one, focused on the exchange of resources and collaboration spontaneously activated in a community, sharing specific accessibility-related needs, problems and mobility opportunities. Based on this, the presentation aims at

Introducing some considerations on the relationship between the Xmin city model and the accessibility by proximity concept and its relevance for a potential paradigm shift for reorienting transportation and land use planning toward increasing the availability of services, activities, and social contacts in proximity to reduce the need for travel, towards less extensive but more active and sustainable forms, and helping to reinforce internal community ties (Ferreira et al. 2003, 2007).

Proposing a declination of proximity (as a mean) and accessibility by proximity (as an end) that can contribute to deal with the challenging issues in the implementation of X min city. Among them: the risk of standardising people's needs and underestimating the demands of different social groups, reproducing existing inequalities (Cooke et al. 2022); and limited replicability in several different socio-spatial as in suburban, peri-urban and rural areas (Guzman et al., 2021); an increase in housing prices, gentrification and displacement of vulnerable populations (Dunning et al. 2021; Haarstad et al., 2022; Poorthuis & Zook, 2023) exacerbating social divides (Guironnet and Halbert, 2020).

Presenting an operative framework for dealing with new metrics of accessibility by proximity and its positive and normative dimensions, based on the results of two research projects (<https://ex-tra-project.eu/>; <https://commonaccessproje>).

Keywords:

Accessibility by proximity; relational proximity; functional proximity

SS_12 RETHINKING ACCESSIBILITY IN THE 15-MINUTE CITY: GLOBAL PROJECT INSIGHTS / 2034**Exploring walking accessibility to urban services at several spatial scales: insights from five European cities****Authors:** Eduarda Marques da Costa¹; Luis Encalada-Abarca¹; Nuno Marques da Costa¹; Ana Louro¹**Co-authors:** Michael Kloiber ²; Alois Humer ²; Janina Welsch ³; Mahdi Rahimi ⁴; Samira Ramezani ⁴; Ozge Yalciner ⁵; Ebru Ocalir ⁵

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This study evaluates walking accessibility to urban amenities in cities from five distinct countries: Lisbon, Vienna, Münster, Groningen, Ankara (Keçiören and Çankaya). Focusing on both general residents and the elderly population, the research assesses the spatial distribution of essential services such as healthcare, education, retail, financial services, leisure, and sport facilities within a 15-minute walking distance. The cities are compared based on the geographic coverage of these services and the population served, highlighting socio-spatial inequalities in different urban settings. In Lisbon, accessibility is higher for recreational and retail services, while healthcare and education exhibit significant gaps. Elderly residents experience reduced physical access, except for pharmacies, whose distribution better reflects areas with higher concentration of this demographic. In Vienna, the homogeneous distribution of services ensures broader coverage across all categories. However, educational and financial services show lower accessibility in areas with higher elderly population. Münster demonstrates a constrained allocation of healthcare and retail services in less densely populated areas. Despite this, parks and green spaces effectively meet the needs of both general and elderly residents. Groningen reveals marked disparities between urban and peri-urban areas, with services like secondary schools and financial institutions concentrated in urban centers. The elderly face greater accessibility challenges, except for recreational spaces and facilities, which remain highly accessible. Similarly, in the Turkish capital city of Ankara (districts of Keçiören and Çankaya), healthcare services have medium-to-high accessibility, with pharmacies and primary healthcare centers serving most residents. Yet, amenities like gyms, pools, and banks are less accessible in low-density areas. The elderly population has limited access to educational and recreational services, underscoring the need for targeted interventions. Overall, compact cities like Vienna and Lisbon tend to perform better in accessibility, whereas cities with lower density or peri-urban sprawl face significant challenges. This analysis highlights the importance of adapting urban policies to meet the needs especially of vulnerable groups, aligning with the principles of the 15-minute city concept.

Keywords:

Accessibility analysis; proximity; urban amenities; urban functions; spatial analysis

SS_12 RETHINKING ACCESSIBILITY IN THE 15-MINUTE CITY: GLOBAL PROJECT INSIGHTS / 2053

The supply structures of shared mobility services and emerging access issues in marginalised communities

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This paper discusses the methodological framework for examining the current spatial supply structures of three types of shared mobility services (car-, bike-, and e-scooter) to develop a typology according to socio-economic and socio-cultural characteristic of potential users. It forms part of the DUT-funded project, Share4Equity, which aims to explore the current and potential contribution of shared mobility services to help realise the ideas of equitable transport, mobility justice and the 15-minute City. Previous research finds that marginalised users are generally more exposed to negative impacts of transport decision making, and they often face accessibility inequalities as new mobility services emerge. Furthermore, the digital divide and differences in competences and capabilities in using shared mobility services between different population groups are considered as one of the main causes for creating new forms of transport inequalities. Transport justice is one means of examining how opportunities for shared mobility are distributed across society and how to reduce car-dependency in the 15-minute city context. In our research, three dimensions of transport justice (distributive, procedural and epistemic) will be used to analyse: 1) the supply and distribution of shared mobility services, 2) user perceptions and experiences, and 3) the inclusivity of different forms of sharing. Research presented in this paper focuses on the supply structures of shared mobility options, using case studies from European countries (Germany, Sweden, Italy, and Poland) and from Canada, ranging from privileged inner-city districts to car-dependent peri-urban areas. The comparison will inform the current state of supply: 1) by visualising (un)even spatial distribution of shared mobility, and 2) by substantiating whether large cities are advanced units of progress. Drawing on previous work (Groth et al, 2023), we present our methodological framework for evaluating the supply structures of selected cities or city regions and for visualising the spatial supply patterns of shared services. We plan to intersect them with spatial and census data on residents' socio-economic characteristics in different administrative districts of case study cities/regions. We aim to elaborate which types of variables correlate with supply patterns (distributive dimension) in order to reveal determinants of the current spatial distribution of service supplies.

Keywords:

shared mobility; supply structures; transport justice; marginalised communities

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SS_12 RETHINKING ACCESSIBILITY IN THE 15-MINUTE CITY: GLOBAL PROJECT INSIGHTS / 1952

Integrating urban complexity into accessibility planning: Towards a people-centred and place-based approach to reach the objectives of the 15-minute city across diverse urban forms

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The 15-minute city concept has become a popular and actionable framework for accessibility-based planning. However, narrow interpretations of the concept are problematic as they prescribe a complete decentralization of urban functions overlooking the holistic nature of the 15 min city concept. Such narrow interpretations

may lead to unrealistic goals or adverse effects on sustainability and social inclusion, particularly in less dense urban areas, limiting the concept's applicability and its ability to achieve desired outcomes. Therefore, this paper proposes pathways for place-based, people-centred accessibility planning to achieve the underlying ideals of the 15-minute city across diverse urban forms. Departing from the view that cities function as complex adaptive systems, characterized by dynamic and partly uncoordinated interactions among urban agents, the paper calls for a condition-based approach that fosters various potential transport and land-use configurations within set but adaptable normative boundaries. Participatory processes and adaptability are central to this approach, as they enable co-exploration of development pathways and responsiveness to change through generating situational accessibility knowledge, mutual learning, and cyclical assessment of normative boundaries.

Special Session 13 | ENHANCING URBAN DECISION-MAKING IN THE DIGITAL ERA: TOOLS, METHODS, AND INNOVATIONS

SS_13 ENHANCING URBAN DECISION-MAKING IN THE DIGITAL ERA: TOOLS, METHODS, AND INNOVATIONS / 1942

Supporting the urban decision-making through a “GLOcal knowledge-System for the Sustainable Assessment of urban projects”

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Nowadays effective systems for monitoring, reporting, and evaluation appears to be relevant for governments to enhance urban-level decision-making. Indeed, monitoring the areas, plans and projects implemented in the urban environment and evaluating projects before their implementation turns out to be crucial practices for making informed decisions and supporting sustainable transitions in cities. In this context, the research project GLOSSA “GLOcal knowledge-System for the Sustainable Assessment of urban projects” of Relevant National Interest (PRIN) proposes an Indicators-Based Tool (IBTool) to support decisions in urban transformation projects, coherent with the 2030 Agenda and the Sustainable Development Goal 11 (SDG11), aiming at fostering the sustainable development of Italian cities. More specifically, the output of the research foresees: a set of indicators that may be helpful for both monitoring and evaluating the sustainability of urban projects at the district and building scale; and a multicriteria evaluation tool able to manage specific set of indicators and to outline their level of importance and priority considering different territorial realities as well as multiple phases of the design problem (selection, design and monitoring). The objective of the output of GLOSSA is threefold: i) to support Public Administrations (PAs) and planners/designers in the identification of urban areas to be transformed and in the design of urban transformation projects; ii) to support PAs in the evaluation phase of the urban transformation projects to be presented; iii) to monitor the performance of the funded projects. Accordingly, the research shows, through some Italian case studies, how the proposed methodology can contribute to help face the challenges of sustainability of our cities, especially from the point of view of decisions.

The IBTool is conceived as an open-source toolbox with the aim of being: i) multi-dimensional by putting together environmental, socio-economic and cultural indicators; ii) cross-scale by being applicable from a neighborhood to building scale; iii) flexible since it allows the selection of specific indicator according to the urban transformation projects; iv) expandable by providing the possibility of including further indicators that can be generated according to the changing needs or goals; v) multi-purpose understood as the possibility that each tool can be employed along with others or separately according to multiple temporal assessment phases. We observe that the primary beneficiaries of the IBTool are: i) PAs (national, regional and municipal) that will be supported in the identification of urban areas to be transformed, in the evaluation of projects and in the consequent allocation of monetary funds, as well as in monitoring the performance of the projects in an ex-post phase; ii) planners/designers that will be able to use the IBTool to define projects oriented towards sustainable development. In parallel, some secondary beneficiaries can be identified, such as: i) Master's and PhD

students who will be able to be trained in new models and tools; ii) experts who will be consulted in the different project phases and will be able to find in the IBTool a platform for exchange; iii) citizens who will benefit from the innovations brought about by new project defined through the support of the IBTool, in terms of improving the quality of life in the areas that will be transformed.

Keywords:

SDG11; Decision support system; IBTool; GLOSSA; Indicators; MCDA

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SS_13 ENHANCING URBAN DECISION-MAKING IN THE DIGITAL ERA: TOOLS, METHODS, AND INNOVATIONS / 1960

A More Than Human Approach to Landscape Storytelling and Planning: Interactions Between AI and Problem Structuring Methods

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The adoption of innovative technologies, such as Artificial Intelligence (AI), is redefining Problem Structuring Methods (PSMs), expanding their capacity to address complex and unstructured problems (Sacco & Poli, 2024). AI, understood as a set of computational techniques capable of analyzing vast amounts of data, simulating scenarios, and constructing multidimensional narratives, enhances PSMs' ability to manage uncertainty and engage stakeholders. Traditionally, PSMs have been used to structure decision-making in uncertain and multi-actor contexts, facilitating the representation of different perspectives and addressing complex, ill-structured problems resistant to conventional solutions (Mingers & Rosenhead, 2004). Their integration with AI combines PSMs' strengths in navigating complexity with AI's advantages in processing and interpreting data, opening new possibilities for more comprehensive and nuanced decision-making

frameworks. This synergy emerges as an interesting perspective to enrich landscape planning strategies, where the integration of PSMs and AI could enable a more inclusive and articulate representation of ecological, social, and technological components.

In this contribution, the concept of landscape is examined starting from the framework of Ecosystem Services (Hermann et al., 2011), one of the most widely used approaches in landscape studies. In this framework, landscapes are understood as complex systems that deliver essential services—such as provisioning, regulating, supporting and cultural services—to communities, emphasising the landscape's values for their role in offering benefits to human well-being. Viewed as a tool for community benefits, the landscape loses its subjectivity, turning into an object from which value is extracted. From this perspective, unfortunately, the use of PSMs and AI in this context only reinforces this mindset. While PSMs effectively capture landscape complexity, their predominant focus on human interests limits their ability to account for the interconnections between human and non-human entities. This anthropocentric bias presents a challenge, as it does not fully align with the intrinsic complexity of landscapes, where multiple agents—both human and non-human—interact in dynamic and often unpredictable ways. Conversely, AI offers unparalleled opportunities to reinterpret landscapes, enabling new ways of narrating their complexity. However, an overly predictive approach risks oversimplifying issues, potentially overlooking the nuances and the inherent poetic nature of landscapes and their intrinsic value (Cerreta, 2010). This paper explores the advantages and limitations of adopting PSMs and AI in landscape planning strategies, aiming to identify opportunities from both approaches to develop an integrated vision for landscape values and evaluation.

A compelling alternative perspective emerges from the concept of More-Than-Human (Haraway, 1985), which challenges the traditional anthropocentric paradigm by acknowledging the agency of non-human entities, including ecosystems, biodiversity, and technological infrastructures. Adopting a More-Than-Human approach in landscape planning invites a fundamental rethinking of landscape decision-making processes, encouraging the inclusion of multiple voices—both human and non-human (O'Connor & Kenter, 2019). Rather than providing definitive answers, this contribution aims to outline a landscape-centered framework that could foster a shift in the way the landscape is narrated.

Through the lens of a More-Than-Human approach, the paper investigates how it is possible to integrate PSMs and AI in moving beyond an anthropocentric vision, fostering a deeper understanding of landscape complexity. This shift has the potential to create more inclusive, resilient, and sustainable landscape narratives, better equipped to address contemporary challenges where complexity and uncertainty play a central role. By embracing this perspective, landscape planning can transition towards a more adaptive and ethically grounded practice, capable of responding to the evolving needs of both human and non-human actors in a rapidly changing world.

Keywords:

Problem Structuring Methods; Artificial Intelligence; Landscape Planning; More-Than-Human

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SS_13 ENHANCING URBAN DECISION-MAKING IN THE DIGITAL ERA: TOOLS, METHODS, AND INNOVATIONS / 2031

Assessment of Climate Change Adaptability and Risk based on open data: The Case of Italy

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Climate risks are becoming increasingly critical as climate change intensifies globally including Italy, where the effects are visible through increase of extreme events such as heatwaves and floods. Addressing climate change requires localized assessments that integrate environmental, socio-economic, and climatic factors to guide targeted adaptation strategies. This study focuses on evaluating climate adaptability and risk across Italy using two composite indices: the Climate Change Adaptability Index (CCAI) and the Climate Change Risk Index (CCRI). Both indices are developed using open data sources, including ISTAT (Italian National Institute of Statistics) and ISPRA (Italian Institute for Environmental Protection and Research), ensuring broad accessibility. This methodological approach highlights both the potential and the challenges of using publicly available data for urban decision-making.

This contribution utilized GRInS (project titled Growing Resilient, Inclusive, and Sustainable) taxonomy that represents a methodological approach aimed at classifying Italian territories based on their functional and spatial characteristics. By following this methodology, the Italian municipalities are divided into three macro-classes as follows i.e., Inner Italy (Italia Interna), Metropolitan Italy (Italia Metropolitana), and Intermediate Italy (Italia di Mezzo). Each macro-class has micro-classes within.

On one hand, the CCAI (which varies from -1 to +1) measures resilience by balancing exposure to climate hazards with adaptive capacity indicators. Specifically, it incorporates Consecutive days without rain, Duration of hot periods, Average temperature increase (1960–2008), Tree canopy density, and Soil permeability. Results show stark regional disparities: northern Italy demonstrates higher adaptability, particularly in Alpine regions. Conversely, southern regions, including Calabria and Sicily, exhibit lower scores. When analyzed through the territorial typologies, Inner Italy shows mixed adaptability, with remote areas benefiting from natural assets (0.34) whereas denser zones near metropolitan areas (0.05) face challenges. Intermediate Italy varies as well, with coastal areas scoring moderately (0.26) and urban-rural plains showing negative adaptability (-0.13). Metropolitan Italy remains vulnerable, with capitals scoring the lowest (-0.44) due to high exposure and urbanization.

On the other hand, the CCRI (varies from 0.13 to 0.77) evaluates the intersection of climate hazards and socio-economic vulnerabilities. It combines Consecutive days without rain, Duration of hot periods, Average temperature increase from 1960–2008, and the Socio-economic vulnerability index (SEVI, another composite index elaborated by the

authors) to identify areas of heightened risk. Findings highlight significant challenges in southern and rural areas, where socio-economic fragility compounds climatic stressors. For example, inner Calabria experiences extended dry periods exceeding 40 days, exacerbating its vulnerability. In Inner Italy, sparsely populated areas near metropolitan regions have high values (0.52) due to 31.21 consecutive dry days and SEVI (0.45). In contrast, northern and central metropolitan regions, like Lombardy, show lower risk (0.36–0.40) with shorter dry spells (22.18 days) and stronger economic resilience, though capital cities still face localized risks (0.42) from urban heat and socio-economic disparities. This dual-index approach also shows the need for place-based strategies. Enhancing natural resilience through reforestation and urban greening, coupled with socio-economic initiatives to reduce inequalities, is critical. The study emphasizes the importance of governance reforms and participatory planning to support equitable climate adaptation, and contributes to methodological advancements for public administrations and urban planners navigating the complexities of urban transformation.

This study emphasizes the innovative integration of positive and negative indicators to support decision-making through assessing territorial vulnerability. By combining natural and socio-economic dimensions, the approach offers actionable insights for enhancing climate adaptability and risk reduction.

Keywords:

Climate change adaptability; climate risk; territorial sustainability; open data; Italy

SS_13 ENHANCING URBAN DECISION-MAKING IN THE DIGITAL ERA: TOOLS, METHODS, AND INNOVATIONS / 1967

How does software support decision-making processes in the group dynamic?

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In the digital age, it is crucial to reflect on the role and relevance of urban structuring and decision-support methods.

The overall aim of SUITE research (Decision support in an urban context in the digital age: interactions and uncertainties) is to explore this issue, through a main research question: is the concept of Problem Structuring Methods (PSMs) (Rosenhead and Mingers, 2001; Shaw et al., 2006) and Multi-Criteria Decision Analysis (MCDA) (Greco et al., 2016; Munda, 2019) still relevant in a world accelerated by technology and digital innovation? This research takes a firm and substantiated stance on its relevance: structuring and decision support methods are still significant, but contextual conditions, in particular the digital revolution, may have changed the way they are to be used and the purpose for which they are applied, and this is exactly what we want to focus on. This research intends to investigate, within a decision-making process, the affordances enabled by the use of a specific artifact, a new software called Multi-Values Appraisal Methodology (MuVAM) created on a multi-methodological approach recently introduced in the literature (Lami and Todella, 2023). MuVAM combines the Strategic Choice Approach (Friend and Hickling, 1987, 2005) with the Analytic Hierarchy Process (Saaty, 1980), and it is based on cloud-based technologies, which allow synchronized and connected use, digitally and also in asynchronous mode.

The study investigates the contribution of the software to group interaction and the development of a “Plural Subject” through the analysis of eight workshops, held in four different European countries, in three languages (English, French and Italian) and on four different case studies, all related to sustainable urban development. In particular, the applications differed with respect to: i) the scale of intervention, ranging from the planning of an entire city area to that of a university campus; ii) the outcome, which in

most cases concerned the definition of a master plan. Interestingly, the participants in the workshops were also quite diverse: Bachelor's, Master's, PhD and Lifelong Learning Master's degree students, with a varied experience in terms of educational level and background. Feedback from the workshops was collected through a report or a Google survey, through a series of questions covering both group dynamics and individual choices.

Keywords:

PSMs; MCDA; Multi-Values Appraisal Methodology (MuVAM); digital innovation; urban transformations

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Special Session 14 | TRANSFORMING STREETS FOR LIVEABILITY AND SUSTAINABLE MOBILITY THROUGH EXPERIMENTATION AND PARTICIPATION

SS_14 TRANSFORMING STREETS FOR LIVEABILITY AND SUSTAINABLE MOBILITY THROUGH EXPERIMENTATION AND PARTICIPATION / 1986

Multi-stakeholder perspective in participatory street experiments

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Participatory and inclusive urban mobility schemes have been rising as a significant trend in response to various challenges that arise in street transformations, such as political, financial and regulatory obstacles. The multiplicity and diversity of stakeholders that influence and that are influenced by planning and design decisions are important factors to take into account when devising these schemes (Bertolini, 2020). A multi-stakeholder perspective in participatory street experiment processes involves engaging a diverse range of individuals and groups in the planning, design, and evaluation of urban interventions (Beyazit et al., 2023). This includes residents, local businesses, government agencies, urban planners, and advocacy groups, each offering unique insights and priorities. By considering varying needs and values, the approach fosters collaboration and ensures that solutions are equitable, inclusive, and context-sensitive. It encourages dialogue, addresses conflicts, and promotes collective ownership, leading to more effective and sustainable outcomes (Healey, 2006). Such a perspective strengthens community engagement and enhances the likelihood of long-term success in street transformation projects.

Working closely with local administrations and other local stakeholders in Istanbul, Turkey, and Klagenfurt, Austria, ACCTRA focuses on street experiments as an opportunity to engage stakeholders and generate evidence on both the impact and acceptance of measures. This creates the basis to support political decision-making in favor of street transformations, inform planning processes for permanent implementation, and foster institutional learning processes to adapt processes and better deal with conflicts over transformations. In the Istanbul case of ACCTRA, relevant stakeholder groups specifically involve residents who integrate active transportation modes into their everyday lives, those who are affected by these modes, and those who operate them, among others. Stakeholder mapping outcomes provided input for tailored planning and design of the street experiment. In order to get the stakeholder input, an on-site participatory stakeholder workshop was held, integrating an interactive urban walk and other engagement methods.

Consequently, this study narrates two processes of ACCTRA's Istanbul case: First, the stakeholder analysis and mapping that incorporated idiosyncratic power dynamics of the decision-making process. Second, the participatory multi-stakeholder workshop, its outcomes, and how these outcomes informed the micromobility street experiment decisions and implementation in Maltepe. The results highlight the lessons and recommendations derived from the case study and how they can be applied to future street experiments that strive to be transformative, participatory, and widely accepted by all relevant stakeholders.

Keywords:

Participatory street experiments; Inclusive urban mobility; ACCTRA project; Istanbul

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SS_14 TRANSFORMING STREETS FOR LIVEABILITY AND SUSTAINABLE MOBILITY THROUGH EXPERIMENTATION AND PARTICIPATION / 1939

Translating street experiments into policy change: Tactical micromobility transformation in Istanbul

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Street experiments are highly effective tools for increasing the efficiency of decision-making and planning processes. They allow citizens to gain experience related to the implementation, provide feedback, and offer an opportunity to observe how projects function in real life and help identify and minimize unforeseen issues at the “experiment” phase before the actual implementation. Additionally, citizen feedback contributes to aligning projects more closely with societal needs and fosters a participatory approach in the planning process.

Maltepe Municipality is a local government with extensive experience in street experiments. Previously, the municipality carried out participatory tactical urbanism projects in various areas focusing on different concepts¹. This time, under the ACCTRA project, a new street experiment has been designed with a focus on micro mobility.

Micromobility modes, such as e-scooters and bicycles, have the potential to expand the catchment area of public transportation (PT) stations. To that end, this street experiment leverages the popularity and increased use of micromobility vehicles, and integrates micromobility to a PT station via an Exclusive Micromobility Lane (EML) on a local feeder street to strengthen multimodal connectivity. The EML lane was designed to connect an existing bicycle lane to a Light Rail Service Station located in Maltepe, and act as an additional feeder mode for micromobility vehicles that ensure safe and comfortable connection to the selected PT station.

Project area was selected due to various its advantages such as flat surface, access to public transport, the residents’ experience from previous street experiments, participation culture of local people and access to an existing bicycle route. The project offers an invaluable opportunity to make an evidence based and participatory decision-making process with the collaboration of governmental bodies and academic institutions.

In addition, as part of the ACCTRA project an online survey was administered to investigate travelers' mode choice decisions in Istanbul and the potential impact of EMLs. The survey collected data from 1,000 residents of Istanbul regarding their current travel behavior, perceptions of various micromobility modes, and preferences through stated choice (SC) experiments. These SC experiments provided a robust framework to analyze travelers' preferences across different transportation options and to estimate the impact of EMLs on mode choice. SC experiments included two primary types of journeys: solo car trips and multimodal PT trips, which combined an access/pre-transport segment with the PT journey itself. Each participant was presented with six choice scenarios, each featuring four distinct transportation mode options: solo car, bus-train, e-scooter-train, and walking-train. The survey data were analyzed using a mixed logit model to assess the influence of various trip attributes, such as cost, travel time, comfort, and the availability of an EML on PT station accessibility. The results provide insights into the role of micromobility in enhancing PT accessibility and shaping mode choice preferences.

Keywords:

Street Experiments; Mobility; Tactical Urbanism; Micromobility; Acceptance; Participatory Planning

References:

1 Beyazit, E., Akcakaya Waite, I., Balik, H., Erturan A., Keşan, .B., (2023), "Improving women's accessibility to public transport through participatory street experiments: The case of Maltepe, Istanbul", *Journal of Urban Mobility*, Volume 4, 2023, 100062, ISSN 2667-0917, <https://doi.org/10.1016/j.urbmob.2023.100062>.

SS_14 TRANSFORMING STREETS FOR LIVEABILITY AND SUSTAINABLE MOBILITY THROUGH EXPERIMENTATION AND PARTICIPATION / 1970

Achieving transformation through involvement and evidence? Reflecting street experiments' impact on planning processes

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As the climate crisis accelerates, a mobility transition is urgently needed, tackling car dependency (Banister, 2008, IPCC, 2023, p. 103) and fostering a broader shift from 'space for traffic' to 'space for people' (Bertolini, 2023). However, the implementation of projects reallocating public space for sustainable transportation, climate adaptation measures, and social life is often challenging, facing significant political resistance, financial limitations or regulatory obstacles. As traditional planning approaches have recurrently struggled to achieve the hoped-for effects, there has been a shift towards experimental approaches in the last decade: In practice, approaches like parklets, summer streets, pop-up bike lanes, or superblocks have spread globally, especially accelerated by the pandemic. In academia, "street experiments" (Bertolini, 2020) has become an umbrella term for the phenomenon and fuelled an expansive body of literature.

At the heart of these developments is an understanding that short-term interventions can be a lever for long-term change. This includes the expectation that their temporary nature allows for testing more radical ideas without the effort and cost of traditional infrastructure projects (Meinherz and Fritz, 2023), that they can enable learning processes about implementation and impacts, strengthening transformative capacities (Kinigadner et al., 2024), or that they help increase social acceptance of more far-reaching interventions, because they are flexible and reversible, allow for participation and make

potential benefits tangible (Stevens et al., 2024). However, the understanding of how and under which conditions street experiments can lead to transformation is still limited.

Therefore, this presentation explores the interrelations between experiments' ability to generate specific knowledge and the expectation of experiments to increase acceptance for transformation, drawing on results from the project ACCTRA (Evidence and Acceptance –from Experiments to Transformation). Working closely together with municipalities, the project supports the implementation of street experiments in Istanbul and Klagenfurt, Austria. In the project, participation and stakeholder involvement processes on the one hand, and data-driven analyses and evaluation of the experiment on the other, are interlinked.

Focusing on the case of Klagenfurt, the involvement process will be presented, including stakeholder analysis, communication, and on-site participation during the experiment, to discuss the opportunities and limitations of engaging a broader public and key stakeholders for street transformations with experiments. Second, the evaluation methodology and results will be outlined to compare different kinds of knowledge, such as data about the impacts of measures, acceptability or resistance, or the lived experience of users, and their relevance for different actors such as politicians, municipal officials, planners, or media. Third, the processes initiated by the street experiment are traced, discussing the interplay of involvement and evaluation, and reflecting on the role of researchers in transformation processes.

Keywords:

street experiments; urban mobility; public space; transformation; knowledge

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SS_14 TRANSFORMING STREETS FOR LIVEABILITY AND SUSTAINABLE MOBILITY THROUGH EXPERIMENTATION AND PARTICIPATION / 2024

Transforming urban spaces: The role of play and recreation in creating a thriving Istanbul

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PLAY ISTANBUL initiative's comprehensive approach encompasses a range of strategies and projects, the major one being the establishment of an official department called Play and Recreation Chieftaincy which has been charged with the responsibility of monitoring

and implementing the initiative's vision. The overarching vision emphasises the significance of people's well-being and access to play as a fundamental pillar in building a more liveable and flourishing Istanbul. This ambitious undertaking has been brought to life through a concerted effort by a diverse network comprising locals, children, institutions, and NGOs. The initiative has been designed to foster a more liveable urban environment, by applying six major criteria, namely creativity, sustainability, accessibility, safety, innovation and inclusivity in creating and renewing play and recreation infrastructure. The initiative's approach encompasses a range of strategies and projects, including participatory design and production workshops, inclusive play and tactical strategies, open dialogue sessions and pedestrianisation games with stakeholders. The initiative has led to the establishment of numerous pop-up playgrounds and unstructured play services, extending beyond neighbourhoods in Istanbul with limited accessibility to green spaces and recreation services, even in post-disaster contexts following the earthquake. The presentation will provide an overview of the actions taken to achieve inclusive spatial design goals in Istanbul.

SS_14 TRANSFORMING STREETS FOR LIVEABILITY AND SUSTAINABLE MOBILITY THROUGH EXPERIMENTATION AND PARTICIPATION / 2035

Playful approaches to street transformation

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Gameful participation with tangible objects and collaborative design games introduce innovative ways of engaging stakeholders in urban development. Design games are playful and facilitate structured idea creation by securing collaboration. They contain physical materials and clear rules, driving discussions and insights. A specific example is the "StreetForum Design Game" where players collaboratively design shared urban spaces at street level. First envisioned as an analog board game, in the subsequent versions, the StreetForum developed further, adding Augmented Reality (AR) features and a fully digital version on the MIRO platform. Such a flexible format –from fully analog to hybrid, analog-digital –allows for very diverse groups of participants to access and engage in the game. While sharing a common perspective, the game actually empowers the residents and planners with improved sensitivity regarding the real urban needs, tackling the challenges of that community.

Meanwhile, "MoBil" –another StreetForum tool developed –makes urban space dynamic and multifunctional for playing, learning, meeting, and creating diverse activities. This collaborative process promotes long-term co-creation and end-user involvement and allows communities to develop a space that would grow with them. It is also envisioned that the project will turn into one of the global models in leading urban design, sharing methods and design in an open-source tool with the aim of diffusing innovation and adaptability on an international scale. Together, these both tools show that participatory design and gamified collaboration can drive impactful and sustainable urban development.

This topic is a unique opportunity to discuss the nexus of play, design, and urban development. The discussion of novel applications of gameful participation and tangible objects will provide insight into how structured, interactive tools like design games foster collaboration and creativity among stakeholders. The "StreetForum Design Game" provides a strong case study in which such methods translate abstract challenges into concrete, shared experiences that empower both residents and planners. From the analog board game to a hybrid model with the integration of digital and analog aspects and embedding AR, it shows in one go how adaptable and inclusive these approaches are meant to be. The same goes for the tool "MoBil", which truly opens an avenue for co-creative processes to redefine urban space –not as static entities, but as living, dynamic

ones that evolve in congruence with needs. These dialogues around these tools not only underline their potential for changing the course of urban planning but also call for versioning with scalability, effectiveness, and position regarding their role and approach as open-source models for global adaptation. This debate has the potential to create new concepts and expand the vision on sustainable participative urban development.

Keywords:

Design Games; Gamification; Tangible artefacts; Co-creation; Augmented Reality; Collaboration

SS_14 TRANSFORMING STREETS FOR LIVEABILITY AND SUSTAINABLE MOBILITY THROUGH EXPERIMENTATION AND PARTICIPATION / 2001

Narrative-based approaches to street transformation

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Street transformations are often complex processes that must navigate diverse perspectives and competing interests, making consensus-building both essential and challenging. Narrative-based approaches, such as storytelling and role-playing, offer a powerful means to bridge these gaps by fostering empathy, promoting reflective thinking, and enabling a shared understanding of different viewpoints. In the StreetForum project, we developed, tested and evaluated three narrative-driven tools aimed at engaging stakeholders in Brussels, Istanbul, Stockholm, and Vienna in 2024.

These tools –Stakeholder personas, Storytelling game and Rich pictures.talk –encouraged participants to reflect on their lived experiences, share them with others and walk in someone else's shoes. While they demonstrated great potential to support street transformations, their use was not without obstacles. Participants' familiarity with the street, time constraints, and the varying cultural and social contexts significantly influenced the tools' effectiveness.

This presentation will introduce these StreetForum tools, their development process and their impact assessment, reflecting on the benefits and challenges of using them. It will provide recommendations on how to best use narrative-driven tools, such as ensuring flexibility and accessibility to different stakeholder needs and cultural settings.

Special Session 15 | REVERSING THE GAZE: REIMAGINING THE RELATIONSHIP BETWEEN CITIES AND THEIR WATERWAYS

SS_15 REVERSING THE GAZE: REIMAGINING THE RELATIONSHIP BETWEEN CITIES AND THEIR WATERWAYS / 2010

Water-Sensitive City: Enhancing River-Centered Planning Strategies in Turin

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The topic of Urban Water Management has experienced a major shift in recent decades, driven by increasing environmental awareness and evolving social expectations. This shift marks a paradigmatic change, offering an opportunity to restore rivers to a central role in urban development, reflecting their historical interdisciplinary significance and multiple values. From being resources historically subjected to intensive exploitation, rivers can once again be recognised as living systems with their own dignity. While they can support the biological cycles of multiple species, they can also provide opportunities for development and regeneration of the urban fabric, becoming crucial drivers for re-thinking the metabolism and complex dynamics of cities. Among the array of emerging water-related strategies, projects, and frameworks, the Water Sensitive City (Wong and Brown, 2009) approach stands out for its comprehensive engagement with urban disciplines and spatial dynamics. Leveraging this innovative approach and the possibilities of river-centred transformation, this paper aims to contribute to the discussion on Urban Water Management and Spatial Planning interdependencies. It explores Turin's urban river areas through the lenses of legacy, river-city interaction, and collective spatial imaginary, aiming to enhance the practical application of the Water Sensitive City model. By highlighting the importance of urban rivers and advocating for a more river centric perspective to spatial planning and design, this research aims to foster a renewed focus on river-oriented centrality, positioning rivers as pivotal elements in addressing the complex challenges of urban transformation within contemporary urban complexity.

Keywords:

water sensitive city; urban river; urban water management; spatial planning

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SS_15 REVERSING THE GAZE: REIMAGINING THE RELATIONSHIP BETWEEN CITIES AND THEIR WATERWAYS / 1922

In order for co-existing, in a just way, with the excess of water in a small favela

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Torresmo is a community, in the eastern periphery of São Paulo, Itaim Paulista, inhabiting an informal settlement divided by a stream whose recent channelization increased the incidence of flooding.

The hydraulic safeness of the Brazilian megalopolis is planned by the Secretary of Infrastructures (SIURB) through numerical modeling -of the presence of water and its drainage- and design, mainly, of gigantic lamination basins, Piscinões. These reservoirs, a third border for the rivers (de Mello Franco et al 2007), are usually built in peripheral areas where soil is less expensive (Millington 2021) and in proximity of informal settlements where the non legal occupation of space may afford an opaque making of the infrastructure. Recently, likely due to the activities of a Living Lab in the area, the SIURB proposed the construction of a Piscinão in Torresmo to repair the issues exacerbated by the previous channelization. The existence of this project became an occasion -for the inhabitants and the lab- to envision the redeveloping of the river space in terms of spatial and cognitive justice (de Sousa Santos 2015), imagining the construction of recreation spaces above the lamination basin and starting the negotiation for its “fair construction”. Grounding on fieldwork experience, collaboration with the lab, and participatory art activities, this presentation discusses the undergoing spatial processes and dynamics linked to the construction of the Piscinão. Furthermore, it addresses how the inhabitants are (re)constructing their relation with water forms by reflecting with design concepts such as surface runoff and the size of the basin.

Keywords:

water infrastructure, informality, brazil, cognitive justice, participation, flooding, imagination, arts-practice

SS_15 REVERSING THE GAZE: REIMAGINING THE RELATIONSHIP BETWEEN CITIES AND THEIR WATERWAYS / 1997

Unfolding water interfaces: water between urban infrastructure and culture

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Over the centuries, the process of urbanization has progressively expanded, altered and modified the natural water cycles: water has been urbanized. This paper proposes to analyze water infrastructure as the intertwining of distinct but yet interconnected networks: surface, ground, drinking, runoff, wastewater. With the development of increasingly complex water machines, mainly conceived as a solely technical space, the link between the urban space and the water as an element and as a cycle has been progressively lost. Water urbanization has heavily modified not only each water system individually (through river vaulting, diversions, canals, dikes, drainage, supply and sanitation networks and devices) but also and most importantly the way in which they function as a whole, the way in which they interface.

This paper proposes to read the process of water urbanization through the notion of water interfaces, defined as the spaces where different water systems meet, and where to analyze water as a systemic infrastructure and as a common culture at once. Water urbanization will be explored documenting, mapping, categorizing water interfaces within

different socio-economic contexts: Bruxelles (BE); Sicily and Ravenna (IT); Kinshasa (DRC); Dakar (SNG). This approach will provide firstly a comparative overview on how water cultures have been modified by urbanization in the proposed case studies, secondly a systemic understanding of the role and potential that specific practices play as spatial interfaces between infrastructures and place-based cultures.

SS_15 REVERSING THE GAZE: REIMAGINING THE RELATIONSHIP BETWEEN CITIES AND THEIR WATERWAYS / 1976

Visualising the Terrain for Water Resilience: A methodology to visualise and communicate the systemic effects of design interventions in a water system.

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Investigations into water systems have seen a renewed emphasis in recent times. Brought on by a diverse range of issues from water scarcity, urban flooding, ecological damage due to human processes, and rising sea levels, water has become an increasingly pertinent research topic. Firstly, this research project intends to investigate a methodology of how we understand and visualise water systems through a general systems thinking (GST) lens. Utilising the idea of 'System Leverage' as a framework, we shall explore through design-research how understanding the wider system can lead to alternative design approaches to water resilience infrastructure. A secondary goal of this research is to help develop a tool for interdisciplinary decision-making when designing water-resilience measures in a rural Irish context. This tool takes on a digital format with the aim to describe to an audience how small interventions in the landscape-system can leverage the overall water system to a beneficial outcome. These speculative interventions are described across a series of systemic scales to inform about their overall impact on the system. Future benefits from this tool may be to become an effective format for disseminating systemic interventions to an audience of stakeholders and design consultants e.g. ecologists, hydrologists.

Keywords:

General System Thinking; Design-research

Special Session 16 | SMALL TOWNS –BIG CHALLENGES AND HIGH POTENTIALS?

SS_16 SMALL TOWNS –BIG CHALLENGES AND HIGH POTENTIALS? / 1930

Small town inner-city centres –cases from Germany. Insights from research on processes, concepts, tools

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During the COVID-19 pandemic, small towns have complained less about massive problems of sudden inner-city desolation. On the one hand, this was due to the fact that the inner cities and location-based retail had already experienced severe problems in previous years due to the growth in online retail, and on the other hand, the short (communication) distances proved to be very helpful. The German Ministry of Housing, urban development and building launched in 2022 the so called “Future-proof city centers and centers” funding program in which 218 municipalities are participating to date. 61 of them are small towns between 5,000 and 20,000 inhabitants. It is worth taking a look at the measures for inner city stabilization, reactivation and upgrading with regard to the selected instruments, tools, concepts and forms of cooperation - also in comparison to the approach in large cities. There are both differences and similarities in terms of strategies and measures to make inner cities more mixed-use, climate-friendly, attractive and resilient. Based on evaluations from the accompanying research for this funding program, the presentation aims to provide insights into the current inner city development of small cities. Findings from the quantitative (indicator evaluation) and qualitative evaluation can be presented and discussed in an overview and comparison as well as in a strikingly illustrative way using individual case studies.

Keywords:

small towns; inner-city centres; case studies;

SS_16 SMALL TOWNS –BIG CHALLENGES AND HIGH POTENTIALS? / 1981

Urban-systematic-quantitative analysis of metropolitan functions in small towns

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Metropolitan regions and metropolitan areas have been the subject of empirical urban systems research for many years. In contrast, the focus on small and medium-sized cities has been more recent, primarily through regional case studies and theoretical-conceptual analyses. Europe-wide comparative empirical analyses are rare and often

unsuccessful due to a paucity of available small-scale data. This article endeavors to address this lacuna by leveraging small-scale data concerning the functional organization and demographic evolution of European cities. The functional data originate from the raw data of the BBSR study on metropolitan areas in Europe (2011), while the demographic data are derived from the time series adjusted for territorial reforms (1961-2011) and the 2021 census data from Eurostat.

The central objective of this article is to respond to the research question concerning the statistical explanation of variations in the perceived importance of small and medium-sized cities across nation states. The hypothesis, grounded in extant research, posits that characteristics of national urban systems can account for a substantial portion of these variations (e.g., primacy city vs. decentralized concentration). As a control, the extent to which demographic developments can statistically explain the differences in importance is tested. This is predicated on the assumption that urban functions exhibit a high degree of location persistence, while suburbanization processes, for example, lead to changes in population figures in the core cities and their surrounding areas. Furthermore, cities belong to different city size classes over time, while the functional significance remains largely unchanged.

Preliminary research conducted by Terfrüchte and Growe (2023) indicates that functional distinctions are not invariably associated with specific city size classes or their positioning within or outside metropolitan areas, nor are they necessarily contingent on their proximity to metropolitan cores. However, the unique characteristics of national urban systems can contribute to a more nuanced understanding of the phenomenon. For instance, economic functions in the Scandinavian countries are localized more frequently than average in small and medium-sized cities, while in Germany or Italy the majority of functions are localised in large cities.

In addition to providing theory-based explanations, the article also addresses the special features of national administrative structures. These features make a comparison of cities below the NUTS 3 level (in Germany, districts and independent cities) almost impossible. While there exist explanatory approaches (derived inductively from individual cases) for developments in the urban system beyond the metropolitan areas, there is a paucity of empirical material to test corresponding hypotheses on the significance of small and medium-sized towns (SMSTs) across Europe.

Keywords:

Small and medium-sized towns; urban system; Metropolitan functions;

References:

Terfrüchte, T., & Growe, A. (2024). Spatial-functional patterns in the European urban system: metropolitan functions in small and medium-sized towns. *European Journal of Spatial Development*, 21(2), 18–41. <https://doi.org/10.5281/zenodo.11385915>

SS_16 SMALL TOWNS -BIG CHALLENGES AND HIGH POTENTIALS? / 1972

Knowledge Economy in Germany - Small Towns in the Shadow of Large Cities?

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The increasing dynamism of the economy and the intensifying competitive environment are precipitating novel challenges for societies of knowledge, organisations and enterprises. Urban areas are recognised as focal points for social-spatial, cultural and economic activities within metropolitan and rural contexts. Despite the increasing connectivity facilitated by Information and Communication Technology (ICT) and the subsequent integration of rural areas into communication networks, empirical studies conducted on

metropolitan regions suggest that large cities and their environs continue to be attractive hubs for creative and knowledge-intensive employment opportunities.

The flexibilisation of work and the increasing agglomeration disadvantages in large cities have led to an increased focus on knowledge-intensive activities in the development of urban hinterland. However, the extent to which large cities also borrow specific functions from small towns in the surrounding area in the opposite directions (Mayer/Knox 2010), and can benefit from their facilities (Meijers/Burger 2022) has been largely ignored (Wagner 2024).

The objective of this paper is therefore to analyse the role of small towns with regard to the knowledge economy in the surrounding areas of the 50 large city regions in Germany between 2012 and 2019. The methodology employed in this study involves an analysis of spatial concentration patterns of the knowledge economy, categorised according to distinct knowledge bases, namely analytical, synthetic and symbolic. Secondly, I will compare functional specialisation processes of knowledge-intensive occupations in large towns and small towns in large city regions. The central argument of this study is that specialisation processes can occur in small towns independently of the development of the core city.

Finally, the argument is made for multidimensional perspective on city-hinterland developments that consider different town size classes, location factors and the needs of knowledge-intensive employment.

Keywords:

small towns; Germany; knowledge economy; knowledge-intensive services

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SS_16 SMALL TOWNS –BIG CHALLENGES AND HIGH POTENTIALS? / 1968

New planning tools and project opportunities towards a more sustainable revitalization of very small settlements and local communities in peripheral territories

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In the recent debate about the sustainability of our lifestyles in the cities, the current status of small urban settlements and their interdependent relationships are frequently overshadowed and neglected by the so discussed expansion of bigger metropolitan cores. The actual focus of the debate that arises, in terms of spatial nature of metropolitan development, affirms that among bigger metropolitan cores, the social fabric and the economic sectors of these highly urbanized regions are deeply interlinked with the dense network of small and medium-sized towns and rural areas they are placed. A wing of the urban planning debate argues that in current times the tendency to adopt place-based narratives in the forming of metropolitan territorial vision shapes small towns and leads them to have a higher impact on local and regional planning, with a broader vision in order to promote territorial cohesion and wide-area cooperation. This significant role that small towns acquire in proximity and connectivity of metropolitan areas - or entire

peripheral regions - overturns the narrative and brings the spotlight on them as new horizons of the future territorial planning practice, making us wonder if small towns can be placed in the wide and articulated debate on territorial planning for sustainable development. Dealing with future narratives and imaginaries of small towns and major metropolitan areas, the debate should propose a shift of perspective from the tendency to focus on negative narratives (e.g. depopulation, economic shrinkage, brain drain, lack of essential services) to a more optimistic view made of simplicity, social ties, short distances, direct contact with political authorities and decision makers. This possible future is always conditioned by actual real challenges linked not only to the spatial dimension of the phenomenon but also to the social and economic one, leading to ask whether the smallness of a settlement can contribute to the improvement or generation of quality exchanges in the community that lives it. Within this panorama, a fundamental step leading to a rebirth and repopulation of these territories passes from new social, economic and cultural dynamics that could land to new networks of these peripheral realities in broader contexts, where proximity becomes an area and represents a real challenge in shaping new place-based policies. This contribution tries to investigate how these very small and peripheral realities can lead to a more inclusive system of territorial governance and to a better improved access to essential services (health, instruction, mobility) and public goods through new different forms of area planning influenced by soft governance dynamics. New tools to support the identification of the potential linked to a specific location as narrative, metaphorical and real basis of a negotiated programming tool (e.g. River Contracts, Contrats d'Axe etc.) that includes multiple actors with the aim to realize or enhance the existing, shape inclusive, resilient relationships between society and the environment and, finally, reach shared urban design strategies and projects aligned with the community needs, as well as a formal commitment to make them operational through the partnership of a plurality of subjects.

Keywords:

small towns; soft governance; place-based; bottom up involvement

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SS_16 SMALL TOWNS -BIG CHALLENGES AND HIGH POTENTIALS? / 2072

On the subject of a 'revenge' for small towns, based on the French example

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In the scientific literature, small towns are often presented as places with a combination of demographic (population decline), economic (marginalised by globalisation) and even social (high concentration of poor people) vulnerabilities. In France, research on small and medium-sized towns has a long history, but scientific debate and the focus on metropolisation issues overshadowed them in the 2000s. They have also been ignored since the 1970s by public actors and policies, which for the last decade or so have been focusing their attention on metropolises and rural areas. However, a renewed interest in and for small towns has been visible since 2014 and a national programme for revitalising town centres, a revival of attractiveness accentuated since the covid-19 crisis.

The aim of this presentation is to examine the factors explaining this new context and interest. It also attempts to objectivise the elements of dynamism or “revival”, to use the terminology often employed by the media, by studying the reality of the socio-economic and demographic situation of small towns in France. Against a backdrop of small towns being put on the political agenda, three topics in particular are explored: the great return of centrality, urban decline and development models. Finally, we look at the major future challenges facing small towns and local actors, if they want to confirm their “renaissance”.

This presentation is based on general trends of small towns in France as well as some specific case studies chosen to illustrate specific challenges and locally implemented policies (such as Thiers or Saint-Eloy-les-Mines), from recent scientific literature and recent studies carried out by various research and institutional bodies.

Keywords:

small towns, France, renaissance

Special Session 17 | PERSPECTIVES ON COMMONING MOBILITY AND ACCESSIBILITY

SS_17 PERSPECTIVES ON COMMONING MOBILITY AND ACCESSIBILITY / 2057

Commoning Accessibility: Reframing Accessibility as a Common Good

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Recently, a range of community-driven practices aimed at improving accessibility has gained increasing prominence and recognition. These initiatives, which emphasize the critical role of accessibility as a fundamental resource for activity participation and social inclusion, are characterized by a reliance on collaboration among individuals actively engaged in the co-creation and governance of shared mobility solutions, as well as community-managed proximity and digital services. In this framework, these practices challenge the traditional view of accessibility as an individual concern, reframing it as a collective matter that can be addressed through collaborative efforts to meet shared needs. In essence, they suggest that accessibility can be understood as a common good.

Despite its transformative potential, this perspective remains underexplored in planning theory and practice. Nevertheless, it offers promising opportunities to innovate the conceptualization, analysis, and delivery of accessibility through new approaches to proximity, mobility, and digital connectivity. This potential is particularly evident in spatial contexts where access to activities requires resource-intensive motorized travel due to the scarcity of accessible facilities in proximity. Such contexts include peri-urban areas, urban peripheries, and other low- to medium-density areas, which often exhibit lower levels of accessibility compared to the so-called “15-minute city” model associated with dense, compact urban centers. These areas frequently pose significant barriers to access and participation, particularly for specific populations such as young and older people, and those without access to private motorized transport. In such scenarios, initiatives in which accessibility is commoned through the co-production and sharing of opportunities for access and participation by a community—broadly defined to encompass private citizens, NGOs, local authorities, and private companies—offers a promising solution to local challenges. These initiatives address specific accessibility needs that might otherwise remain unmet by conventional forms of provision, such as market-driven services or state-managed infrastructure. Moreover, they provide critical and innovative insights into how inclusive and sustainable mobility solutions can be fostered, even beyond compact urban environments.

Recognizing the social and political significance of reframing accessibility as a common good, this paper builds on the theory of the commons and the concept of “commoning mobility” proposed by Nikolaeva et al. (2019) to introduce the notion of Commoning Accessibility (CA). This innovative conceptual framework redefines accessibility as an essential resource for activity participation and needs fulfillment, one that can be commoned through specific collaborative initiatives (Commoning Accessibility practices) co-produced and maintained by the collective actions of proactive actors (Communities of Access). The concept of CA originates from a comprehensive research project on commoning accessibility in Europe (the Common_Access project, available at <https://commonaccessproject.com>) and is outlined in Deliverable 2.1 of the project. This paper elaborates further on the concept, incorporating insights from recent research developments.

This paper aims to deliver new and impactful policy insights for developing and promoting innovative methods and regulatory frameworks for accessibility provision within communities under the CA framework. The paper presents a range of examples and case studies, analyzing these experiences through a multidimensional lens to uncover critical insights for urban planning and fostering the effectiveness and scalability of these practices across a variety of territorial contexts.

SS_17 PERSPECTIVES ON COMMONING MOBILITY AND ACCESSIBILITY / 2058

Commoning mobility knowledge

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‘Commoning mobility’ emerged as a prominent concept in recent scholarship on just mobility transitions. From this perspective, which redefines mobility as a ‘collective good’, mobility is social and shared: mobilities are co-produced in that people plan and perform mobilities together. Given the interdependence and materiality of mobilities, people shape each other’s lives as they move (or remain stationary) at various scales. This emphasis on co-production of mobility and people’s interdependency resonates with the feminist urban scholarship, yet these two bodies of literature have rarely been brought in dialogue. Both strands of literature present an alternative to the dominant, technocratic vision of mobility, which foregrounds direct individual journeys. One facet of mobility planning that remained underexplored in both debates is the role of knowledge, despite growing attention to the issue of epistemic injustice in planning broadly and in planning just mobility transitions, in particular. Drawing on feminist epistemologies, this paper makes an innovative contribution to the field of planning by developing the notion of ‘commoning mobility knowledge’. This approach entails questioning the basic assumptions that condition planning’s intersectional exclusions. It also involves de-centring dominant questions, categories, themes, methods of knowledge production, and ways of using knowledge. For planning practice, commoning mobility knowledge would mean reconstituting mobility planning knowledge from multiple vantage points, acknowledging and mobilising the embodied, situated knowledges of marginalised groups, and centring women and minoritised groups as legitimate knowers. The notion of commoning mobility thus helps conceptualise alternative approaches to mobility knowledges and urban imaginaries that are missing or are marginalised in academia and practice. The paper will offer some concrete examples of advancing scholarship and practice in this direction by focusing on urban care, mobilities of leisure as well as some methodological considerations.

References:

knowledge; commoning mobility; feminist planning; care

SS_17 PERSPECTIVES ON COMMONING MOBILITY AND ACCESSIBILITY / 2059

Commoning for post-growth mobilities? A critical perspective on two railway cooperatives

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Recent post-growth scholarship has begun to problematize the strong growth orientation in transport planning, with new investments in transport serving primarily as ‘spatial’ or ‘mobility’ fixes, rather than serving other socio-ecological objectives. However, it has done so in ways that reproduce public sector-led and/or individual mobility transformations. It has thereby overlooked a wide range of community-led bottom-up initiatives, limiting the breadth of possible alternative solutions to enable post-growth mobilities. This paper addresses this gap by critically assessing the role of transport cooperatives as ways to ‘common mobilities’, with both cooperatives and the commons/commoning often claimed as strategies particularly suitable to post-growth. In particular, it builds on interview data and participant observation to examine two railway cooperatives, Railcoop in France and Go-op in the UK. This paper analyses their potential for post-growth mobilities by drawing together commoning scholarship with a nascent body of post-growth transport and mobilities literature, assessing commoning dimensions around access, use, benefit, care and responsibility along with the external risk to be ‘enclosed’ as further ‘mobility fixes’ fuelling economic growth. It foregrounds the importance different transport modes’ material specificities (here: trains and train tracks) in enabling and/or limiting the potential for post-growth mobility commons by shaping (a) affordability, rendering cooperatives more vulnerable to outside pressures, limiting access, uses and benefits (b) the dominance of national governance regimes of different transport modes, limiting autonomous decision-making within cooperatives and (c) the degree of expertise necessary to participate in decision-making, rendering them vulnerable to unequal (care) responsibilities.

Keywords:

commoning; cooperative; post-growth; materiality; expertise

SS_17 PERSPECTIVES ON COMMONING MOBILITY AND ACCESSIBILITY / 2060

Understanding Commoning Accessibility in the Context of the European Welfare State

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This paper critically situates the notion of ‘commoning accessibility’ within the wider context of the changing European welfare state. In many peripheral areas across Europe accessibility is under pressure due to the privatization and deregulation of public transport, the enclosure and commercialization of public spaces, and the withdrawal of services such as healthcare. Recently, the notion of ‘commoning accessibility’ (CA) has been introduced to account for the various ways in which communities mobilize and organize themselves to (re)claim accessibility as a common good. For example, through setting up community transport and shared mobility schemes or collective efforts to create and maintain place-based social, cultural and care amenities. Drawing on fieldwork conducted on CA practices in rural and peripheral areas in the Netherlands, this paper asks under what conditions commoning can play a critical and transformative role in improving access to important services. Whereas on the one hand the notion of commoning carries the potential of radically transforming planning and policy paradigms by denaturalizing private ownership and recentering values such as sociality and care, CA practices are also –inevitably– a product of larger policy conditions and agendas. Indeed, it could be argued that the need for these practices is very much shaped by the increased transfer of government responsibilities around public service delivery to citizens, as part of changing configurations of the welfare state. This paper speculates about how to retain the critical potential of commoning accessibility as a concept when understood as part of this wider trend towards the responsabilization of citizens.

Special Session 18 | SMART CITY AS A TRANSFORMATIVE APPROACH? CONCEPTUALIZING DIGITAL TOOLS IN SPATIAL DEVELOPMENT IN A CONTEXT OF AGEING

SS_18 SMART CITY AS A TRANSFORMATIVE APPROACH? CONCEPTUALIZING DIGITAL TOOLS IN SPATIAL DEVELOPMENT IN A CONTEXT OF AGEING / 1977

Utilisation and evaluation of activity opportunities by baby boomers. Challenges in rural, suburban and urban areas

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The baby boomer cohort, which makes up around a quarter of Germany's population, is gradually retiring. Individual time budgets are changing radically as a result; activities that were previously assigned to 'recreation' and 'leisure' (e.g. active sports, shopping, excursions) determine everyday behaviour and mobility. Additionally, the advancing digitalisation of almost all areas of life is opening up new opportunities in urban and rural areas, changing everyday practices and spatial relationships, e.g. through platform-economy, booking services and e-commerce (Parker, et al. 2016). At the same time, it can be assumed that hobbies and activities will be retained during the transition to retirement and adaptation to the new phase of life (Kohli, Künemund 2000). In municipalities, the ageing population and digitalisation pose new challenges. Comparatively little is known about the assessment of activities, neighbourhoods and communities by baby boomers and the consequences for local stakeholders.

This article focuses on the following questions: Which municipal services are used by baby boomers and how are they evaluated? How do baby boomers deal with digital services and tools? What socio-structural and spatial differences are evident and can population groups with a high level of dissatisfaction be identified? The aim of the article is to analyse what action is required to improve the participation of baby boomers in different settlement areas.

The data basis is a representative survey of 50- to 75-year-olds, conducted by the Department of Urban Sociology in 2022 as part of the project 'Ageing Smart - designing spaces intelligently' in seven municipalities (rural, suburban, urban) in three federal states (see www.ageing-smart; funded by the Carl-Zeiss-Stiftung).

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Parker, G.; Van Alstyne, M. V.; Choudary, S. P. (2016): Platform revolution: how network markets are transforming the economy -and how to make them work for you. New York: W.W. Norton.

Keywords:

Babyboomer; urban; rural; suburban; opportunities; activities; leisure; digitalisation

References:

Kohli, M.; Künemund, H. (Hrsg.) 2000: Die zweite Lebenshälfte. Gesellschaftliche Lage und Partizipation im Spiegel des Alters-Survey, Opladen: Leske+Budrich.

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SS_18 SMART CITY AS A TRANSFORMATIVE APPROACH? CONCEPTUALIZING DIGITAL TOOLS IN SPATIAL DEVELOPMENT IN A CONTEXT OF AGEING / 1929

Smart cities and transformative action: Conceptualizing smart cities for an ageing society in the Japanese planning culture

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Today, all over the world many cities are applying smart solutions, and position themselves as Smart Cities, but how are Smart Cities conceptualized in different planning cultures? Spatial planning systems are based upon different institutional and cultural conditions. While these may present comparable features, these planning systems were designed to operate in distinct cultural, normative and spatial situations (Pallagst 2010). Research by Sorensen (2015) suggests that planning cultures might change when faced with “critical junctures of institutional change and innovation in planning systems” (Sorensen 2015). One of these critical junctures might be the context of digitalization. In order to conceptualize planning cultures and digitalization, the authors suggested a research frame involving digitalization in the facets and layers of planning culture (Pauly and Pallagst 2023). The research on changing planning cultures in view of digitalization is a novel field, and - in general - implementing Smart Cities already might have initiated changes in planning cultures, which is one of the main hypotheses of this paper.

When looking at the Japanese planning culture, the planning system is highly centralized with a focus on economic development and market orientation (Martinez-Fernandez et al. 2016; Pallagst et al. 2018). Plans, programs and policies are developed on national level, and the implementation appears to be strictly top down. Moreover, the Japanese planning culture is challenged by several societal transitions. In particular preparing for disasters and for demographic change and the path towards an ageing society have longstanding impact on policy-making in Japan. For this reason, the planning cultural context needs to involve societal aspects such as the aspect of ageing.

Yet how are smart cities conceptualized in the Japanese planning culture, what are the main drivers and goals, who are the main actors, and which policies are at hand? And -given the societal context of demographic change and ageing in Japan -how is the aspect of ageing taken into consideration in the concept of smart cities in Japan?

This presentation will shed light on conceptualizing smart cities in the Japanese planning culture. Starting with a brief introduction to the concept planning cultures with a special emphasis on Japan, it will present cases of smart cities in Japan, trying to answer the questions outlined above.

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SS_18 SMART CITY AS A TRANSFORMATIVE APPROACH? CONCEPTUALIZING DIGITAL TOOLS IN SPATIAL DEVELOPMENT IN A CONTEXT OF AGEING / 1992

Decision support systems as a tool for better comprehensive planning

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Planning tools are becoming increasingly digital (e.g. Bielik et al., 2021; Streich, 2011). But there are still several gaps between analysis tools (mainly with GIS, but also CAD) and design tools (mainly with visualization programs or CAD). At the same time, demographic and other social data as well as spatial data are increasingly differentiated and available at different scales (e.g. Liao et al., 2018; Statistisches Bundesamt, 2022). For this reason, it is important to create a comprehensive planning tool, in our case a Spatial Decision Support System (SDSS), in which the various data and planning tools merge with one another.

One of the aims of spatial planning is to best meet the needs of different population groups and to promote a high quality of life. To do this, planners need to have a comprehensive and detailed understanding of the existing situation and local demand trends. There are already several software applications that can be used to perform insightful analyses of different topics such as population development (e.g. SPSS, R, GIS), infrastructure facilities (e.g. GIS, AutoCAD, InfraWorks) or building typologies (e.g. GIS, UrbanSim, Revit). However, they are often complicated to use, expensive or difficult to configure individually.

This article examines the requirements that local authorities and planners place on a SDSS, as well as its capabilities and limitations. Based on the results of the literature review, the analysis of different use cases and the results of requirements workshops in the model communities as part of the Ageing Smart research project, a number of insights have been gained, e.g. on the consequences of demographic change for social infrastructures. The Ageing Smart project is funded by the Carl Zeiss Foundation.

An analysis of different applications such as the geographic information systems QGIS and ArcGIS Pro or decision support systems such as DaviPlan shows, that the range of possible applications is very broad and that the way they are used varies. For example, more expensive applications often already include basic data such as settlement structures and transport networks, usually in good quality. Free applications usually require users to import this data themselves.

In addition, integrated urban development concepts are not prepared in such a way that the results can be easily integrated into a SDSS. However, in many cases this could be changed by making minor adjustments during the preparation process. A standardized approach to the “basic data equipment” of municipalities would also be extremely important. In the case study of the city of Mannheim, we analyzed, how analysis tools, planning instruments and design concepts could better fit together in the future –to create a comprehensive and effective planning tool for city administrations and decision-makers.

The use of decision support systems is essential for a good, needs-based planning. However, users need to be aware that using them is not enough. They serve as a tool for planners to prepare decisions that can then be evaluated by committees and citizens. In the future, such systems will become much more important for a comprehensive and integrated urban development.

Keywords:

Integrated urban planning; Planning tools; Site planning; Decision Support System

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SS_18 SMART CITY AS A TRANSFORMATIVE APPROACH? CONCEPTUALIZING DIGITAL TOOLS IN SPATIAL DEVELOPMENT IN A CONTEXT OF AGEING / 2027

Smart regions in an ageing society - new challenges for spatial planning in relation to healthcare

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The issue of healthcare has become a more important topic for spatial sciences and spatial planning in recent years, not only due to the Covid-19 pandemic, but also due to an increasing shortage of skilled labour. In addition to various approaches to preventive health protection and health promotion, it is also increasingly about ensuring equal living conditions and basic outpatient care for the population in all regions.

This article presents the development and status of a digital decision support system for political decision-makers at local and supra-local level for outpatient healthcare, which was developed as a component of a more complex decision support system in the project 'Ageing Smart - designing spaces intelligently' funded by the Carl-Zeiss-Stiftung (see www.ageing-smart; funded by the Carl-Zeiss-Stiftung). It includes (1) a data-supported analysis of the existing situation / initial situation (development and structure of the population including the household structure and forecasts, existing healthcare provision and forecasts), (2) a dynamic, intermodal accessibility analysis of healthcare facilities, (Stiewing et al. (3) a survey of the affected population on the healthcare situation (here using the example of baby boomers in four model municipalities) and (4) a collection of possible analogue and digital options for action and, hopefully in the future, the possibility of visualising the effects of these in order to be able to discuss and assess different scenarios for action.

The decision support system should also contribute to supporting smart, data- and fact-based planning and political decisions in times of increasingly 'alternative' facts and opinion-based politics (cf. Wiechmann et.al 2024). It also represents an approach to positioning spatial planning more strongly as an actor in this field (cf. ARL 2023) and to qualifying participation processes through a good database and simple visualisations of solution approaches.

Keywords:

smart region; planning support system; public health; demographic change

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SS_18 SMART CITY AS A TRANSFORMATIVE APPROACH? CONCEPTUALIZING DIGITAL TOOLS IN SPATIAL DEVELOPMENT IN A CONTEXT OF AGEING / 1990

Identifying climate-active green spaces with the help of artificial intelligence

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Man-made climate change is leading to an increase in average air temperatures. This has a particular impact on densely populated and sealed urban areas by intensifying the urban heat island effect. An important instrument for adapting the associated temperature changes is the development, preservation and establishment of green spaces in urban areas. The creation of a green space mapping system is essential for the inventory and further development of green spaces. However, the heterogeneity and diffuse distribution of green spaces in the spatial context make mapping them considerably more difficult. It is necessary to define the concept of green spaces. Subsequently, with reference to the challenge of a complete mapping of all green spaces on site, the extent to which such areas can be identified, delimited from each other and recognised as locally climate-active with the help of artificial intelligence can be investigated.

The initial definition of green spaces is carried out at a general level due to the heterogeneous nature and characteristics of the areas. Various scientific demarcations are used for this purpose. Based on this, they can be categorised as grass or shrub areas, water areas, large shrub areas and vegetation-free ground areas as well as existing trees. The defined green spaces are analysed using a pre-trained deep learning model to identify the general land cover.

The application of this pre-trained deep learning algorithm can identify green areas based on the general land cover. The best values are achieved for inner-city locations. However, the green areas located outside the built structures are often incorrectly delineated due to their nature and labelled as water areas, so that the pre-trained model achieves an overall accuracy of 46%. After assessing the results, the deep learning algorithm is to be retrained to potentially improve the model. Re-training the pre-trained deep learning model using transfer learning leads to a general improvement in overall accuracy to 78%. In this case, the retrained model has a higher level of detail in the assessment of out-of-town green spaces - inner-urban green spaces are identified more poorly compared to the pre-trained model. A subsequent combination of the modelling of the pre-trained and the post-trained deep learning algorithm leads to an overall accuracy of 86%.

Based on this, the climate activity of the green spaces is determined with the help of combination modelling. This is characterised by the potential cooling capacity of the identified green spaces using the proportion of shade, the ground surface and the absolute area size. The green spaces with low climate activity can be found in the heavily compacted and sealed inner-urban locations. With an increase in unsealed areas, the absolute area size and thus the climate activity increases from an initial cooling capacity of less than 1 K in heavily sealed areas to > 3 K in unsealed areas outside the settlement, which then also have a transfer effect beyond the actual green space due to the high cooling capacity.

Keywords:

Artificial intelligence; green spaces; urban planning; climate adaption; smart city

SS_18 SMART CITY AS A TRANSFORMATIVE APPROACH? CONCEPTUALIZING DIGITAL TOOLS IN SPATIAL DEVELOPMENT IN A CONTEXT OF AGEING / 1215

Ageing smart: A DSS for municipal health planning in an ageing society

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In recent years, the field of spatial science and spatial planning has seen a resurgence of interest in health-related issues. This development can be partly attributed to the impact of the pandemic and the ongoing demographic shifts, leading to a growing lack of skilled labour (see ARL 2023, p.14). This has long since ceased to be just about preventative health protection (keyword: health-related resilience) and the creation of health-promoting structures in line with the 'Health in all Policies' (HiAP) strategy. HiAP aims to integrate health as a societal responsibility across all policy domains, encompassing the provision of health infrastructures as a foundation for public health and health-related equality of living conditions. Although this approach is still in its infancy in Germany (Köckler and Geene 2022), there is an increasing focus on providing the population with healthcare infrastructure close to home and in line with their needs as a task of public services of general interest (ARL 2023, p.14). This commitment is further underscored by the most recent draft bill on fortifying healthcare provisions at the municipal level (GVSG), which, in its current iteration, outlines a pronounced expansion of municipal involvement in outpatient healthcare. Despite subsequent refinements in the legislative process, the issue of empowering local authorities to play a more active role in shaping healthcare at the local level remains salient. The question, therefore, is how local authorities can effectively fulfil this potential role.

Given this background, this contribution discusses a structured collection of possible municipal options for actively shaping healthcare provision, which was developed as part of a more complex DSS as part of the 'Ageing Smart - Smart structured areas' project funded by the Carl Zeiss Foundation (see www.ageing-smart.de). Building on the analysis and problem definition, the solution-orientated provision of possible options for action in the DSS represents the second step in decision support in the area of healthcare. The aim of this is to safeguard the status quo and avoid qualitative losses in healthcare provision as well as to avoid the threat of an increase in scale in the provision of services combined with a deterioration in accessibility. The options for action provided answer questions about different 'interventions' with corresponding recommendations for decision support and, if necessary, alternative futures as a consequence. In addition to the planning administration and municipal decision-makers, the addressees are also the providers of medical services. The DSS thus enables local authorities to recognise and evaluate options for action in the areas of healthcare, mobility, health promotion and prevention, and to implement them within the framework of various roles. The DSS is therefore not only a tool for data exploration, but also an instrument for actively finding and shaping solutions for existing or foreseeable gaps in care. The analysis and further development of healthcare provision can serve as a model for infrastructure development as a whole.

Keywords:

smart regions; planning support system; public health; demographic change

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Special Session 19 | CONTESTED ISTANBUL: URBAN DEVELOPMENT AND PLANNING CONFLICTS IN TURKEY'S 'ASPIRING GLOBAL CITY'

SS_19 CONTESTED ISTANBUL: URBAN DEVELOPMENT AND PLANNING CONFLICTS IN TURKEY'S 'ASPIRING GLOBAL CITY' / 2055

Exploring the Expropriation of an Urban Space through Lefebvre's Theory of the Production of space: The Case of Gezi Park (İstanbul)

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Henri Lefebvre's materialist-dialectical approach to capitalist production of space, taken together with his engagement with revolutionary praxis, offers a possibility of critical and radical intervention to planning theory and practice. While his vigorous analyses of the production of space find resonance in recent critical urban theory, the mainstream urbanism has been almost opaque to his contributions. For Lefebvre, the continuing renewal of capitalist relations hinges upon domination of space and production of space. Here, spatial planning undertakes a major role backed by the state-capital alliance. The locus of the radical praxis would be the dialectics between appropriation and domination of space, between use value and exchange value, between abstract space and social space. These are the dialectical contradictions to be resolved by attacking on capital.

In Turkey, the neoliberal state-capital alliance works in unbridled ways, against which the Gezi Park insurgence in May 2013 exemplifies a striking objection. As urban and non-urban spaces have been profoundly and unevenly reworked through neoliberal-entrepreneurial restructuring of the state and capital across the city, urban and non-urban spaces have been exposed to intensified and expanded expropriation and new enclosures. While capitalist relations penetrate into socio-spatial processes and exacerbate the deep-seated socio-spatial inequalities and crises across the globe, the mainstream planning practice resort to techno-scientism, pragmatism and ecological urbanism. Also, following the "communicative turn," the whole terrain of planning theory is rewoven by post-positivism, post-modernism and post-structuralism. Of course, planning in Turkey poses no exception regarding the reign of these mainstream approaches. We offer an intervention to this by elaborating on Lefebvre's three dimensional dialectics of the (social) production of space, focusing on how the Gezi Park (İstanbul) has been an historical issue of the socio-spatial contradictions of capital, state and society. We also examine and discuss the post-2013 transformation in Gezi Park and the adjacent Taksim Square, and how everything could be different from what it is, again based on Lefebvre.

SS_19 CONTESTED ISTANBUL: URBAN DEVELOPMENT AND PLANNING CONFLICTS IN TURKEY'S 'ASPIRING GLOBAL CITY' / 2056

Urban Conflicts and Movements in Istanbul from the Perspective of an Urban Citizen

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In 2004, an urban transformation process started in Maltepe district of Istanbul, with the Master Development Plan prepared by Istanbul Metropolitan Municipality for our neighbourhoods Gülsuyu and Güleusu. Gülsuyu and Güleusu are two adjacent gecekondu neighbourhoods that have been politically active. The year 2024 can be considered as a turning point for Istanbul since it was the beginning of urban transformation process for all the squatter settlements and dilapidated areas in Istanbul, such as Sarıyer, Sulukule, Tozkoparan, Kartal, Maltepe etc. The urban transformation projects that started in these neighbourhoods triggered resistance as a natural reflex. People living in these areas mobilized their right to housing and right to the city. Professional Chambers such as the Chamber of City Planners and the Chamber of Architects, Universities and neighbourhood associations came together. Numerous demonstrations, workshops and meetings took place.

In summary, Gülsuyu and Güleusu neighbourhoods have prepared alternative master plans and zoning plans in a participatory and collective manner since 2004, and today they are one of the most prepared neighbourhoods on the eve of transformation. It is the most organized neighbourhood with its headmen, associations and councils. In this presentation, I will share with you my experiences in these processes and my perspective as an urban activist.

SS_19 CONTESTED ISTANBUL: URBAN DEVELOPMENT AND PLANNING CONFLICTS IN TURKEY'S 'ASPIRING GLOBAL CITY' / 2082

Gendered Geographies of Fear and Urban Resistance in Istanbul: "Invisible No More!"

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Recent urban changes in Istanbul have reorganized not just physical areas but also the social fabric of daily life, all within the larger framework of authoritarian neoliberalism. The process and effects of this change, embodied in risk-based redevelopment, gentrification initiatives, and mega-projects, are profoundly gendered. This presentation examines how fear, mobility constraints, and socio-spatial marginalization impact women's urban experiences, drawing on feminist urban theory and current empirical research on Istanbul. It challenges the prevailing planning paradigms that make women invisible in creating and administering cities.

This presentation will focus on how women respond to discriminatory urban policies by creating resistance and micro-strategies. It interacts with the larger theme of conflict and contestation in Istanbul's urban planning by tying together the symbolic and material dimensions of space.

In doing so, the presentation asks how feminist insights might open alternative pathways for inclusive urban futures. It adds a gender-sensitive lens to the session's critical discourse on Istanbul as an "aspiring global city."

SS_19 CONTESTED ISTANBUL: URBAN DEVELOPMENT AND PLANNING CONFLICTS IN TURKEY'

S 'ASPIRING GLOBAL CITY' / 2018**Urban politics in "Post-Gezi" Istanbul and Beyond: Urban redevelopment, grassroots politics and mobilizations****Author:** Deniz Ay¹¹ *University of Bern***Corresponding Author:** deniz.ay@unibe.ch

The Gezi Uprising started as a localized urban protest against the redevelopment plans for Istanbul's Taksim Square, which sought to convert Gezi Park, a public space, into a private commercial development. In the context of post-2008 urban uprisings against austerity urbanism worldwide, the Gezi protests quickly evolved into a nationwide mobilization against the government's authoritarian tendencies. Although the uprising emerged as a reaction to the commodification and enclosure of public space, politically unorganized urban protestors temporarily created ad hoc urban commons within and beyond Gezi Park. While the protestors' primary demand was met by preserving the park, Gezi has since become a symbol of bottom-up, oppositional urban politics and claim-making. Within the context of the special session on "Planning and Conflicts in Istanbul," this paper demonstrates how "post-Gezi" urban politics continue to uphold certain values of localized resistance to profit-driven urban redevelopment projects, yet remain fragmented and marginally unorganized. I also aim to reflect critically on the gap between scholarly analyses, political discourse, and lived experiences of post-Gezi urban politics. This self-reflexive approach will contribute to discussions with fellow panelists on the future of grassroots resistance to urban enclosures and the possibilities of institutionalizing such resistance through urban commons and by rethinking the "public" to demonstrate alternatives to growth-oriented urbanism. Finally, this paper aims to put forward a conceptual question of where uprisings begin and end by building on the rich scholarship on commons to challenge the notion of "post-Gezi" regarding urban politics in Istanbul and in Turkey more broadly.

Keywords:

urban enclosures, urban uprising, Gezi Protests, commons, commoning

Special Session 20 | CHANGING THE STREET-SET: FROM TACTICS TO STRATEGIES, FROM STREETS TO CITIES AND BEYOND

SS_20 CHANGING THE STREET-SET: FROM TACTICS TO STRATEGIES, FROM STREETS TO CITIES AND BEYOND / 1941

Rehearsal to Permanent: Transforming Urban Area Using Tactical Urbanism as a Tool

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Street experiments are a crucial tool in enhancing the efficiency of urban planning processes, contributing to the creation of livable and functional cities through participatory approaches. Often known as tactical urbanism, experimental urbanism, or do-it-yourself urbanism, these efforts allow for real-time testing of ideas and concepts to assess their impact on urban environments. Maltepe Municipality in Istanbul has embraced these approaches with notable success, particularly through two key projects: the Zümrütevler Tactical Urbanization Project and the Yalı Neighborhood Tactical Play Street Project. Both initiatives included temporary design interventions, followed by permanent transformations based on user feedback and analysis.

Zümrütevler project marked the first tactical urbanism initiative in Maltepe, targeting a neighborhood with a high population density and a lack of accessible urban public spaces. The project successfully created a safe and healthy public space that caters to the most disadvantaged groups in the community, transforming the area into a place where people can gather, relax, and engage with one another.

Similarly, the Yalı Neighborhood, which was primarily used by children and their caregivers, underwent a transformation into a child- and pedestrian-friendly play street. Despite its proximity to public transportation, the area had limited safe spaces for children to play. After the success of the temporary intervention and with minor adjustments, the design was made permanent, creating a space where children and families can safely enjoy their surroundings. Both projects exemplify the power of tactical urbanism to address immediate urban challenges and enhance the quality of life for residents, making cities more inclusive and accessible for all.

Keywords:

Street Experiments; Tactical Urbanism; Participation; Inclusion; Temporary Design

SS_20 CHANGING THE STREET-SET: FROM TACTICS TO STRATEGIES, FROM STREETS TO CITIES AND BEYOND / 1971

Up-Scaling Safe School Streets at the District Level: Programming for Üsküdar

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Üsküdar, a strategically located district on the Anatolian side of Istanbul, is one of the city's most densely populated areas, with a population of approximately 600,000 residents. Known for its robust educational infrastructure, featuring over 200 schools and kindergartens, it has become a highly sought-after area for families seeking to raise and educate their children. In 2024, the district's new administration embarked on a transformative vision aimed at creating a child- and play-friendly environment. The Üsküdar Municipality adopted a strategic framework underpinned by principles such as inclusivity, safety, accessibility, play value, and sustainability, with these principles serving as the foundation for a child-friendly urban transformation.

A key initiative under this vision is the "Safe School Streets" project, which seeks to enhance accessibility and promote independent mobility for children. This innovative initiative aims to design safer, more accessible, and livable school environments by incorporating child- and pedestrian-friendly urban design solutions. Through this project, the municipality strives to empower children to experience urban life independently while ensuring their safety and enjoyment as they travel to and from school. The initiative reflects broader principles of creating liveable cities, focusing on making urban spaces more inclusive and accessible for young residents.

The project began with a comprehensive study of school zones across Üsküdar, identifying 10 priority areas for transformation based on environmental conditions, student density, and other key parameters. The first three pilot projects were selected through a SWOT analysis and implemented across three different neighborhoods, showcasing various design typologies. These pilot projects serve as valuable case studies, and the lessons learned from their implementation will inform the design and decision-making processes for future transformations. The upcoming projects will adhere to these design typologies, while allowing for flexibility to adjust based on the unique characteristics of each neighborhood.

The insights gained from the 10 pilot implementations will culminate in the development of a holistic planning and design framework that will guide the transformation of school streets across the Üsküdar district. This framework will be further detailed in a "Safe School Streets Guide," which will provide a comprehensive directive for the management of the Üsküdar Municipality. This guide will ensure that the principles of safety, inclusivity, and accessibility continue to shape the urban landscape, fostering an environment where children can move freely and safely throughout their neighborhood. Ultimately, the Safe School Streets project represents a critical step toward transforming Üsküdar into a model district for child-friendly urban development, promoting healthier, more sustainable, and more equitable communities.

SS_20 CHANGING THE STREET-SET: FROM TACTICS TO STRATEGIES, FROM STREETS TO CITIES AND BEYOND / 2005

Reclaiming Streets for Children, Communities, and Climate: Regional Learning Circles Driving Change

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The Reclaiming Streets Program, led by the Marmara Municipalities Union (MMU)—a regional association representing over 190 municipalities across the Marmara region—through its Local Government Academy, is a hands-on learning initiative launched in 2022. Developed in collaboration with Superpool and the Global Designing Cities Initiative (GDCI), the program aims to transform urban streets into vibrant, pedestrian-friendly spaces. By prioritizing people over vehicles, it places special emphasis on creating safer, more inclusive environments for children and caregivers.

Through a combination of training sessions, data collection, hands-on workshops, and real-world interventions, the program fosters collaboration among municipalities and municipal departments, equipping them to navigate the complexities of street design, public engagement, and financial planning. By leveraging tactical urbanism and a phased design approach, the program enhances participation, budgeting, and implementation processes, providing municipalities with practical strategies for interim and final street transformations.

A crucial step in street transformation, interim implementations use easily obtainable, flexible materials provided by municipalities to create temporary interventions. These projects utilize tactical urbanism tools and actively engage communities in the design process. Interim implementations allow municipalities to test project effectiveness before moving to final, permanent transformations by collecting pre- and post-implementation data. Final interventions, in contrast, often involve removing hard surfaces, incorporating sustainable, permeable materials, and introducing greenery to create resilient, climate-friendly public spaces.

Each year, the program opens a call for applications, selecting municipal teams that bring together multiple departments—including strategic development, planning and projects, transportation, and parks and recreation. These interdisciplinary teams participate in a six-month learning program, where they gain expertise in street design fundamentals and tactical urbanism, collect data, and develop plans for interim interventions based on their findings. After implementing these interim interventions, they reassess data, refine designs, and proceed with final transformations backed by greater financial resources.

By bringing together municipalities of different sizes and from various cities, each program cohort fosters collaborative learning, similar to urban planning education. This peer-to-peer exchange strengthens problem-solving skills and knowledge-sharing among teams. Additionally, MMU's Mentor Program enhances this process by connecting different cohorts, allowing experienced municipalities to share their insights and lessons (un)learned with newcomers.

To date, the Reclaiming Streets Program has engaged 16 municipalities across the Marmara region, successfully transforming 15 streets in five cities through tactical urbanism-based interim interventions—one of which has evolved into a permanent transformation. These interventions have significantly improved urban environments by enhancing safety, accessibility, and inclusivity for residents.

Beyond equipping cities with essential skills and knowledge, the program plays a pivotal role in strengthening urban resilience and fostering a people-centered approach to street design. This paper will examine the tangible outcomes of these efforts, highlighting both successes and setbacks. It will explore the effectiveness of tactical urbanism as a complementary strategy to long-term city planning and assess how local, small-scale interventions can serve as catalysts for broader regional transformation.

Additionally, the paper will investigate whether short-term tactical interventions can evolve into sustainable, long-term urban solutions. Another key question it will address is: Can urban planning education extend beyond academia and seamlessly integrate into professional practice through hands-on learning programs that culminate in real-world transformations?

Keywords:

Child-friendly cities; street transformation; tactical urbanism; local action

SS_20 CHANGING THE STREET-SET: FROM TACTICS TO STRATEGIES, FROM STREETS TO CITIES AND BEYOND / 1980**Designing Safer School Zones: Bridging Immediate Needs and Long-Term Urban Solutions****Author:** Beyza Gürdoğan¹**Co-author:** Hayrettin Günc²¹ *Superpool*² *Senior Program Manager***Corresponding Authors:** bgurdogan@superpool.org, hayri.g@gmail.com

Change is rarely straightforward and is often met with resistance, especially in complex urban settings. To address these challenges, cities are increasingly adopting tactical implementation methods—small-scale, testable interventions that are backed by data-driven insights. These approaches allow for real-time testing, evaluation, adaptation, and appropriation, providing the evidence needed to drive larger, transformative urban solutions.

Superpool, a research-based design studio, collaborates with municipalities to apply these strategies, creating safer, more accessible streets for children, families, and communities. In partnership with the Istanbul Metropolitan Municipality's Directorate of Transportation, Superpool conducted a comprehensive field study to advance the Safe School Zones Policy and assess safety conditions around Istanbul's school streets. The study, encompassing 43 public elementary schools, 73,830 students, and 1,844 parents, revealed alarming infrastructure deficiencies: 44% of schools have sidewalks narrower than 1.8 meters, and 53% lack essential crosswalks, intensifying safety risks. Despite 72% of caregivers preferring walking as a convenient and affordable option, only 10% feel that current conditions make it a safe choice. The daily congestion surrounding Istanbul's primary schools—marked by overcrowded streets, traffic gridlock, and parents navigating through moving vehicles with their children—underscores the critical need for safer school zones.

Designers act as mediators in implementing tactical interventions guided by robust data collection and analysis. Superpool, leveraging its extensive field research, translates raw data into actionable, context-sensitive solutions. Through collaboration with multiple cities, the studio serves as a facilitator, aligning community needs with municipal objectives to develop scalable, evidence-based interventions. These interventions empower designers, policymakers, and communities to co-create school streets as safer, more inclusive public spaces. Agile, data-driven strategies enable interventions to remain responsive to local needs while fostering long-term urban improvements.

Furthermore, research-based design studios play a significant role in integrating tactical interventions within broader policy frameworks. By linking immediate safety concerns with long-term urban development goals, such studios may contribute to the development of adaptive and scalable strategies that promote equity and sustainability. However, it remains open to discussion whether designers can effectively mediate between short-term solutions and systemic change, and how they might contribute to the creation of more inclusive and sustainable urban environments in the process.

Keywords:

Tactical Urbanism; Safe School Zones; Data-Driven Design; Designer as Mediator

Special Session 21 | INNOVATING PLANNING EDUCATION IN THE AGE OF AI EMERGENCE

SS_21 INNOVATING PLANNING EDUCATION IN THE AGE OF AI EMERGENCE / 2077

The age of Artificial Intelligence and education with humanism

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The rapid development and application of artificial intelligence (AI) has radically transformed our conception of planning and what the planning profession can achieve. AI has enabled new, and in many cases more accurate, ways to make predictions, more efficient design modeling, and streamlined data gathering. When used appropriately, AI can contribute to more robust decision-making, revealing its vast potential as a tool capable of achieving outcomes that were previously unattainable or too resource-intensive to accomplish. For planning education, this presents a clear imperative: to teach students how to use AI to solve problems, emphasizing AI's role as a tool.

However, the mission of planning educators goes beyond simply teaching students technical know-how. As John Dewey argued, education should be about helping students realize their potential—developing their capacity for situational problem-solving that aligns with their personal goals. To clarify the type of capacity we are referring to, it is helpful to invoke Aristotle's typology from *Nicomachean Ethics*. Aristotle differentiated between two types of wisdom: technical wisdom (*techné*), which focuses on using tools to achieve a specific end, and practical wisdom (*phronesis*), which is about determining the right ends and choosing the appropriate tools to use in a given situation.

Teaching students how to use AI to achieve specific goals clearly falls within the realm of technical wisdom (*techné*). Yet, the rise of AI also provides educators with the opportunity to foster the development of students' practical wisdom (*phronesis*). The development of practical wisdom—making sound judgments about what is right in a given situation—has long been advocated as something best achieved through case-based pedagogy, as demonstrated in programs like those at Harvard Business School. In this context, AI creates new possibilities for more efficient, tailored case-based simulations that can meet the specific needs of planning curricula.

A central question, however, is whether AI-generated case studies can effectively simulate real-life situations. Drawing on Herbert Simon's pragmatist ideas on simulation, this presentation argues that even if AI-generated cases are not perfectly realistic, they can still serve valuable pedagogical purposes if properly supervised by experienced educators and tailored to meet specific learning objectives. The emphasis on AI's capacity to generate case studies is not intended to replace teaching students how to use AI but to complement it.

To strengthen planning as a professional discipline, it is essential to provide students with both the general professional knowledge required to use AI and the practical wisdom to make informed decisions in their professional and personal lives—whether or not AI is involved. This balanced approach will ensure that future planning graduates are not only skilled in using advanced tools like AI but are also capable of exercising judgment and making wise decisions in the increasingly complex real-world situations they will face.

SS_21 INNOVATING PLANNING EDUCATION IN THE AGE OF AI EMERGENCE / 2074

Positive Energy Districts, Energy Communities and AI: Synergies, Contrasts, and Benefits for Urban Energy Systems and Areas

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Urban energy systems are undergoing profound structural transformations driven by decarbonization policies, digitalization, and demands for more democratic and inclusive governance. In this context, Positive Energy Districts (PEDs) and Local Energy Communities (LEC) have emerged as key paradigms in the pursuit of climate-neutral cities. PEDs aim to generate more energy than they consume through spatially integrated design, technological efficiency, and centralized coordination at the district scale (Casamassima et al., 2022); (Kvasnica & Vařková, 2022). In contrast, (Local) Energy Communities prioritize citizen empowerment, local ownership, and collective management of renewable energy resources, operating through decentralized, often bottom-up governance structures (Volpe et al., 2024).

At the same time, Artificial Intelligence (AI) is becoming increasingly embedded in urban energy planning and operations. AI tools are used to monitor, simulate and optimize energy flows, forecast consumption patterns, and support real-time decision-making (Han et al., 2023). These technological developments are not value-neutral: they reshape power dynamics, influence design processes and raise new ethical and regulatory challenges for planners.

This paper critically examines the tensions and complementarities between PEDs, Energy Communities, and AI systems. These converging trends are reshaping the competencies and roles required of urban planners, calling for an urgent rethinking of planning education. Traditional curricula often remain siloed, technocratic, and insufficiently responsive to the complexity of today's urban energy landscape. There is a pressing need to equip future planners with new forms of literacy—energy literacy, digital literacy, and socio-technical systems thinking—that enable them to work across disciplines, engage with communities, and navigate uncertainty (Gondeck et al., 2024); (Kozłowska et al., 2024).

The contribution argues that integrating these paradigms into planning practices is not merely a technical update, but a paradigm shift in how planning itself is taught and practiced. Preparing planners to mediate between centralized and decentralized energy logics, to critically engage with AI tools, and to foster socially just transitions is essential to building sustainable, inclusive, and resilient urban futures.

This work is carried out within the European project DUT 4A4PEDs - DUT Joint Call 2023 - "MUR funding, application code DUT23_00117".

Keywords:

Positive Energy Districts; Energy Communities; Artificial Intelligence; Power dynamics; Urban

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SS_21 INNOVATING PLANNING EDUCATION IN THE AGE OF AI EMERGENCE / 2075

Innovating Planning Education in the Age of AI: Bridging Technology and Urban Futures

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As artificial intelligence continues to reshape industries and societies, the field of urban planning stands at a transformative crossroads. In this presentation, Paulo Silva will explore the integration of AI into planning education, emphasizing its potential to revolutionize both pedagogical approaches and practical applications. By addressing questions such as how planners can harness AI to tackle complex urban challenges and how educational institutions can prepare future professionals to engage critically and ethically with these technologies, Silva will outline a vision for a forward-thinking curriculum.

The talk will also highlight real-world examples and case studies where AI tools have been successfully incorporated into urban planning practices, demonstrating their implications for governance, sustainability, and community engagement. Attendees will gain insights into the skills and competencies needed in this rapidly evolving landscape, ensuring that planning education remains relevant and impactful in the age of AI.

SS_21 INNOVATING PLANNING EDUCATION IN THE AGE OF AI EMERGENCE / 2078

Innovating Planning Education in the Age of AI Emergence

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The rapid emergence of artificial intelligence (AI) has strongly impacted various fields, including education, reshaping how students and educators approach knowledge creation and application in urban planning. In planning education, AI is increasingly being integrated into student work, from writing assignments to the visualization of future-oriented studio projects. While this presents vast opportunities, it also introduces critical challenges that educators must address proactively.

Instead of enforcing restrictive rules against AI use, educators could think of adopting open communication with students, encouraging them to critically evaluate the knowledge and outputs generated by AI tools. Teaching students how to identify biases, inaccuracies and limitations in AI-generated content equips them with the ability to use AI as a supportive resource rather than a sole authority. However, prevalent reliance on AI for tasks like writing poses the risk of diminishing essential skills such as literature reviewing, critical reasoning and effective communication. Moreover, the use of AI in visualization

and depiction tools for studio projects has transformed how students convey their visions for future spaces in between scales. While these tools comparatively simplify the process of conveying ideas, educators must remain cautious about understanding the capabilities and limitations of such technologies. Lecturers play a fundamental role in guiding students to control these tools in ways that enhance creativity and critical thinking, ensuring that AI complements rather than replaces the intellectual consistency of planning processes.

Keywords:

AI in Education; Planning Education; Critical Thinking; AI Visualization

SS_21 INNOVATING PLANNING EDUCATION IN THE AGE OF AI EMERGENCE / 2073

Pioneering Intelligent Design for Future Cities

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The presentation highlighted a comprehensive framework encompassing intelligent diagnostics, simulations, configuration, and creative design. From enhancing water security and ecological resilience in Wuhan to optimizing spatial layouts and generating innovative urban features, the talk demonstrated how AI empowers urban development with precision, efficiency, and sustainability.

Wu detailed cutting-edge applications, such as AI-driven ecological network simulations to mitigate urban heat islands, intelligent land value forecasting, and the configuration of innovation-centric spaces. By leveraging over 10,000 AI tools across 12 urban design stages, the team exemplifies how AI is not only augmenting traditional design processes but shaping a new paradigm for intelligent, adaptive, and human-centric urban environments.

This visionary discourse underscores AI's potential to craft smarter cities and invites global collaboration in the ongoing pursuit of future-ready urban design solutions.

Track 1 | POSTGROWTH URBANISM

T_01 POSTGROWTH URBANISM / 1633

Community ownership for degrowth

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In our research, we started looking at community ownership as specifically geographically defined communities having democratic control and ownership over land and buildings. In line with their long-term stewardship role, community landowners manage properties and dedicate their surpluses for the benefit of residents, other occupiers, as well as the wider community, and the environment. Community ownership and stewardship activities have been linked to affordable housing, or social infrastructures. We were interested in looking at the larger scale community ownership of a range of assets beyond land and housing, interested in deriving a set of principles for community ownership.

In doing so, we learnt about the value and potential community ownership has for postgrowth planning. Both through direct decommodification, there are important secondary effects in terms of community organizing, a focus on community health and wellbeing, generation of local employment, as well as climate change resilience. If we consider postgrowth to be the decoupling from market-based paradigm, along with the decoupling from carbon emission as well as reduction of throughput of resources along with the addressing of social and ecological (Savini 2022) then community ownership of a large range of different assets can be considered both as a set of prefigurative practices to inspire and replicate, but also able to generate the institutional infrastructures for scaling up.

Our paper presents the cases we looked at across the UK including the community ownership of land, housing, energy, transport, data, town centres, community centres, pubs, forests and agricultural projects –which spanned a large and diverse range of land-uses as well as activities. Through interviews with groups as well as umbrella support organisations, we developed a set of common principles for community ownership based on the notions of community being articulated and used, the sense of place, the diversity of scale, role of finance, importance of business models and revenue generation, forms of governance, value generation, and the policy as well as regulatory frameworks. What we would like to explore in this paper is the role these principles have in formulating community ownership as integral to postgrowth planning framing the relational and place-based approach needed for community ownership as part of a broader set of spatial planning and regeneration practices.

Keywords:

community ownership stewardship postgrowth planning

T_01 POSTGROWTH URBANISM / 1253

To Transport or not to Transport: Post-Growth Propositions for Transport Infrastructure Planning

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Post-growth planning is a call for focusing on wellbeing and health while staying within the planetary boundaries in a long-term perspective. We observe an increasing academic interest in the connections between post-growth or degrowth and infrastructure planning in academia, and now also in practice in countries such as the Netherlands. Infrastructure providers themselves are publicly exploring, through research and public debate, their role in a possible transition to a post-growth society and how they can use their existing instruments and tools to facilitate this transition. First tentative seeds underline a shifting self-understanding of infrastructure planning. Despite such potentials, “infrastructure studies represent a domain [...] significantly uncharted amongst degrowth scholars” (Pansera et al., 2024, p. 1). Post-growth has yet to make its way into the literature and practice of transport infrastructure planning, especially at the city-wide and supra-local level of larger infrastructure networks and their future transformations at large. We recognize this opening window of opportunity for utilizing post-growth planning to discuss and reposition the role of infrastructure providers and planners situated within them.

Keywords:

Infrastructure; Post-Growth Planning; Transport Planning; Circularity

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T_01 POSTGROWTH URBANISM / 464

Ecopolis. What does a post-growth city may look like?

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Ecopolis. What does a post-growth city may look like?

In the second decade of the century, Espon, the European Agency for territorial studies, conducted scenario studies on the future of the European city, examining three major

scenarios respectively named: Metropolis, Metapolis and Ecopolis. We consider that study still valid but currently it seems to have a weaker meaning as Espon aimed to synthesize them. From our perspective, it seems more preferable to choose and promote, among the three, the most just and sustainable one. We call this proposed model: the post-growth city. This cannot be a “fossil city”(Malm) based on the infrastructures of the fossil world; nor a city based on strong social, economic and power hierarchies, the unjust city (Harvey); nor a city dominated by alienation and a sick relationship between humans and nature (Latour).

At the same time, it must be capable to face all the contemporary challenges (Seto). The fundamental questions for a spatial planner consequently are: what dimension has this city? What shape? What economic structure?

First of all, it should be said that the city is no longer an “economic machine” like the Fordist metropolis (Metropolis), but not even an infrastructure to support traffic, mobility and logistics (Metapolis). The post-growth city is an ecosystem that balances human development and planetary sustainability. It must be, therefore, a living organism, in which humanity reconnects with the rest of nature and works collectively to build a more human and just future. In our research we propose the name of Ecopolis (Fabbro). The physical and social space of Ecopolis includes anthropic components (settlements), semi-natural spaces (for agriculture) and natural spaces (rivers, forests, meadows, etc.). It is supported by a dominance of vegetal and water ecosystems over the built environment. It is neither hierarchical nor monocentric and, therefore, has no single center and large peripheries but different structures.

Its form is ‘organic’ i.e. following the shape generated by its dominant geophysical (valleys, slopes, basins, the course of a river, coasts, uniform plains, etc.) and natural components (climate, air, sun exposure). It aggregates around or within a large natural ecosystem (a much biodiverse river, a valley system, etc.). Its metabolism is inspired on ecological dynamics, thus encouraging the flourishing of buffers (lakes, forests, other ecosystems) and harmonizing energy, and resource in and outflows to meet strong forms of sustainability and resilience, safeguarding the basic, vital functioning of spatial systems in the event of resource availability oscillations.

Its political economy can no longer be capitalist, not even in its most softened conceptions. Its political economic model is, coherently with its structure and shape, post-metropolitan (Soja), post-growth (Savini) and post-capitalist (Kohei). This does not mean that capitalist companies and market exchange no longer exist; they are rather not dominant. It implies a tripartite model (Polanyi) made up of (i) market regulation to avoid their excessive expansion, (ii) protection of land, people and labour from the destructive effects of commodification, (iii) promotion of forms of social economy closer to people and the Earth. Who builds this city-territory and how? It implies a broader reterritorialization capable of calling into question all the generative parameters of the modern city concept. It will therefore be necessarily reconstructed on the basis of a community ethos. Is Ecopolis a utopia? No, because Ecopolis already exists in many parts of the world but is suffocated by the effects of the “planetary urbanization” (Brenner). It must be recognized, made to re-emerge and be valorized.

Keywords:

Ecopolis; postgrowth; postmetropolis

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T_01 POSTGROWTH URBANISM / 521**Planning for conviviality****Author:** Luca Bertolini¹¹ *University of Amsterdam***Corresponding Author:** l.bertolini@uva.nl

Modern urban planning was born and consolidated as a means of managing, and thereby facilitating, urban and economic growth. The recent shift to the pursuit of 'sustainable' or 'green' growth still accepts this basic orientation. Today, emergent, 'degrowth' and 'post-growth' planning are instead fundamentally questioning the focus on enabling growth, in whatever form, following the acknowledgment that there are intrinsic, inescapable connections between the pursuit of growth and current social and environmental challenges.

Degrowth and post-growth planning are, however, faced by a dilemma. On the one hand, degrowth and post-growth planning narratives, while compelling, struggle to mobilize broad constituencies and impact planning practice. On the other hand, less compelling sustainable and green growth planning narratives, appear more appealing and applicable to many. One way out of this dilemma is the development of more broadly mobilizing and more readily applicable degrowth and post-growth planning narratives. Such narratives would still have to be firmly rooted in the acknowledgment of the entanglements of current social and environmental challenges with the pursuit of urban and economic growth, but at the same time, they would have to be able to convey hope to a broad public and generate concrete options for planners aiming at 'better places'.

I claim that Ivan Illich's 1973 'Tools for Conviviality' can provide one powerful inspiration for such a narrative, following recent applications in other fields, most notably in technology and energy. Illich was well-aware of the dilemma sketched above. He did not believe that a majority opposed to growth was feasible, or that an antigrowth minority, while feasible, was desirable. Rather, he saw a way out of the dilemma in the substitution of the dominant logic of industrial productivity with an alternative logic of 'conviviality', which he defined as the "autonomous creative intercourse among persons, and of persons with their environment". One essential notion he advanced is the distinction between two phases in the development of tools (technologies, institutions): a first, in which they are primarily means for the empowerment and liberation of individuals, and a second, in which they become primarily self-referential ends, ultimately oppressive and enslaving of individuals (as illustrated in, e.g., transport by the shift from bicycles and motorized public transport to mass automobility). A second, related essential notion is the need for continuous, democratic deliberation about, and scientific inquiry in the opportunities for new tools entering the first phase, and the risks of existing tools entering the second phase.

In this paper, I explore and articulate how both Illich's criticism of industrial productivity and his pursuit of conviviality can provide directions for a mobilizing, applicable narrative for planning beyond growth. I illustrate the argument with concrete examples from the topical domains of planning for mobility, housing, and energy, in their place-based interrelations, and discuss connections with similar undertakings in other fields.

Keywords:

Postgrowth planning; Degrowth planning; Tools for conviviality; Mobility; Housing; Energy.

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T_01 POSTGROWTH URBANISM / 549

Restoring socio-ecological balance in City-Port Areas. A conceptual framework for a circular and sustainable regeneration of coastal wastescapes integrating Nature-Based Solutions

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Research context

City-Port Areas (CPA) can be defined as multi-risk exposed environments characterized by high-complexity (Hein, 2016, 2018, 2023) and facing diverse intertwined challenges related to overlapping environmental, natural and anthropic risks. They are the first to experience the impact of climate change, being affected by resource scarcity and linear urban metabolism processes, showing difficulties to grow within socio-ecological limits and ecosystem boundaries. These challenges, that characterize the capacity of today's CPA to be future proof, are interconnected to the problems related to the supply of energy and materials, and to the availability of land for agricultural purposes and further developments.

Land in CPA is a scarce resource if connected to linear and thus unfunctional urban and territorial metabolisms as well as to unsustainable processes of growth. However, CPA are prone to become hot spots and hubs of innovation and incubators for circular solutions based e.g. on mitigation and adaptation measures (AIVP, 2018, 2021) and on regeneration processes through nature-based solutions (NbS) applied in the context of wastescapes (Amenta and van Timmeren, 2018).

Conceptual and methodological framework

To understand how to implement a transition towards circularity and sustainability for CPA, this contribution presents the methodological approach of the research SPArTaCHus (financed within the framework: "Programma per il Finanziamento della Ricerca di Ateneo FRA 2022", of the University of Naples Federico II, Corresponding proponent: Libera Amenta).

SPArTaCHus proposes a mixed method that combines insights from urban ecology, urban metabolism, ecological urbanism, and more-than-human perspectives for the regeneration of their wastescapes, understood as a system of underused or abandoned territories crossed by resource flows. To define circular strategies for alternative scenarios to cope with the intertwined contemporary challenges of CPA, this research emphasizes the urgent need to strike a balance between environmental goals, social equity and justice.

SPArTaCHus interprets CPA as promoters of circular and sustainable prosperity in equilibrium with nature through the adaptive management of their natural habitats. Being transitional landscapes, CPA both face ever-changing challenges from e.g., port activities, and offer a rich socio-cultural environment. Understanding the complex dynamics of CPA informs a path toward circularity, that can reconnect people, spaces, flows, economies, and ecologies.

Project's ambition

Research on City-Port Areas allows to move from local to global and back, understanding ports as knots (Lobo-Guerrero & Stobbe 2016), towards the multidisciplinary, multiscale and integrated concept of territorial metabolism (Grulois, et al. 2018). In this way, it is possible to focus on the mutual relationships between human activities, resource use and the effect of these activities on the built and natural environment, including the countryside, for boosting a sustainable and different kind of growth, and looking for design-driven strategies for implementing innovation in urban and social agendas (IABR, 2014). Implementing circular urban metabolism and economy principles can help create regenerative territories that operate within the planet's safe and just limits. Understanding that CPA are characterized by land scarcity and large amount of wastescapes, the project aims to set design and planning guidelines for a regenerative approach by working on soil resources that are often degraded, polluted or abandoned due to many factors, among which port-related activities which concluded their lifecycle. Wastescapes in CPA can be seen as the result of a linear process of an unequal growth,

as the port and the city follow different logics and planning time. This contribution critically examines how NbS can tackle the complex multi-risk challenges faced by CPA, using Rotterdam as a case study to highlight both the opportunities and challenges associated with circular transitions.

Keywords:

circular economy; urban metabolism; nature-based-solutions; wastescapes; City-Port Areas

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T_01 POSTGROWTH URBANISM / 1618

Urban Metabolic Risk: Rethinking Circular Urban Metabolism for Sustainable Regeneration Processes

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Urban metabolic risk refers to the cumulative negative impacts of urban metabolism, which undermine quality of life and create significant challenges for urban regeneration initiatives. In the context of post-growth urbanism, this concept offers a lens to explore how urban metabolisms can be reconfigured to sustain ecological balance and social equity, moving beyond growth-driven models of development.

This paper aims to define the different factors that determine urban metabolic risk by analyzing the case of Bagnoli-Coroglio, a multi-risk contaminated Site of National Interest (SIN) in Naples, Southern Italy. Bagnoli, historically an agricultural area that became an industrial hub in the late 19th century, exemplifies the socio-ecological disruptions driven by unsustainable urbanization. The closure of industrial activities in 1990 left behind severe soil and sea pollution and social fractures due to unemployment and loss of

identity; furthermore, the area has been waiting for a reclamation project for almost 40 years, making the site a paradigmatic example of metabolic risk.

Urban metabolic risk is not limited to the inefficiency in managing material and resource flows in cities and between urban and rural contexts at a regional level, but also considers the rebalance of human-nature relation, encompassing the broader alienation of humans from the natural environment, as conceptualized by Marx's metabolic rift (Moore, 2000). This rupture accelerates ecosystem degradation (Heynen et al., 2006), exacerbates socio-economic inequalities, and intensifies urban vulnerabilities, particularly in marginalized communities. While ecological dimensions of the metabolic rift are well-documented (McClintock, 2010), this paper emphasizes the often-overlooked social and political dimensions that hinder equitable regeneration processes.

By analyzing the site of Bagnoli-Coroglio, this research aims to identify and map the factors that contribute to metabolic risk and to define the planning tools, such as participative governance and circular planning models that may help mitigating urban metabolic risk while allowing more inclusive and environmentally sustainable urban systems. This study is part of the PE3 -RETURN project Task 5.4.4 - Circular Metabolism in Urban and Metropolitan Settlements.

Keywords:

Urban Metabolic Risk, Urban Regeneration, Circular Urban Metabolism

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T_01 POSTGROWTH URBANISM / 1100

Post-growth Redefinition of Urban Textures: The Changing Faces of Human Scale through Eminonu and Maslak Central Business Areas in Istanbul

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As cities move beyond growth-focused models, the connection between urban texture and human scale offers a clear way to design spaces that put people first. Historically, urban growth has often prioritized economic expansion and infrastructural development, leading to dense and sprawling urban forms. While this growth facilitated economic wealth and connectivity, it frequently resulted in the erosion of human scale which is the proportion and spatial qualities of urban environments designed to be comprehensible and comfortable for individuals. People's perceptions of urban life are greatly influenced by the layout of streets, buildings, and open areas. There has been a noticeable shift toward bigger and more standardized building designs that dominate the skyline in cities where growth has been the main priority. These frequently connect with broader streets that are primarily designed to accommodate vehicular traffic. As a result; the

sense of place, the sense of enclosure, and key features of spaces designed with human proportions are increasingly being lost. In post-growth urban contexts, re-establishing human scale involves rethinking the spatial relationships between cities and their residents. Narrower streets, diverse building typologies, and well-integrated public spaces are pivotal in creating environments that prioritize pedestrian movement, encourage social interaction, and enhance overall urban livability. The shift from growth to human-centered design also emphasizes quality of life over sheer expansion and contributes to the creation of inclusive and resilient cities.

This paper aims to explore how contrasting urban forms can inform the principles of post-growth urbanism over two extreme points of a grown and developed Central Business District axis of Istanbul: Eminönü (historical core with pedestrian-friendly organic streets) and Maslak (modern period development with vehicle-oriented streets and high-rise buildings). By examining these two abroad districts, the study uncovers how urban design choices shape not only physical spaces but also the social and experiential dimensions of city life. Comparative spatial analyses which are carried out within the scope of the study investigate the critical role of human scale in fostering walkability, social interaction, and a sense of community: Eminönü exemplifies the potential of human-scaled environments to enhance inclusivity and connectivity, while Maslak underscores the challenges of prioritizing economic expansion over social cohesion. This paper also proposes a framework for regulating urban density based on morphological parameters such as street width, building height, and street enclosure. The findings reveal that urban spaces designed with higher levels of street enclosure and balanced building proportions, as observed in Eminönü, enhance social interaction, a sense of place and community, fostering more inclusive environments. Conversely, Maslak's vehicle-oriented design and high-rise dominance highlight the limitations of growth-focused urbanism, emphasizing the need for a paradigm shift. By grounding theoretical perspectives in practical solutions, this study underscores the transformative potential of human-scale design in shaping resilient and equitable urban environments, offering clear strategies for urban planners to prioritize quality of life over expansion.

Keywords:

post-growth urbanism; human scale; urban texture; sense of place; Istanbul

T_01 POSTGROWTH URBANISM / 919

Post-Growth Paradigms Underpinning the Socio-Technical Transformation of Services: An Analysis of Three Municipal Planning Strategies in the Atlantic Region

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The development of urban infrastructures and services has historically followed a growth-oriented, path-dependent model, particularly in medium- and small-sized municipalities in peripheral European regions (Kirkpatrick & Smith, 2011; Næss, 2006). This trajectory, often reinforced by structural and economic changes linked to European Union integration, faces increasing challenges from environmental, social, and financial crises (Schneider et al., 2010; Jackson, 2009). These crises necessitate rethinking planning frameworks to address the unique constraints of medium-sized municipalities, often overlooked in favour of metropolitan and capital cities.

Post-growth and degrowth scholarship (Kallis, 2018) offers alternative approaches, emphasizing the need to decouple urban development from economic growth. While this

research explores pathways for infrastructure transformation, particularly in housing, transport, and networked services (Savini & Bossuyt, 2022; Durrant et al., 2023), most studies focus on large cities (Demaria et al., 2013; Cerrada Morato, 2024). Consequently, the dynamics of medium-sized municipalities, including their ability to adopt and implement post-growth principles, remain underexplored (Cerrada Morato, 2025). Addressing this gap, our study examines the intersection of post-growth paradigms and the planning tools used to drive socio-technical transformations in these contexts.

Using a socio-technical lens (Geels, 2005), we analyze three medium-sized municipalities in a peripheral European region undergoing service transformation. Each municipality operates under a distinct post-growth paradigm, providing insights into how these paradigms influence the design and implementation of transformation strategies. Our findings reveal that opportunities for socio-technical innovation and adaptation are deeply tied to the guiding post-growth paradigm, highlighting the importance of context-sensitive approaches.

Bringing conceptual clarity to the post-growth debate is critical for advancing theoretical and practical urban planning frameworks. Recognizing the diversity of post-growth paradigms and their interconnections is essential for avoiding one-size-fits-all solutions and fostering resilience in medium-sized municipalities. Moreover, this clarity supports the development of planning tools tailored to the specific needs of these municipalities, promoting equitable and sustainable service systems (Hodson & Marvin, 2010; Swilling, 2011).

This study contributes to post-growth discourse by emphasizing the value of context-specific strategies and advocating for a more inclusive approach that integrates medium-sized municipalities into academic and policy debates. It advances understanding of how post-growth paradigms drive socio-technical transformations in urban infrastructure and service provision, addressing critical gaps in theory and practice.

Keywords:

post-growth paradigms; services and infrastructures, socio-technical transformation; medium-sized cities

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Reconfiguring Underutilised Spaces: A Conceptual Framework for Advancing Spatial Circularity in London

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The escalating challenges posed by resource depletion, urban sprawl, and socio-spatial fragmentation demand a rethinking of urban systems. While the circular economy (CE) has emerged as a paradigm to decouple economic growth from resource consumption, its urban applications often reduce circularity to technocratic resource management, neglecting the spatial and social intricacies of everyday life. This study critically synthesises the literature on local circularity, underutilised spaces, and circular design strategies, constructing a conceptual framework for understanding how underutilised spaces may serve as drivers of spatial circularity in cities, with a particular focus on London.

The review begins by interrogating the concept of local circularity, positioning it as a spatially grounded extension of CE. Local circularity represents a shift from macro-scale, resource-centric models to site-specific, community-embedded practices (Kocaturk and Hosseini, 2023). Unlike macro-level models dominated by material flows, local circularity emphasises neighbourhood-scale interventions that integrate spatial, material, and social dimensions. However, current scholarship and policy largely frame circularity through technical and systemic approaches, sidelining the socio-spatial and territorial implications critical to its realisation in everyday urban life. This review argues that local circularity is not merely an extension of CE principles but represents a profound reimagining of spatial resources at the local scale.

The second section interrogates the role of underutilised urban spaces as latent resources within the circular city. The second section focuses on underutilised spaces, conceptualising them not merely as voids or remnants of planning failures but as latent resources for enabling circular practices. Drawing on Carmona's typology of urban spaces (Carmona, 2010) and subsequent studies, this research critically analyses how these spaces - negative, ambiguous, and residual - represent both the 'dark side' (Kevin Lynch, 1990) of urbanisation and an opportunity to renegotiate the spatial logic of cities (GLA, 2022). By integrating theories of latent potentiality and circular regeneration, the review underscores how these spaces could be leveraged to foster resource efficiency, social inclusion, and localised circularity.

The final section examines circular design strategies as an operational tool for reconfiguring urban space. Rooted in the principles of eliminate, regenerate, and circulate, circular design connects material flows with spatial configurations and social practices (EMF, 2021). Circular design is not merely an aesthetic or functional exercise; it is a boundary-spanning process that aligns socio-spatial practices with ecological imperatives. By advocating for a systemic, design-led approach, this research proposes that strategies such as adaptive reuse and temporary interventions can transform underutilised spaces into vibrant nodes of circularity.

Building on these reviews, this study proposes a conceptual framework for spatial circularity, structured around three interrelated components: (1) local circularity as the core, providing the socio-spatial foundation for integrating CE principles into urban contexts; (2) underutilised spaces as resources, reframing them as latent assets for circular practices; and (3) circular design as the operative mechanism, operationalising spatial circularity through tangible interventions. This framework synthesises diverse theoretical perspectives while offering a structured lens to guide future research and practice. This study contributes to the discourse on circular cities by addressing the underexplored intersection of CE and urban spatiality. The proposed framework reconceptualises space as the critical interface linking material flows, governance systems, and everyday practices, embedding circularity within the socio-spatial fabric of urban environments (Williams, 2021). By addressing theoretical gaps, it provides a structured pathway for operationalising CE principles through spatial interventions, particularly in underutilised urban areas in London and beyond. Future research must critically engage with the empirical and contextual dimensions of this framework to validate its adaptability across diverse urban settings.

Keywords:

Circular Economy; Local Circularity; Underutilised Spaces; Spatial Circularity

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T_01 POSTGROWTH URBANISM / 1071

Toward New Circular Urban Economies: Regeneration Models for the Ecological Transition of Cities. European Cases and Initiatives.

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At a time when climate change is showing its destructive force, with record high temperatures and environmental catastrophes, we need to look for an alternative approach to the current one that rethinks cities as living organisms and optimises processes rather than products, paying close attention to the management of urban flows so as to develop a more efficient urban metabolism.

In urban contexts, the linear management of resources (water, food, materials, energy) represents a development model that is no longer sustainable as it contributes significantly to aggravating environmental problems such as **resource depletion, ecosystem degradation, biodiversity crisis and loss of natural capital**.

It is possible to decouple economic growth from the use of resources and the environmental impacts they cause. This can be achieved by replacing the prevailing linear growth models with regenerative and circular models for the preservation and enrichment of urban ecosystems and biodiversity. To combat climate change and **reverse the current linear development model**, it is necessary to reconvert our production and consumption systems with appropriate economic, social, political and technological changes that go beyond conservation and restoration practices, in the direction of a paradigm shift in the way we produce, use and reuse products and resources (IPBES, 2019) **moving from an anthropocentric to an ecosophical vision** that shifts the focus from human beings to the ecosphere, integrating environmental, social and mental ecology for the creation of communities integrated with nature.

The article presents a scientific position with respect to the issues raised from an exhaustive screening of the scientific literature, technical policy reports, and research results at the European level, the paper maps and analyses **demonstration projects of urban regeneration with a circular transition perspective** that allows the definition of intervention scenarios marked by a renewed conception of urban planning characterised by the circularity of material and immaterial resource flows. The article discusses an alternative position in the debate on circular cities with the aim of integrating the themes of circularity, Nature-based solutions, climate change, well-being and health, and urban development to support both ecological balance and social equity.

The paper presents the theme of the **Circular Urban Economy**, which, through a proactive approach, encourages cities to implement circular measures that address socio-economic inequalities, promote social cohesion and improve access to urban resources, services and green and blue spaces. To this end, the article explores urban transition processes according to the principles of regenerative design, reinforcing the role of nature and the recirculation of local resources to transform degraded urban areas into ecosystems that enhance biodiversity, contrast climate change and improve the well-being and health of citizens. The main aim is to clarify **the role of architectural and urban design in the circular transition of cities**. In particular, through the analysis of selected case studies, the paper identifies the effectiveness of urban practices in which circularity is developed beyond purely economic interactions and eco-efficiency parameters, helping to define the potential of a circular degrowth city centred on inclusiveness, social justice and reciprocity. Circularity is not meant to be the final goal, but rather a tool to **create healthier, more inclusive and regenerative urban communities** that rely on closed material cycles to reduce their environmental footprint.

The article allows us to extrapolate a catalogue of technological and spatial solutions to be implemented in experimental design applications to guide the planning and sustainable design of future cities.

Keywords:

Circular design, Ecosystem services, Nature-based solutions, Regenerative design, Urban metabolism

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T_01 POSTGROWTH URBANISM / 1097

Navigating Regional Gaps, Cohesion Policy, and Geostrategic Security: Balancing Estonia's Urban System

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The paper explores regional gap scenarios balancing society-economy-environment domains amidst escalating uncertainties. The study exemplifies multiscale peripherisation of Estonia at EU external borders, with a strong impact on the urban system of depopulation, green deal, and the geostrategic security agenda. The latter has still been understated and remote in regional and cohesion research and policy support despite ongoing tensions. Also, the importance of governing with intent is becoming the mainstream, with an understanding of the anticipated impacts of new strategies, business

models, services, for example, remote work, digitalisation and platformisation (Oldbury and Isaksson 2023).

The study analyses the aggregate impacts of the scenarios on Estonia's territorial development and cohesion, including impacts on economic development, social well-being, cultural prosperity, land use, environmental sustainability, as well as defence and security. Based on the key axis of regional gap-balance, four scenarios are set: A. Metropolisation, B. Dispersed regionalisation, C. Small cities, and D. Growing by immigration, which all include sprawling, dispersed, and compact sub-scenarios. The scenarios are assessed on their impact on resource needs, consumption changes, and environmental pressures at six types of urban regions in their core, suburban hinterland, and rural hinterland. Four scenarios are compared by land take, housing stock, infrastructure requirements, industrial and logistics estates, retail and services, and home-work, home-services mobility. The causal chains, key drivers, and triggers of shrinkage and the regional gap, as well as the key policy packages and regional support to make the scenarios a future outcome, are elaborated.

Since the 1990s, there has been a massive depopulation of many regions across Estonia, with urban growth supported by neoliberal planning and agglomeration increasingly shifting to the Tallinn metropolitan region. Regional polarisation shapes new residential, job, business, and service geographies driven by a rescaled urban system and agglomeration economics. Degrowth has multiple hidden and blurred territorial features amplified by fuzzy multilocality and networked if classic surveys and indicators are applied. Population trends continue to change significantly and potentially disrupt the structure of Estonia's urban system. Population projections for 2050 forecast that the majority of local authorities would see their populations decrease by more than a quarter, while 9 local authorities could experience a decrease of more than half. For Estonia as a whole, metropolisation (A) amplifies regional imbalances. The regional gap and peripheralisation manifest as economic and social inequalities. Regionalisation (B) is executed at the expense of hinterland counties and small cities. The small city scenario (C) preserves the historic county-based urban system, keeping and revitalising regional balances. Small cities also retain their vitality, and rurality is preserved with regional specialisation and optimal diversification.

As a controversial outcome of regional shrinkage, depopulation and degrowth may increase energy consumption, carbon footprint, infrastructure, and service costs. Supporting left-behind regions can alleviate population exodus and further metropolisation but requires massive and very precise policy intervention. Additionally, as an isolated international agenda, the radical policy for national security and regional resilience shifts requires significant trade-offs in cohesion and regional policy, supported by emerging planning discourses.

A new security and cohesion relationship with civic transparency should be positioned as a core element of regional planning, facilitating a shift away from a reactive, crisis response stance (Hunter, 2023). The basis for the strategic choices guiding the future urban system should be defined in the national spatial plan "Estonia 2050," aiming to define the territorial conditions for sustainability and a high-quality living environment throughout Estonia. The emphasis tends to highlight the 'left-behind' risks of re-regionalisation, with modelling, designing, and delivering multiple complex transitions for territorial cohesion, with integrity and an increasingly strong security dimension.

Keywords:

urban system; scenario; regional gap; cohesion; security, Estonia

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T_01 POSTGROWTH URBANISM / 1145

Towards the understanding of the energetic bases of spatial dy-

namics: an introduction for postgrowth planning

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Although acritically reported as steadily galloping for the next decades, based on recent trends, global urbanisation is not exempt from either physico-ecological and social issues and related limits, just like the well-known ones dealt with by Meadows et al. (1972) and by Hirsch (1976). As a matter of fact, natural systems follow pulsing paradigms (Odum et al., 1995), with successions of growth, peak, and descent phases; acknowledging this, and consequently adapting to the right phase can make the “way down” prosperous (Odum & Odum, 2011). Prosperous is an adjective also related to the political proposal of degrowth (Kallis et al., 2012), which can be seen as a step toward a postgrowth societies (in the pulsing paradigm, theoretically this would not exclude novel growth phases in the future). More and more discourses are emerging around the concepts of postgrowth cities and postgrowth urbanism (Xue, 2022; Savini et al. 2023), often pursuing stronger forms of socio-ecological sustainability and resilience altogether (Cristiano et al., 2020). As a part of a stream of founding contributions in such a novel field, a transdisciplinary recognition is here offered to possibly understand the physico-ecological foundations of spatial dynamics, with a focus on human settlements and their relations with the rest of nature. More specifically, all of this is framed - qualitatively - in the systems thinking and diagramming notions behind the above-mentioned scientific literature and - quantitatively - in the systems designs that ecosystems and other self-organising systems develop to reinforce energy use (Odum, 1988), also resorting to the algebra of the eMergy theory (Odum, 1996), to the maximum power principle (Lotka, 1922) and to the maximum empower principle (Odum, 1988; 2002). On top of providing an unprecedented literature review bridging all of these topics in and urban and regional planning perspective, this study aims at producing new knowledge out of the reading of (human) spatial systems through these “hard science” lenses, also launching debates around the many possible extensive declinations of the concept of energy (after all complying with the notion of eMergy as a memory of energy and other resources), also including both “wealth” and basic livelihoods, crucially representing - this is one of our hypothesis - respectively drivers of competition in a growth phase and societal flows to try to secure in other times. Far from offering a complete scientific work, some research lines are here offered for dialectic use in the scientific arena - with a strong orientation toward the scholars of urban, regional, and landscape design and planning - towards a plural scientific toolbox to feed the emerging field of postgrowth urbanism with both “hard” and “soft” science inputs, and transdisciplinary ones.

Keywords:

systems thinking; spatial metabolism; maximum (em)power; spatial planning; eMergy theory

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T_01 POSTGROWTH URBANISM / 1430

Towards post-growth cities: the cultural politics of mobility transitions in Barcelona and London

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Post-growth urban planning has in recent years begun to redefine urban development by foregrounding objectives beyond economic growth and towards social and ecological wellbeing. However, this emerging field has not yet considered the cultural politics that we argue are crucial in facilitating such a significant shift. This is particularly evident in the significant sociocultural and political tensions and contestations around recent progressive urban mobility initiatives.

To address this gap, we conduct ethnographic and archival research around the cultural politics of two contested mobility initiatives that we consider of interest from a post-growth perspective as ‘latent’ examples of post-growth (see Tsing, 2015): Low-traffic neighbourhoods (‘Liveable Neighbourhoods’) in Islington, London, and superblocks (superilles) in Eixample, Barcelona. Both have encountered backlash and political mobilisation against them, resulting in stalled and downscaled implementation of these ambitious initiatives. Although there are similarities in how, why and by whom these mobility interventions have been contested, they are also embedded in very different sociocultural, historic and linguistic national and urban contexts, producing distinct cultural politics of transitions that merit further study.

In this context, we foreground ‘the cultural’ as a key site of political struggles over meanings, hopes, visions and historical place attachments. We develop a more thorough account of what cultural politics means: Moving beyond a strong focus on values and imaginaries, as prevalent in post-growth (urban planning) literatures, we introduce an interdisciplinary framework of cultural politics that considers the confluence and tensions between urban planning histories, political imaginaries and affective attachments. In so doing, we argue for the importance of a more strongly humanities-informed approach to post-growth urban planning and transitions. Finally, we argue that contestation must be dealt with not only as impediments to overcome, but as integral and indeed indispensable part of (democratic) transformative processes towards post-growth cities. This in turn implies that there is a need for urban planners to (1) pay attention to cultural dimensions, loosely defined and including contradictory and messy elements, in both processes and ‘results’ of post-growth transitions and (2) to be radically open to uncertainty and emergence throughout such processes, embracing culturally diverse and variegated solutions for post-growth, refusing ‘cookie-cutter’ solutions.

Keywords:

post-growth; cultural politics; imaginaries; urban history; affect; contestation; backlash

T_01 POSTGROWTH URBANISM / 1782**Community-based Street Greening: A Postgrowth Approach to Resilient and Healthy Cities****Author:** Kristina Ulm¹**Co-authors:** Alec Thornton¹; David Sanderson¹; Evelyne de Leeuw²; Oona Morrow³¹ *University of New South Wales*² *Université de Montréal*³ *Wageningen University & Research***Corresponding Author:** k.ulm@unsw.edu.au

Caring for a garden bed along the street, where neighbors happily pick your herbs, may seem unimaginable for most urban inhabitants. However, in Sydney, Australia, public gardening practices have emerged, transforming bare public patches along roadsides into vibrant green spaces. By reimagining public space as a place for collective ecological and social regeneration, these practices challenge the growth-oriented urban development.

Urban gardening in underutilised public spaces, such as nature strips, can act as small-scale community gardens, enhancing individual and community health. These initiatives build social bonds, encourage outdoor exercise, and provide access to fresh herbs, vegetables, and fruits. Moreover, greening the streets improves planetary health by cooling local climates, increasing biodiversity, and providing habitats for urban fauna.

Through a comparative analysis of local government policies across Greater Sydney, this study examines how different regulatory frameworks support or hinder community-led street greening projects. Over seventy interviews with local government officials and community members shed light on the governance processes and highlight the role of street-level bureaucrats in executing policy decisions based on their views and experiences.

This case study provides actionable insights to future local public policy and citizen-initiated agendas for integrating nature-based solutions and fostering regenerative relationships between society and the environment. This research underscores the urgency of moving beyond growth-oriented development and adopting alternative approaches that prioritize people and the planet. In an age of planetary crisis, citizen-led public urban gardening offers a hopeful path towards resilient and equitable urban futures.

Keywords:

urban gardening, public space, nature-based solutions, collaborative governance

T_01 POSTGROWTH URBANISM / 1419**IS GDP EVERYTHING? ANALYZING GDP EFFECT ON DEVELOPMENT FOR TÜRKİYE PROVINCES.****Author:** Adem sakarya¹¹ *Yildiz Technical University***Corresponding Author:** asakarya@yildiz.edu.tr

Gross domestic product (GDP) is an important variable used to compare regions and countries as a welfare indicator. But is GDP everything? Post-growth and de-growth

approaches criticize the idea that solely focus on GDP growth. These alternative approaches, based on the unsustainability of unlimited growth, seek ways to ensure welfare, and sustainability and to conserve resources beyond growth.

This critical approach emphasizes the need to focus on development rather than economic growth. Indeed, while economic growth is measured through basic economic data such as GDP, development includes variables such as education, health, quality of life and innovation. In the literature, there are studies examining the impact of GDP on concepts such as human development index, welfare, and sustainability that post-growth and de-growth approaches focus on. However, such studies are quite limited in Türkiye

In relation to this, the main question identified in the study is whether the change in GDP at the provincial level in Türkiye is effective on the change in the level of development. The dependent variable is the change in level of development and the independent variable is the change in GDP.

Development data at the provincial level is taken from the socio-economic development index prepared on different dates. In this respect, the 2003 socio-economic development index prepared by the State Planning Organization and the index data prepared by the Ministry of Industry and Technology, General Directorate of Development Agencies in 2017, which is the current data, were used. The change in the development rank of the provinces among 81 provinces between 2003 and 2017 is taken as the change in the level of development, which is the dependent variable of the study. In terms of GDP change (dollar), the proportional change between 2004 data, which is the oldest data at the provincial level, and 2017 data is taken as the independent variable.

A two-stage method was applied in the study. First, the change in the level of development and the change in GDP were analyzed by mapping through geographic information systems. Secondly, linear regression analysis was applied to determine the effect of GDP change on the change in the level of development. Regression analysis is a statistical method used to examine the effect of the dependent variable on the independent variable. For the application of this method, the data must fit the normal distribution. In the normality analysis performed through the Statistical Package for the Social Sciences, it was seen that the data fit the normal distribution, and regression analysis was applied. According to the results of the analysis, the effect of GDP on the change in development level is not statistically significant. The average GDP increase of the 6 provinces with the highest decrease in development level ranking (11 and below) is 74%, while the average GDP increase of the other provinces that have a decrease in development level ranking (30 provinces) is 69%. On the other hand, the average GDP increase of the 8 provinces with the highest increase in development level ranking (8 ranks and above) is 77%, while the average GDP increase of the 30 provinces that have an increase in development level ranking (7 ranks and below) is 77%.

These findings show that GDP has no statistically significant effect on the level of development. Therefore, as a policy recommendation, it is important to focus on the welfare level, development, and sustainability along with GDP as emphasized in the literature.

Keywords:

De-growth; Post-growth; Development; Gross domestic product; Türkiye

T_01 POSTGROWTH URBANISM / 682

Deprivation Analysis in Turkey and Its Provinces: Insights for Post-Growth Urbanism

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This paper discusses the socio-economic and environmental deprivation patterns across provinces in Turkey by applying the English Index of Deprivation framework. In this study, data from TURKSTAT were used to assess disparities and determine the prime areas that need development interventions. The research underlines notable regional disparities by analyzing seven domains: income, employment, education, health, crime, barriers to housing and services, and the living environment, and provides a comprehensive deprivation map for Turkey.

This paper fits into the track on Postgrowth Urbanism, especially under the theme of envisioning cities and regions as integrated social-ecological systems. By applying the EID framework to Turkey, it contributes to the greater discourse on degrowth and equitable urban transformation. It challenges growth-oriented paradigms by calling for planning tools that would prioritize community needs, reduce environmental footprints, and nurture regenerative relationships between society and the environment.

This approach involves the translation of data from TURKSTAT into indicators defined by the EID, normalization, and categorization under component domains, followed by ranking using a multi-criteria weighted sum method. It thus offers a hands-on tool to policymakers, ensuring that decisions taken are based on evidence to stimulate fair development.

Results indicate striking contrasts between the most deprived southeastern provinces and the relatively less deprived far northwestern provinces. This disparity underlines the urgent need for an equitable resource distribution strategy in order to address structural inequalities. The research also emphasizes that one of the objectives of adopting a multidimensional approach in urban planning is to have growth metrics consider social equity and ecological balance.

The paper concludes by calling for the routine use of such analyses to facilitate competitive, sustainable, and equitable regional development. It highlights the transformative potential of deprivation analysis in guiding resource allocation, enhancing governance, and addressing social and ecological inequalities. The findings of this study provide a critical foundation for reimagining urban and regional planning in Turkey and beyond, contributing to global efforts toward eco-social integrity in a post-growth context.

Keywords:

Deprivation analysis; Turkey; English Index of Deprivation; Postgrowth urbanism

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T_01 POSTGROWTH URBANISM / 471

The Circular Economy of Cities and Regions: Towards a Critical Spatial Perspective

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The circular economy (CE) has emerged as a sustainability prominent framework, garnering attention from scholars and policymakers and influencing the policies of cities and regions. However, urban and regional CE strategies tend to focus predominantly on ‘looping actions’ (see Williams, 2021), such as using waste as a resource and reducing resource consumption. This approach often neglects the socio-spatial preconditions and implications of ‘going circular.’ Growing criticism of the urban CE agenda highlights these shortcomings (Dąbrowski et al., 2024), noting that circular actions and strategies are not always sustainable (Taelman et al., 2020), can perpetuate the growth-based paradigm and spatial inequalities (Savini, 2024), and fail to fully exploit circularity’s potential to drive socially inclusive (Vanhuysse et al., 2022) and regenerative (Williams, 2023) transformations of cities and their hinterlands. This paper adds to these debates by shedding light on the interplay between spatial planning and CE strategies, emphasising how the spatial context influences—and is influenced by—CE interventions.

Drawing inspiration from Meerow and Newell’s (2016) critical analysis of urban resilience—another increasingly contested urban policy ‘buzzword’—we propose a critical perspective on the urban and regional circular economy. Specifically, we question: for whom, how, where, and why should cities and regions develop circular economy strategies? Posing these questions prompts a more critical approach to the ‘footloose’ concept of circular economy, especially when it is implicitly applied to spaces like cities or regions, which are far from being neutral backdrops for the implementation of such policies.

Studying a range of real-world examples of urban and regional circular policies and projects implemented in North-West European cities, we explore these questions and demonstrate how CE strategies are deeply embedded in spatial contexts and territorial governance arrangements, reflecting broader (often dominant) political and economic agendas. Our findings reveal the dual role of cities and regions as both starting points and contested arenas for implementing CE strategies. Successes and limitations of existing CE approaches are examined, highlighting how spatial planning practices can either mitigate or exacerbate the uneven distribution of the externalities of circular activities in urban regions.

By this, we contribute to the increasingly lively and politicised scholarly debates on the role of CE in spatial development, while calling for planners to adopt a politically aware, context-sensitive approach to designing and implementing circular economy policies.

Keywords:

circular economy; circular development; spatial planning

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T_01 POSTGROWTH URBANISM / 1805

Twisting the loop: 'Patchworking' local value regimes toward a circular economy

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Over the past years, the concept of circularity has gained considerable momentum in spatial planning as part of the broader transition predicated upon resource efficiency, climate change mitigation and the promise of an economic makeover. With cities and regions envisaged as frontrunners of the circular transition, the turn to spatial planning came as a natural step in problematizing the role of local value retention and upscaling toward a circular economy. Both issues beg the question of what value regimes are desirable within emergent circular ecosystems, and whether those provide more spatially and environmentally just alternatives to the status quo. In this exploratory paper, I adopt a topological standpoint to reflect on the limitations and potentialities of circular-regenerative systems to propose an alternative view of upscaling as a patchworking process, whereby circular value regimes play a foundational role.

Keywords:

Value regimes, postgrowth, circular economy, upscaling, topology.

T_01 POSTGROWTH URBANISM / 369

Designing Degrowth Within: Keeping or Leaving River Burials, Which Costs More?

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Designing and planning the retreat of urban areas where needed is an alien concept for the urban planning and design realm. Spatialization of degrowth within post-growth urbanism context is also a relatively new pursuit. The built environment of cities once produced as solutions to specific problems within a specific climate is now facing problems as the results of previous eras' solutions and the unpredictability and uncertainty brought by the new realities of the climate crisis. Within this climate, nature and the city nexus, to explore the spatial possibilities of degrowth in the existing urban fabric and to compare the costs of keeping the problematic urban spatial solutions as they are versus adapting with nature based urban spatial solutions, the buried rivers of Ankara have been selected as the vessel.

For this study, aiming to examine the costs and benefits of the built environment of the urban fabric alienated from nature and the prices we pay for keeping the urban fabric

as it is, Ankara—a city where rivers were buried and transformed into developed urban land as a solution to development problems throughout its history, is a unique research context. Today, Ankara faces serious challenges due to the invisible water flow through and within the urban fabric including both infrastructures and superstructures, and the unpredictable behavior of these buried rivers, exacerbated by the climate crisis.

The tension between nature and the city, in the form of the buried urban rivers, is usually handled with two distinct and even opposing views regarding the juxtaposition of natural water systems and urban areas. The first one prioritizes the ecosystem and focuses on peripheral or open rivers while the second one adopts a purely urban approach, focusing on the role of natural areas within urban design and planning, viewing them as public elements with a function within the urban system. The only way to move forward in a healthy integration of the natural areas in the urban space is to reconcile these two within the context of the degrowth spatialization efforts.

Within the scope of this study, with a historical-geomorphological perspective, Ankara's urban fabric and its relationship with water are analyzed. Furthermore, the ongoing problems caused by the burial of rivers are spatially analyzed in order to discuss the spatial possibilities of degrowth and new planning and urban design policies for the medium and the long-term. The findings of this study ultimately reveal that the cost of maintaining urban space as it far exceeds the benefits of prioritizing nature and making rivers visible again through a new, nature based degrowth approach.

Keywords:

Degrowth; Post-growth Urbanism; Nature-based Urbanism; Spatial Policy; Water Policy

T_01 POSTGROWTH URBANISM / 1638

Beyond climate change. Retreat susceptibility of the Italian urbanised coastlines

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This research aims to examine the potential role of planned retreat strategies in the socio-ecological transition of Italian coastal areas, in light of the challenges posed by the contemporary post-growth context.

In Italy, the phase of intense economic growth that characterised the second half of the twentieth century coincided with widespread urbanisation, often occurring in the absence of adequate planning or through the use of inadequate regulatory frameworks. Initially concentrated around major urban centres, this urban expansion progressively spread across lowland areas, radically transforming agricultural and coastal landscapes. Today, the urgency of adopting measures to mitigate global warming, as well as the need to fundamentally rethink not only how but also where we inhabit the planet, is beyond dispute.

In response to the current climatic, demographic, and economic dynamics affecting Italy and most European countries, urban planning is called upon not only to develop widespread strategies of ecological regeneration and reconversion within highly dense and intensely urbanised contexts, often affected by processes of decommissioning and abandonment, but also to critically question the very existence of vast portions of contemporary urbanisation, which are experiencing premature obsolescence for multiple reasons, not always or exclusively linked to the impacts of climate change. From this perspective, it is crucial to explore the role and potential of planned retreat strategies: urban planning approaches capable of decisively addressing the growing uncertainties and vulnerabilities that characterise large portions of contemporary territory, including

in the Italian peninsula and across Europe. Investigating such processes entails challenging the prevailing paradigms - both reassuring and illusory - of unlimited growth and risk management, fostering a conceptual shift from the logic of resilience to that of antifragility.

Following an outline of the theoretical-conceptual framework, this paper presents a methodology for identifying the conditions and characteristics that render certain Italian coastal urbanisations particularly susceptible to planned retreat interventions, accompanied by an initial national-scale mapping. The findings highlight that, unlike in other parts of the world, planned retreat in Italy is not solely a strategy to address climate change, but also a means of enhancing safety and accessibility to the coastline, reclaiming public spaces and assets, and preserving coastal landscapes and ecological systems.

In the concluding section, the paper underscores the need to integrate such approaches into existing urban planning instruments, as well as to rethink the education of urban planners and technical professionals within universities. This would promote a culture of demolition that takes into account the socio-economic implications of retreat, the reuse of waste materials produced in the process, and the regeneration of vacated spaces in all their ecological, social, and spatial dimensions.

Keywords:

planned retreat; coasts; degrowth; social equity; ecological balance

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T_01 POSTGROWTH URBANISM / 540

Creative Hubs in Transition: NGBG and the Role of Creative Hubs in Post-Growth Urban Transformation

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This paper examines the transformation of the NGBG community space in Malmö, Sweden. Originally established as a grassroots music festival eight years ago, it is now a key cultural hub fostering creativity and civic engagement. In the rapidly gentrifying SofieLund neighbourhood, NGBG faces mounting pressures as the city enforces a sound-free zone and implements a master urban plan for 2040, prioritising commercial development. These changes highlight the tensions between grassroots cultural spaces, gov-

ernance strategies, and urban development in the context of post-industrial, growth-driven urban transformations.

Through a mixed-methods approach—combining ethnographic fieldwork, semi-structured interviews with community members, policymakers, and private stakeholders, and document analysis of local policies—this research investigates the role of creativity in fostering eco-social resilience. It examines how NGBG adapts to urban growth imperatives while navigating the challenges of marketization and gentrification. Central questions include: How can cultural hubs like NGBG balance their creative and civic missions amid increasing urban commercialization? How do governance models influence the inclusivity, accessibility, and ecological sustainability of such spaces?

The paper situates NGBG in post-growth urbanism, where creative hubs are part of an “organisational field” (Scott, 2014) in reshaping urban metabolisms and integrating social equity with ecological balance. The paper explores how NGBG fosters regenerative practices that counter conventional growth-driven urban models. Rather than solely focusing on culture-led regeneration, this research examines how city growth frames the field of action and remakes institutions (the City (Park and Burgess, 1925)), often embedding them within frameworks of market-driven urban development. It further considers how such dynamics can be reimagined in a post-growth context to prioritize inclusive governance, equitable resource distribution, and collective civic urban action through creativity and community engagement.

This paper contributes to reimagining cities as sites of eco-social integrity, where creativity, culture, and community-based governance create alternative pathways to a post-growth urban future. It offers actionable insights into the intersection of cultural spaces and policy, demonstrating how creative hubs can anchor sustainable and inclusive urban transformations.

Keywords:

creativity; culture; city growth; gentrification; transition; planning; transformation

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T_01 POSTGROWTH URBANISM / 1577

Conscious shrinkage

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The paper aims to address the issue of post-growth urbanism in low-density and marginalised contexts, where both the urban and the economy have not grown for a long time but where public administrations and citizens are unable to think of different interventions beyond growth.

The paper opens with a consideration of the definition of the study context, distinguishing between less favoured areas –contexts in which the implementation of structural measures of the Common Agricultural Policy (CAP) aims at preventing land abandonment, preserving the farming population in these areas, and maintaining the cultural landscape (Dax, 2005) –and inner peripheries, which, in the recent debate (Espon EGTC, 2018), identify territorial areas characterised by three main aspects: low

economic potential, poor access to Services of General Interest (SGI), and a lack of relational proximity.

Afterwards, the text is structured into three parts.

The first section presents and discusses various approaches to revitalising abandoned or neglected hamlets that have emerged in literature and practice over the last two decades. In it, different development models (tourism, construction, manufacturing, and residential) (Andreassi, 2016) are recognised on one hand. They are defined as such because they aspire to be forms of territorial development, albeit sometimes so sectoral that they do not constitute an effective generator of durable and sustainable economies and societies. On the other hand, some strategies for reactivation (hospitality, production, culture, reconnoitring, conservation, and cooperation) of abandoned villages are presented (Berizzi, Rocchelli, 2019), which bring together successful experiences and refer to a variety of modes of intervention. Tourism is not the only perspective for economic revitalisation (Bonfantini, 2016), just as the preservation of both tangible and intangible cultural heritage is at the centre of interventions. However, it is not always a guarantee for revitalisation and development, nor for the production of new economic and social values (Oteri, 2020).

This review of development models and strategies highlights the many attempts to reactivate abandoned hamlets and invites questions about the absence of a shared, selective planning approach for areas of intervention. In particular, urban planning seems to be latent in its land design and governance agenda concerning the recovery or loss of human activities in villages.

The second section is thus devoted to reflecting on a possible alternative to recovery and reactivation, shifting toward forms of managed abandonment and shrinkage. Indeed, urban planning has rarely addressed situations where abandonment is already underway, and often entire settlements have fallen out of social and economic cycles (Rink et al., 2012; Zanfi, Curci, 2020; Mareggi, 2021). Even within conservation disciplines, where there is greater awareness and a substantial tradition of debate, there does not seem to be a widespread recognition of the “inevitable loss” of places where depopulation, underuse, and economic and social decline are irreversible. However, it is clear that it is impossible to re-inhabit all marginal areas (Kealy, 2020) and “only a (guided) abandonment is conceivable” (Oteri, 2020: 50).

The third section aims to reflect on a proposal for conscious shrinkage elaborated for the Grecanic territory of the metropolitan city of Reggio Calabria as a possible broad-area strategy to be presented to local authorities and citizens.

The research is based on an extensive review of Italian and international literature carried out as part of fundamental research (Riba, Lost and Found 2020, Department of Architecture and Urban Studies, Politecnico di Milano) and an action-research activity conducted within the framework of the definition of the Metropolitan Strategic Plan of the metropolitan city of Reggio Calabria.

Keywords:

Degrowth, villages, shrinking strategies, inner peripheries

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T_01 POSTGROWTH URBANISM / 1591

Collaboration Beyond Growth? Possibilities for Innovative Adaptive Governance in Metro-Boston

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In the face of climate change, planning scholars and practitioners have challenged “conventional growth-driven development models”(track 1: post-growth urbanism) and opened the search for adaptation planning practices that could foreground planning futures beyond growth. In this attempt, stakeholder collaboration across public, private, non-profit, and philanthropic sectors has become critical for any innovative adaptation planning initiative. Such assumption has brought scholars to reflect on the meaning of innovative governance institutions capable of generating innovative governance infrastructures to address problems through coordinated efforts (Vella et al., 2016) In the search for solutions beyond growth, such coordinated efforts have been seen as the panacea for “good planning” in the face of the crisis.

In this paper, I am interested in questioning this assumption by examining how climate adaptation stakeholders in Metro Boston collaborate to advance an adaptation agenda that could innovate adaptation planning toward development models beyond growth. Metro Boston has been the breeding ground for adaptation initiatives that, while highly collaborative in nature, never deeply questioned an overall agenda still focused on physical development and economic growth. Adaptation projects are often either not implemented or fail to be adaptive when adaptation agendas take priority (Markus & Savini, 2016), the fiscalization of land use has contributed to non-adaptive coastal development, despite extensive research warning about the severe impacts of rising sea levels (Shi & Varuzzo, 2020), and, finally, the risks most concerning to socially vulnerable individuals, particularly along racial lines, are frequently overlooked in mainstream resilience strategies (Martin, 2015).

The paper discusses how governance infrastructures shape themselves around power clusters, which prevent collaborating actors from achieving innovative planning agendas and coalitions and keep advancing initiatives driven by a growth rationale. Breaching power clusters’ long-term coalitions is key in determining diverse and more effective collaborative conditions among urban actors and, hence, advancing new models of urban development beyond growth.

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T_01 POSTGROWTH URBANISM / 1822

Land Consumption vs. Population Decline: Evaluating Poland's Spatial Planning Strategies in Medium-Sized Cities

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According to data from the European Environment Agency (EEA 2023), Poland is among the leading countries in the rapid transformation of undeveloped areas into residential development. Between 2012 and 2018, it ranked second in Europe in terms of the amount of agricultural, forest, and pastureland converted for housing purposes. These figures significantly exceeded those recorded in Western European countries. The issue of surplus land designated for residential development has also been extensively discussed in numerous national scientific studies.

In an effort to address this issue, several attempts have been made over the past two decades to reform the planning system. The successful reform was first implemented in September 2023, and Poland is now undergoing a comprehensive transformation of its spatial planning system aimed at limiting the expansion of new residential areas. This reform was driven by the European Union's mandate to curb urban sprawl and constitutes one of the key milestones of the National Recovery Plan (KPO). The primary objective of the reform is for each of Poland's 2,477 municipalities to adopt a completely new, legally binding land use plan that will cover their entire area. Strict regulations have been introduced to determine the required area designated for housing purposes. The deadline for completing these land use plans is set for December 31, 2025, leaving municipalities with a very short timeframe for compliance.

In my presentation, I will focus on 16 medium-sized cities, each located in a different voivodeship (region). These cities were selected based on a recently published report on the functional hierarchy of Polish cities and are categorized as "supralocal center strong." Medium-sized cities form the backbone of Poland's advantageous polycentric urban structure, which should be preserved. However, many of these cities are currently experiencing socio-economic crises and significant population declines. Simultaneously, the development of new residential areas is increasing, primarily driven by extensive single-family housing, often arranged in a chaotic manner. This phenomenon has led to a situation where increasingly large areas of land are being occupied by a constantly diminishing population. Polish cities are not unique in this regard. Similar patterns can be observed in many shrinking cities across Europe and worldwide. In my presentation, I will illustrate the dynamics of population decline and the increase in land consumption in the 16 selected case studies. Analyzing the scale and pace of land development for residential purposes in relation to demographic trends will help identify the medium-sized cities that are facing the most severe challenges in terms of rational spatial development. This analysis will also highlight regional variations, illustrating the differences in the scale and pace of new land development across the 16 voivodeships. It will identify regions experiencing particularly rapid suburbanization as well as those where the process is slower or better regulated through spatial policies. Although Poland operates under a strong centralist model, regional variations in planning practices and land consumption can be observed.

In the second part of my presentation, I will present calculations of possible land consumption based on the new regulations for selected case studies. This analysis aims to demonstrate that the current method is not universally applicable and, in some cases, may contribute to even more intensified urban sprawl.

Keywords:

population decline; land consumption increase; housing; spatial planning reform;

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T_01 POSTGROWTH URBANISM / 1671**Wellbeing and New Urban Regeneration Agendas in China: Insights from Shanghai**

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Following four decades of reform, China has lifted millions out of poverty. However, the social costs of the country's growth-oriented agenda have long been scrutinised, with phenomena such as rapid urbanisation being one of the most transformative forces in this process. Under the umbrella of urban regeneration and quality of life improvements, state-led projects have been criticised for their neoliberal focus on capital accumulation through urban redevelopment, often characterised by selective physical upgrading, large-scale demolitions, forced relocations, and the socio-spatial marginalisation of vulnerable communities (He & Wu 2007). In response, recent policy and paradigm shifts such as the 2014-2020 *National New-Type Urbanisation Plan* started pointing towards an increased governmental interest in addressing some of the shortcomings of the past and promoting new visions for sustainable urbanisation rooted in the need to develop "people-oriented, ecologically livable, fair and just, inclusive and harmonious environments" (State Council 2014). Yet, complex structural mechanisms and institutional barriers in the Chinese context may mean that despite recent efforts to integrate practices focused on community wellbeing and quality of life, shortcomings remain. Such considerations call for a more nuanced reflection on issues of wellbeing, urban development, and urban regeneration in China.

Against this backdrop, this research examines whether shifting policy, paradigm and practitioner understandings of community wellbeing are being materialised into new urban regeneration solutions in Chinese cities. More specifically, the study focuses on the context of Shanghai, one of cities spearheading urban policy and practice experimentation and innovation efforts in China (Zhang, LeGates & Zhao 2016). In its latest Master Plan, Shanghai articulated, amongst other ambitions, a call for advancing public participation and "organic regeneration", described as the incremental revitalisation of older residential areas with the purpose of improving living conditions and facilities (Shanghai Urban Planning and Land Administration Bureau 2018).

Drawing from policy reviews, interviews with key urban regeneration practitioners, and field observations of ongoing regeneration projects conducted in Shanghai in the period 2018-2020, the study aims to:

- a) Reveal urban practitioners' understanding of wellbeing, based on their operating within a specific disciplinary background, system of values, agendas and institutional positions;
- b) Critically examine how wellbeing in urban regeneration is planned for and negotiated at local level, and how this is materialised into practice;
- c) Understand what processes and outcomes of current urban regeneration projects in Shanghai reveal about the state of innovation in urban projects, at present.

The study reveals that *weigengxin*, or ‘micro-scale urban regeneration’, has become a key approach for transforming inner-city, dilapidated neighbourhoods in Shanghai, a strategy focusing on affordable, place-specific interventions that prioritise in-situ upgrade, forms of public participation, and community building. Examples include incremental housing upgrades and the improvement and/or creation of public spaces and facilities such as community gardens and elder care centers, as well as incremental housing upgrades –interventions aimed at addressing some of the needs of vulnerable groups such as elderly and low-income populations. In that sense, the research highlights an understanding of wellbeing in urban regeneration extending beyond physical improvements to include, instead, investments in people, with projects often integrating education agendas on health and environmental sustainability, as well as efforts to promote new forms of grassroots governance amongst residents.

The study also reflects on the pivotal role of community planners during planning, design and implementation phases, a relatively new professional role in China represented by practitioners affiliated with academia. Serving as mediators between district and local governments, and communities, community planners’ unique position places them at the crossroads between efforts to maintain existing power dynamics and business-as-usual practices, while also experimenting with new regeneration solutions and governance mechanisms.

Keywords:

wellbeing; China new urban agenda; urban regeneration in Shanghai

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T_01 POSTGROWTH URBANISM / 1737

Imagining the Post-. Can Multispecies Urbanism be a Track for Radical Change? The case of Brussels

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As we globally experience a daily hyper-acceleration of multiple crises and with 2024 being the first recorded year of the Earth’s average temperature crossing the 1,5 °C boundary set by the Paris Agreement, the inadequacy of such global strategies has been unequivocally recognized. In the face of this stagnant situation, the change of the capitalist system is increasingly recognized as the condition sine qua non for starting to think seriously about a way out of the socioecological catastrophe, as even an equitable degrowth is incompatible with capitalism (Kohei, 2024). Scholars are foregrounding a variety of alternative paths for a post-capitalistic and post-growth world, supporting a pluriversal range of possibilities rooted in the local cultures and economies, arriving mostly –but not only –from Indigenous or marginal communities of the Global South

(Demaria and Kothari, 2017).

In this framework, Multispecies thinking has emerged in the West as a refusal of the Euro-Atlantic thought and an alternative for making worlds and kin in our era (Haraway, 2015). Nurtured by a strong core of critical theory in the environmental humanities, particularly critical eco-feminism, with the guidance of Indigenous philosophies and a decolonial approach, Multispecies is asking us to radically reconsider our relation with other living beings and matters, putting their needs at the front alongside ours. Being substantially different from other ecological discourses and the traditional planning approach that relies on conservation and protection, the focus is not on “leaving alone” the environment and other living beings to be able to thrive, but rather on multispecies entanglements and on learning how to live together (Houston et al., 2018). Moreover, recognizing the interconnectedness between oppressions under the system of the capital, the aim is to look after an idea of justice encompassing diverse human and more-than-human subjectivities (Winter, 2022), able to reunite different struggling in a common fight for emancipation.

My research tries to understand the implications of such an approach in Urbanism. What does it mean to fight for the emancipation of the living in spatial terms? Which are the main spaces of friction in the western city? Which technical practices can we mobilize? What tools do we have to change, and what pre-conception and attitudes of the discipline do we have to abandon? Where are the main obstacles in the European planning system to adopting such an approach?

To start addressing these questions I discuss the case study of the city of Brussels, where a long tradition in urban ecology, re-cycle/up-cycle, and metabolism (Grulois, Tosi and Crosas Armengol, 2018) is today accompanied by a flourishing of tentative multispecies urban practices, that involve active citizens, administrations, university students, researchers, and professional practitioners. Through fieldwork and interviews, I map the emergence of these novel practices as well as their potential and struggles in being realized. I underline the scope, the tools, the objectives, and the imaginaries that drive these projects. Finally, I critically question whether these strategies could imagine and steer a radical change for a post-growth urban era, as the ambition the theory set.

Keywords:

multispecies urbanism, post-capitalist futures, radical imaginaries

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T_01 POSTGROWTH URBANISM / 1744

Alto Medio Sannio inner area between marginality, latent place knowledge and territorial heritage

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This contribution raises a reflection on the planning of the so-called inner areas, in which depopulation, emigration, social and productive rarefaction, abandonment of the land, are distinctive phenomena. Shaping a new role for inner areas requires forms of community and the arising of new subjectivities that rely on forms of direct democracy (Magnaghi, 2020), reconstructing the places of living and promoting the synergic connection between local economies (Bruni, Zamagni, 2015). The authors analyze the first results of the ongoing PRIN (Research Project of Significant National Interest) project “RE-PLACE. REframing PLace-based Approach through the Cultural Ecosystem services of inner areas”. It aims to strengthen the role of local communities in building “place knowledge” and territorial heritage also through the innovative lens of Cultural Ecosystem Services (CES), which represent non-material and/or socio-ecological benefits that people gain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation, aesthetic experiences, and cultural and educational values (Chan et al., 2012; Andersson et al., 2015). The project investigates three Italian inner areas (Alta Marmilla and Gennargentu - Mandrolisai in Sardinia, Alto Medio Sannio in Molise, Madonie in Sicily,) and promotes a multi-scalar approach, based on co-evolutionary approaches between human settlement and the environment, and oriented to understand and maximize the resilience of marginalized territories, to build alliances and collaborative processes and to promote place-making developed by communities.

This approach implies the need to support the (re)discovery of ancient and new forms of local knowledge which allow the continuous adaptation to the mutability of environmental contexts and whose loss undermines the effectiveness of interventions implemented in more recent times. It also encourages the establishment of new relations between human societies and non-human environmental elements that allow the continuous generation of innovative local knowledge (De Bonis, Ottaviano, 2023).

The impact between the growth of “place awareness” of local communities and the identity characteristics of the heritage make possible to produce “territorial added value” (Magnaghi, Dematteis 2018) based on visions, strategies and tools and on new forms of self-government of territorial commons, namely place-specific values and resources, sedimented over time. In detail, the contribution focuses on the case study of Alto Medio Sannio inner area, made up of 33 small (of which many have less than 1,000 inhabitants) municipalities between the provinces of Isernia and Campobasso, on the border with Abruzzo region. The research path is designed to support the expression of the autonomous local development practices based on the continuous reproduction of territorial heritage. It is intended to capture the critical issues of some ongoing experiences in the area which are aimed at reducing the fragility of marginalized contexts, also identifying the ineffectiveness of the tools that until today have perpetuated the gap and the poor integration of these contexts.

Particular attention will be dedicated to a very popular and current topic in these areas: the planning of “tratturi system”(territorial system of sheep tracks), ancient transhumance routes which today are considered important elements of the territorial heritage to be valorised. These elements, from a multifunctional perspective, are considered by the authors to be latent resources for sustainable development that takes into account the benefits that ecosystems provide to the inhabitants of the area.

Keywords:

inner areas, autonomous local development, territorial heritage, tratturi

T_01 POSTGROWTH URBANISM / 1729

RURAL TRANSFORMATION AS A RESULT OF COUNTER-URBANIZATION DURING AND AFTER THE COVID-19 PANDEMIC PROCESS IN ZMR-SEFERH SAR

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The COVID-19 pandemic has significantly reshaped urban and rural dynamics, challenging the conventional urban growth paradigm and accelerating counter-urbanization. This shift has profound implications for postgrowth urbanism, which advocates for an alternative to growth-driven urban development, emphasizing ecological balance, sustainability, and social equity. Counter-urbanization, initially conceptualized by Berry (1976), refers to the demographic movement from urban to rural areas, often driven by environmental concerns, affordability, and changing work conditions (Walmsley et al., 1998). The pandemic-induced transformation, particularly in Mediterranean cities such as İzmir, Turkey, has led to a reconfiguration of spatial and socio-economic structures in rural areas, requiring a critical examination of its long-term consequences (Vinci et al., 2022).

This study investigates the rural transformation in Seferihisar, a peripheral district of İzmir that experienced one of the highest population growth rates in the post-pandemic period (TURKSTAT, 2023). The research employs a mixed-method approach, combining quantitative demographic and economic data with qualitative insights from planning policies and community responses. The findings highlight three major transformations:

Spatial Transformation: Increased housing demand, rising land prices, and changing land use have led to rural gentrification, whereby wealthier urbanites displace traditional rural populations (Stockdale, 2010). This process alters the built environment, impacting agricultural land use and accelerating commodification. The redistribution of population also intensifies urban sprawl, leading to a hybrid rural-urban landscape that disrupts existing ecological systems (Nelson et al., 2010).

Socio-Economic Transformation: The influx of higher-income populations has contributed to the restructuring of rural economies. The shift from agriculture-based livelihoods to service-oriented economic activities fosters disparities between long-term rural residents and new arrivals. Rural gentrification in Seferihisar manifests through a change in occupational structures, increasing the cost of living and social tensions between different socio-economic groups (Rojo-Mendoza et al., 2022).

Governance and Sustainability Challenges: Counter-urbanization presents governance challenges, as rural municipalities struggle to provide adequate infrastructure and services to an expanding population. Policy gaps in rural planning contribute to unregulated construction, inefficient land use, and environmental degradation. The lack of a strategic framework for sustainable rural development threatens the long-term viability of counter-urbanization as a resilient postgrowth model (Rezvani, 2007).

The findings of this study suggest that counter-urbanization in Seferihisar reflects broader tensions in postgrowth urbanism, revealing the need for innovative rural planning strategies. Current rural transformations are largely market-driven, favoring economic growth at the expense of environmental and social equity. Alternative models, such as cooperative housing, participatory land-use planning, and circular rural economies, could mitigate the negative consequences of counter-urbanization while fostering sustainable rural futures.

This research contributes to the growing discourse on post-pandemic urban-rural transitions, providing insights into the governance, economic, and ecological dimensions of counter-urbanization. By integrating principles of postgrowth urbanism, policymakers and planners can adopt context-sensitive strategies that balance economic opportunity with environmental stewardship and social inclusion. Addressing the challenges of counter-urbanization requires a decentralized, community-driven planning approach that prioritizes adaptive resilience, resource-efficient land management, and inclusive rural policies. The lessons from Seferihisar can inform broader debates on rethinking urbanization and reimagining sustainable rural development in a post-pandemic world.

Keywords:

Counter-urbanization; Postgrowth urbanism; Rural transformation; COVID-19; Seferihisar

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T_01 POSTGROWTH URBANISM / 250

Perceptual Encounters with the Urbanization of Nature

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At a time when the ecological destructiveness of urbanization and its contribution to environmental problems is widely recognized in mainstream discourse, Urban Political Ecology (UPE) offers a crucial critique of urban design and planning. UPE challenges these practices to align with agendas prioritizing social equity. Even ecological urbanists, despite focusing on sustainability, face critiques highlighting how ecological metaphors in urban design can perpetuate discriminatory urban development processes (Tzaninis et al., 2023; Gandy, 2015; Kaika, 2014). On the other side, critical spatial practices—often employing artistic metaphors, analogies, and narratives—offer tools to generate critical perspectives on the socio-ecological impacts of capitalist urbanization. These practices contribute to alternative urban imaginaries by engaging with cognitive, emotional, embodied, and aesthetic forms of knowledge and affect. UPE scholarship increasingly embraces these approaches, drawing insights from race, gender, and sexuality studies, as well as postcolonial, indigenous, feminist, and queer theories (Heynen, 2018; Loftus, 2019).

This presentation takes a collaboratively driven video-narrative project, *Symbiosis*, undertaken by me with two colleagues from diverse disciplinary backgrounds as a case to discuss the value of situated everyday knowledge with the understanding of contemporary patterns of urbanity. The project explores and documents Kayseri's urban landscape through nomadic fieldwork around its volcanic, mountain-shaped terrain. While the project narrates our encounters and perceptual experiences with the mountainous landscape, this presentation examines the learnings and outcomes of the project through a UPE framework. This approach enables us to ask for an understanding of the city's urbanization that moves beyond human-centric imaginaries, incorporating regional dynamics essential to deciphering urban patterns.

Through this lens, the presentation connects sensory and experiential knowledge to questions of metabolic relations between urban settlements and uneven flows of capital, as well as more-than-human ecological processes. By decomposing its perceptual art-based explorations through the lens of a new vocabulary of planetary urbanization, the project addresses the interplay between urban economic and political dimensions—such as unsustainable real estate development and the practices of profit-driven energy companies—and the dynamic yet increasingly vulnerable terrestrial environment of Erciyes, Kayseri's iconic volcanic mountain.

By employing perceptual and art-based explorations, the project as a case exemplify-

ing how sensory engagement with the urban landscape can deepen our understanding of urbanization's socio-ecological implications and this presentation invites urbanists to interpret and value novel metaphors, analogies, and narratives emerging from critical spatial practices, exploring their potential to meaningfully inform urban planning and design practices.

Keywords:

mountainous landscape, critical spatial practices, situated knowledge, urbanization, and nature

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T_01 POSTGROWTH URBANISM / 819

Post growth and Being. What is envisaged for human being in a post-growth world.

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This paper asks what is envisaged for being in a post growth world. It stems from the observation that in calling for a transformation of human relations in almost every sphere of action, post growth and degrowth, are in some way talking about a transformation of human being. For example, according to Savini (2024, p. 4) 'Degrowth envisions a shift in the social norms that sustain the compulsion to grow, accumulate, exploit and prioritise productivity'. I have argued elsewhere (Low & Sturup, 2018; Sturup & Low, 2017) that being is both constituted by, and constituting of, social norms. Therefore, a titanic shift of the nature called for by Savini, is going to have ontological implications. Undertaking a substantial review of the post-growth and degrowth literature, combined with a personal journey through a process of degrowing, this paper considers the ontological implications of degrowth. In so doing the paper attempts to expose those ways of being most likely to be confronted during a transformation to this new world. A world which many ache for, but at the same times forces us to confront central constructions of who we are, how we validate ourselves, and what we therefore might do.

Keywords:

Ontological transformation; Post-growth futures; degrowth futures.

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T_01 POSTGROWTH URBANISM / 1532

Emerging conflicts between infrastructure-based development strategies and post-growth tendencies. The case of transport acceleration projects in the Salento region, Italy

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The present research investigates the relationship between transport acceleration projects and growth-based development strategies and subsequently compares these with the emergence of opposing trends in the possibility of post-growth urbanism.

The rhetoric surrounding the effects of infrastructure on territorial development has long been a subject of debate among scholars (Plassard, 1990; Barré, 1997;). Despite scholars repeatedly clarifying that there is no direct correlation between infrastructure and its structuring effects (Plassard, 1990), political decisions have nevertheless defined strategic development projects through an infrastructure-based approach (Offner, 1993; Givoni, 2006).

Over time, infrastructure policies have shifted their focus from the introduction of new infrastructure to the reduction of distances and travel times. This transition can be understood as part of a broader phenomenon of transport acceleration, which is itself part of a larger current that also encompasses a social dimension (Rosa, 2015). It gave rise to an imaginary in which the ever-increasing speed is associated with an idea of progress (Tomlinson, 2007). Acceleration of transport led to a hierarchisation and polarisation of space (Battiau, 1998; Mazzeo, 2012). This resulted in a 'dualised' territory (Ollivro, 2000), where the primary economic activities are concentrated near the poles and points of access to the network (Monzón et al, 2013).

In Italy, the development of a 'dualised' territory has resulted in the affirmation of marginalised areas. These areas have been the focus of some strategies aimed at reducing the gaps with the central poles, which have also involved infrastructure projects (UVAL, 2014). The overarching objective of these initiatives was to stimulate economic development by facilitating faster connections with primary metropolitan hubs. In order to ascertain the efficacy of these projects, it is essential to consider existing research that has identified a common thread in the affirmation of non-mechanical cause and effect relationships, emphasising the need to consider the context, pre-existing dynamics and in-place strategies (Offner, 1994; Barré, 1997).

The primary objective of the research is to investigate the consequences of accelerating infrastructure projects, analysing the relationship with other levels of planning and growth-based strategies. In addition, the possibility for post-growth territorial development are investigated.

The case study that has been identified pertains to the southern Salento area. In this context, the phenomenon of transport acceleration was expressed through projects aimed at extending the road section of existing infrastructures. The topography of South Salento is characterised by a considerable distance from the primary hubs of service provision. In this area, an extension of an existing road, which runs north-south through the territory, has been planned. Over time, the infrastructure area has experienced contrasting trends. On the one hand, there has been a development of commercial and productive activities, with the road regarded as a strategic axis for the development of the territory. Conversely, there has been a propensity to preserve and enhance the distinctive characteristics of the landscape through the development of slow mobility practices, a different imaginary based on slowness and de-growth. This

necessitates an investigation into the potential scenarios that might emerge in the wake of the road transformation project.

In the first the research analyses the relationship between the project, pre-existing trends, and the strategies. This component aimed to predict the effects at an urban planning level. A second part of the study involved the confrontation of alternative trends with the definition of the margins within which a de-growth spatial development could take place.

The results of the study indicated concrete possibilities for the development of an alternative territorial vision; however, the study concluded that a major role is played by local actors.

Keywords:

Transport acceleration; Post-growth urbanism; Infrastructure-land use relationship;

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T_01 POSTGROWTH URBANISM / 1491

ADDRESSING SOCIO-ENVIRONMENTAL PROBLEMS BY INTEGRATING BIODIVERSITY IMPACT CHAIN ANALYSIS INTO PLANNING: THE CASE OF MOUNT IDA, TURKEY

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This paper proposes an environmental conservation perspective to address multi-dimensional socio-environmental problems across various spatial scales by incorporating "Biodiversity Impact Chain Analysis (BIC)" (Büscher et al., 2022) into planning. The "Biodiversity Impact Chain" (BIC) analysis offers a methodological framework that aims

to unveil the biodiversity losses and socio-ecological inequalities that stem from isolated conservation practices, and to foster the connection between nature and urban areas. This analysis identifies activities that either enhance or degrade biodiversity across diverse regions and scales. Meanwhile, the studies of metabolic urbanisation and urban political ecology endeavour to examine “urban-nature” networks by assessing waste, infrastructure, construction inputs, mineral resources, and food supply, which are important inputs for BIC analysis considering city-region relations.

Recent nature conservation approaches are prone to ignore socio-environmental injustices and inequalities. For example, adaptation of “the ecosystem services” emphasising the valuation of the functions of critical ecosystems, including urban forests, wetlands, and upstream forests, for urban areas seem to extend the scope of environmental conservation in planning. However, they are inadequate in addressing environmental degradation resulted from intensive and expanded expropriation of nature beyond urban boundaries or defined areas of ecosystem services. On the other hand, critical debates in urban political ecology on nature conservation find no room or remain mostly outside of the planning discipline. Also, the debates centring around de/post-growth alternatives notably emphasise policies at the urban scale and focus on disparate sectors such as water resources, forestry, and agriculture in isolation. The critique of prevailing conservation approaches necessitates the interrogation of scale and boundaries of protection. Addressing alternatives in a spatially equitable manner necessitates a radical, relational and multi-scalar approach to nature conservation in planning.

The surrounding areas of the Mount Ida National Park characterised by forests and water resources have been exposed to massive and intensive expropriations (“so-called primitive accumulation”) through water and land grabbing practices and the emergence of socio-environmental inequalities at various scales. The paper draws on a BIC analysis conducted around Mount Ida National Park, considering conservation scales to uncover inequalities and socio-metabolic networks, to propose and politicise post-growth alternatives. To this end, firstly, ‘conservation scales’ were defined, and the BIC analysis was conducted to examine how conservation and growth-oriented planning policies can create privileged spaces and exacerbate inequalities in Mount Ida and surroundings. The analysis uncovers socio-environmental problems, growth-oriented strategies and their impacts on biodiversity, as well as who benefits and who suffers from these strategies.

Keywords:

biodiversity impact chain; post-growth planning; environmental conservation

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T_01 POSTGROWTH URBANISM / 1442

Rethinking Urban Sprawl in the Context of Shrinking Cities: A Critical Review of Shrinkage Sprawl and Its Spatial Implications

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Urban sprawl has long been a debated phenomenon within the context of growing cities and regions. The indicators, causes, and consequences of urban sprawl, as well as the policies developed to address sprawl development, have predominantly been discussed

in the framework of growing urban areas (Couch et al., 2005). On the other hand, studies on the increasingly prominent topic of shrinking cities since the 2000s reveal that urban sprawl and urban shrinkage emerge as parallel phenomena. Research has shown that cities experiencing demographic and (mostly) economic decline do not spatially shrink; instead, they expand (Reis et al., 2016). While the juxtaposition of the terms shrinkage and sprawl may seem paradoxical, shrinking cities continue to consume land inefficiently. It is evident that the concept of shrinking cities will not mark the end of urban sprawl. Just as shrinking cities are projected to be the future of many regions worldwide, urban sprawl seems to remain a form of growth for many shrinking cities.

In the examination of the phenomenon of 'shrinkage sprawl' (Siedentop and Fina, 2010), it has been observed that studies on sprawl in growing cities and research on shrinkage after the 2000s have been integrated. Sprawl development in growing cities is measured using variegated indicators of physical forms and patterns of land use. Many studies emphasize that relying on a single indicator to identify sprawl areas is insufficient. On the other hand, case studies on shrinkage sprawl have predominantly focused on changes in density in identifying sprawl development, which causes limitations in exploring morphological characteristics.

Shrinking cities are identified through population loss and demographic changes, such as aging and declining birth rates. Spatial indicators are not used in the designation of shrinking cities. The literature review shows that spatial analyses related to shrinkage sprawl remain significantly narrow. Even though theoretical research highlights the uniqueness of spatial characteristics of shrinkage across varying spatial contexts and periods, this observation has not been adequately reflected in shrinkage sprawl studies. This limitation might stem from the fact that while changes in the physical form of sprawl areas are visible, shrinkage does not leave a visible footprint on land. The most prominent spatial characteristics of shrinkage, such as increasing vacancy rates and perforation, are not observable in space unless demolition is actively undertaken by authorities. So, in the identification of urban sprawl in shrinking cities, the spatial dimension of shrinkage sprawl needs to be examined more extensively.

It is essential to investigate whether shrinkage sprawl exhibits physical forms that are similar or different from those observed in growing sprawl. The concept of shrinkage sprawl should be studied across diverse geographies, local conditions, and scales. By doing so, a complex conceptualization of shrinkage sprawl can be developed—one that is both globally relevant and locally adaptable. Developing a model for shrinkage sprawl would contribute to identifying sprawl in shrinking cities.

The inefficient use of limited land in shrinking settlements necessitates developing planning policies. Policies developed for sprawl in growing cities cannot simply be transferred to shrinking cities. It is essential to reconsider the current planning paradigm and its instruments. This requires a reevaluation of the shrinkage sprawl concept, ensuring its spatial dimensions are accurately identified.

This study critically examines research on shrinkage sprawl while supporting the development of new approaches on this subject. Based on the findings from the literature review, this study answers the following questions: Through which concepts and theoretical frameworks are shrinking and sprawling cities discussed? What types of data and indicators are used to identify those cities? How are socio-economic and spatial policies developed to address the challenges faced by shrinking cities?

Keywords:

urban sprawl; urban shrinkage; spatial conceptualization

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Planning the Great Acceleration: Contributions of planning theory, ideology, and implementation to planetary transformation and social-ecological decline

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In the years and decades following WWII, global energy and resource consumption were unleashed on a hitherto unseen scale. The fields of earth system science, history, and planetary health continue to grapple with the causes and consequences of this ‘Great Acceleration’—a proposed entry point into the Anthropocene. For its part, the profession of planning is yet struggling to put into an appropriate context its distinct and historically contingent contributions to this transformative period of planetary socio-ecological change. As a result, the profession also continues to misunderstand its present role in the spread of climate catastrophes, the collapse of global biodiversity, and the sharpening of wealth and health inequities.

This paper takes its cue from recent trends in research that are ‘globalizing’ perspectives on the processes of suburbanization and the distinct suburbanisms these processes produce. We explore spatial and temporal scale as necessary, conjoint lenses for articulating key contributions of planning to the Great Acceleration. Moving beyond the prototypical model of the metropolitan North American city, we present a story that links the industrial structure of a burgeoning hinterland region to the reproduction of a northern suburbanism tailor built for Canada’s resource dependent communities during the Great Acceleration.

Taking Prince George, British Columbia, Canada as an illustrative case, we draw on archival sources and spatial analysis of historical subdivision data. These streams of analysis allow us to track and explicate how dominant planning theories were deployed between 1946 and 1981 to both rationalize and accommodate urban expansion within British Columbia’s northern capital.

Through the application of Garden City planning and the Neighbourhood Unit, Prince George took on a spatial and built form not unlike those seen in suburbanisms across North America. This included the use of these planning norms to expedite the preparation and sale of lands by the most economically efficient means available. As early as the 1950s the efficiency of the Neighbourhood Unit underpinned a massive expansion of suburban growth into previously undeveloped areas. In the 1970s, a Garden City inspired growth plan rationalized a municipal boundary expansion that all but ensured an unsustainable future for the city.

Unlike regions established earlier in Eastern Canada, the northern suburbanism pursued in Prince George served additional, distinct rhetorical purpose. As part of Canada’s ongoing settler colonial project, civic boosterism drew from planning theory the concepts of safety, orderliness, and domesticity to sell a suburban ideal that would help attract the labour needs of a booming forest economy. Well beyond the footprint of the city proper, suburbanization propagated widespread ecological destruction across a region larger than France by ensuring the labour needs of an expanding extractive industry were in rich supply.

By exploring municipal-state coalitions in the use of Crown Land Grants to finance the outward expansion of development, our work illustrates novel financial mechanisms underpinning processes of suburbanization. Beyond this, we illustrate how a northern suburbanism that was used to attract westward European settlement became an enduring contribution to the Great Acceleration. During this era, planning theory, planning practice, and planning practitioners were active champions of the unquestioned

pro-growth ideology the fueled the global expansion of energy and resource use. The social-ecological consequences of this pursuit are now apparent at all scales.

Keywords:

Great acceleration; Growth ideology; Hinterland planning

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T_01 POSTGROWTH URBANISM / 11

Urban Heritage Conservation: A Turn to Post-Growth Planning in China?

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This research responds to a planning exception for urban heritage sites in China, in which, differentiated from the mainstream pro-growth ideologies, socio-cultural sustainability has been declared as a priority over economic growth. This planning exception suggests the potential that urban heritage sites have in encouraging urban planners to embrace post-growth ideas in China, which have not been sufficiently researched yet. To address this research gap, I investigate the urban conservation planning practice in Gulangyu World Heritage Site via a framework—planning for urban heritage sites beyond growth. The research indicates that attributing community to forming heritage significance opens the opportunity to favour a development that emphasises the enhancement of community livelihoods and sustainability over the pursuit of economic growth. Such conservation planning involves economic restructuring and a sufficiency lifestyle supported by spatial transformation towards social interactions, which shows some alignment with post-growth thinking. However, little evidence has indicated the planning for Gulangyu is related to a planned reduction.

Keywords:

Postgrowth; planning; heritage; China

References:

N/A

T_01 POSTGROWTH URBANISM / 356

Toward Integrated Planning for Circular Development in Cities: Insights from Literature and Chinese Policy

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The circular economy is increasingly regarded as a crucial strategy for mitigating resource scarcity and improving waste management in cities, becoming an important factor for urban and regional development. However, many implementation processes overlook an important aspect: the spatial dimension of circularity. Scholars have begun to advocate for “circular cities,” proposing frameworks that integrate economic, ecological, and social dimensions of circularity as part of spatial planning (Williams, 2021). Existing research neglects the challenges and values of marginalized populations, and frequently ignore to conceptualize the synergies among different factors of circular development. In addition, these research frameworks are primarily built upon Western experiences and perspectives, and there has been a notable lack of research drawing from Chinese cases, despite China’s significant role in advancing the circular economy agenda. This study aims to address these gaps by rethinking Williams’ circular development framework, structured around three interrelated goals: resource looping, ecological regeneration, and adaptation actions.

First, through a comprehensive literature review, this study aims to refine the framework to highlight the necessity of recognizing and supporting vulnerable urban communities as part of adaptive actions (here revised as *social adaptation*), while conceptualizing how these three dimensions interconnect. Second, by conducting a thematic analysis of China’s official policy documents on circular development, the study identifies specific development objectives, implementation methods, and pathways for each of these three goals in the Chinese context and examine how these are designed and intend to steer planning practice. The analysis will consider policy framing and planning documents at both the national and city levels, using several Chinese cities as examples.

The results of this policy analysis will offer new insights on the existing circular development frameworks more broadly and also specifically in the Chinese context. Preliminary findings suggest that resource looping, one of the components of circular development, in China, places strong emphasis on industrial efficiency and eco-friendly production systems, while urban waste management—though a component—often remains disconnected from enterprise-led resource looping efforts. Meanwhile, ecological regeneration initiatives in China concentrate on agricultural restoration to compensate for decades of rapid urban expansion and protect farmland for food security. Although resource looping and ecological regeneration are relatively closely linked—primarily through eco-friendly technological upgrades, urban blue-green infrastructure, and organic waste treatment—social adaptation receives limited attention. Multi-functional circular infrastructure, accessible social services, and community-learning initiatives are

largely siloed from the ecological and resource-looping agendas. These result in a fragmented policy environment that struggles to meet the specific needs of marginalized populations and undermines the broader goal of achieving sustainable and just urban transformations.

By conceptualizing how the three dimensions of circular development interact and complement one another within the policy goals, implementation pathways, and methods of circular development in the Chinese context, this study provides insights into pathways for promoting circularity through planning in the Chinese cities. It also provides insights for practitioners and policymakers seeking to advance post-growth urbanism by implementing integrated circular development strategies that balance ecological integrity and social equity.

Keywords:

circular development; social adaptation; literature review; policy analysis; spatial planning

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T_01 POSTGROWTH URBANISM / 625

A new vocabulary for postgrowth transition in planning

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Urban planning has operated for over a century as the primary instrument of urban development, fundamentally equating development with growth (Pizzo 2023a, b, c; Savini et al. 2022; Rydin 2022; Xue, 2022). As we confront escalating environmental and social challenges, this traditional approach faces increasing scrutiny. While new theoretical frameworks emphasizing sufficiency, reduction, and downscaling principles have emerged to challenge mainstream planning orthodoxy, these approaches have yet to produce substantial changes in planning practices.

Current planning practices continue to define growth primarily through increases in building stock and economic value. Spatial plans are developed to maximize value creation, whether through suburban expansion generating absolute rent or through inner-city densification and various forms of urban regeneration producing differential rent. Even urban greening initiatives and climate crisis response policies often reinforce this growth-oriented paradigm (Conde et al. 2022), and “monetization” is often preferred as a solution than avoiding questionable urban transformation proposals (Lave & Doyle 2021). Many planning professionals view their discipline as inextricable from the current development paradigm, reflected in the renewed relevance of Jameson’s observation that “it is easier to imagine the end of the world than to contemplate the end of capitalism” (Jameson 1996).

Contemporary analysis of planning practices, particularly at the local level, reveals the persistent dominance of mainstream approaches. These practices remain firmly anchored not only in traditional concepts and norms but also in a vocabulary that perpetuates an increasingly contested pro-growth mindset.

Our research in Rome, Italy, provides the empirical foundation for examining critical elements that impede the transition from pro-growth to post-growth planning. We focus particularly on key planning concepts and policy tools, such as “compensation”, which in their current application obstruct meaningful change. Our analysis demonstrates why merely modifying existing planning tools while maintaining their growth-oriented framework proves insufficient for achieving genuine transformation toward post-growth cities.

Moreover, we illustrate how conventional planning vocabulary presents a fundamental barrier to more radical post-growth transitions. Our investigation proceeds through three main objectives:

1. Analyzing how growth assumptions embedded in planning tools and vocabulary perpetuate unsustainable development patterns
2. Examining specific cases where traditional planning concepts impede the implementation of post-growth approaches
3. Developing alternative frameworks that transcend the conventional equation of development with growth.

We aim to contribute to the broader post-growth debate by examining real-world planning practices and their limitations in achieving post-growth objectives. We provide both theoretical insights and practical evidence demonstrating how entrenched planning paradigms must transform to achieve genuine ecological balance and social equity. Our findings challenge the above-mentioned Jameson's observation about the difficulty of imagining alternatives to capitalism by demonstrating concrete ways to reconceptualize planning beyond growth-centric approaches.

Keywords:

Post-growth, Urban planning, Development Paradigm, Planning concept and tools

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T_01 POSTGROWTH URBANISM / 55

Degrowth's identity problem: the regional politics of Vienna's 'breadbasket'

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The article investigates how (bio-)regional identity mediates the rearrangement of urban-rural relations in the planning of sustainable regional economies. It researches the issue of identity within the emergent field of degrowth urban and planning studies. Degrowth scholarship largely neglects the issue of identity and can be accused of running the risk of co-option by far-right ideologies. Drawing on post-structuralist regionalism, we argue that (bio)regions and their identities are contested, power-laden constructs rather than

fixed entities. The paper focuses on the city-region of Vienna, and in the ‘operational landscape’ of Marchfeld as a case study. We examine how place-based identity is constructed by the actors involved to mediate the conflicts over city and rural areas around issues of agroecology, sand extraction, and the bioeconomy. The paper advocates for a more critical research on identity issues in degrowth research and its analysis in the construction of regional scales.

Keywords:

degrowth; (bio-)regions; identity; scale

T_01 POSTGROWTH URBANISM / 583

The Global Journey of Second-Hand Clothing: Key Actors and Local Dynamics

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In recent decades, growing pressure on the planet’s resources has sparked increasing concerns about sustainability and the need to mitigate the effects of human activities. To address these challenges, circular economy practices have emerged, focusing on reducing the over-exploitation of raw materials and extending the life cycle of products. The trade in second-hand clothing exemplifies this approach. Recently, this market has gained significant traction, particularly with the movement of garments from Global North countries to the Global South. In the GreenCCircuit project, we aim to explore how this global phenomenon unfolds and its local implications, using Mozambique and Mexico as case studies.

In this presentation, we will debate the specific contexts through which second-hand clothing emerges and develops in both countries, focusing on how second-hand items are mercantiled, even when their origins lie in charitable initiatives. Furthermore, we will share insights from our upcoming fieldwork in Maputo and Mexico City. Our preliminary findings reveal the intricate path that clothing takes from its initial entry into the cycle to its eventual placement in local second-hand markets. By examining these dynamics, we hope to deepen our understanding of the role that second-hand clothing plays in advancing sustainability and fostering circular economies across different contexts.

Track 2 | PLANNING AND LAW

T_02 PLANNING AND LAW / 1182

Operationalising adaptive planning in regulatory planning systems: Balancing Rigidity and Flexibility in Oude Dokken, Ghent

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Comprehensive blueprint plans present a fixed end state for years or decades into the future, detailing elements such as land uses, zoning, and building regulations (Davoudi, 2021). Since the 21st century, criticism against blueprint planning has intensified, leading to a surge in adaptive planning concepts within planning literature, highlighting that blueprint planning is unsuitable for managing change and planning for uncertain futures (Rauws, 2017; Skrimizea et al., 2019). The core idea of adaptive planning is to make plans, projects, and urban areas adaptable to uncertain future changes (Pelzer & Pot, 2023; Skrimizea et al., 2019). This central characteristic is a significant aspect of various research strands that can be interpreted as adaptive planning concepts, some inspired by other disciplines. Simultaneously, adaptiveness has generally increased in spatial planning practices in Europe during the 21st century (Nadin et al., 2021).

Despite these theoretical and practical shifts, it is widely acknowledged that planning practices remain dominated by traditional approaches such as blueprint planning (Davoudi, 2021). While theoretical concepts abound, there is a shortage of empirical studies that deepen our understanding of how to operationalise adaptive planning within contemporary planning systems and practices. The few existing studies overlook how adaptive planning can be operationalised in current spatial governance and planning systems, which is crucial for translating theories into tangible approaches for practice.

In this paper, we aim to contribute to planning practice and research by addressing the research question: ‘How can adaptive planning be operationalised to prepare flexible plans and enhance the adaptivity of urban areas?’. We examine the Oude Dokken case, a large-scale urban redevelopment project ongoing since 2004 in Ghent, Flanders (Belgium), where practitioners consider it an example of adaptive planning despite Flanders’ (Belgium’s) rigid spatial governance and planning system (Lacoere and Leinfelder, 2023). This case offers valuable insights into how practitioners balance rigidity and flexibility in such a context. Data were collected through document analysis and semi-structured interviews with key stakeholders. We analyse both (a) the adaptive planning process across the planning, design, and implementation phases, and (b) the neighbourhood’s potential for long-term adaptivity, post-implementation. We propose a cohesive analytical framework examining four levels of planning practice: the planning and decision-making process, the strategic plan level (masterplan, visioning), the level of regulatory instruments (e.g., a land-use plan), and the project level (built environment and infrastructure). Additionally, we assess Oude Dokken’s potential long-term adaptivity potential by using Cozzolino’s (2019) characteristics of (anti-)adaptive neighbourhoods (AANs).

The empirical findings show how adaptive planning can be operationalised, despite constraints, even within a context of strong and continuous government control, and a rigid planning system, and that this can still lead to a potentially adaptive neighbourhood in certain respects. This suggests that planning practice can move forward and operationalize adaptive planning today, without radical institutional changes. Examples like Oude Dokken, which consciously complement traditional approaches with adaptive

planning rather than treating them as conflicting, support arguments for hybrid planning approaches that balance rigidity and flexibility.

Keywords:

Adaptive planning; adaptivity; uncertainty; urban development; planning system

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T.02 PLANNING AND LAW / 517

Comparison of Retrofitting and Urban Renewal Processes in terms of Transaction Costs and Value Increase Effects: Case Study in Kadıköy

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Urban areas face interconnected crises, including natural disasters, environmental issues, extreme climate changes, social and spatial inequalities, and displaced communities. Growth-oriented development models exacerbate these challenges by undermining ecological balance, social justice, and resilience. In Istanbul, a city with high earthquake risk and similar vulnerabilities, the need for earthquake-resistant housing is a pressing concern. However, renewal or retrofitting processes for existing buildings pose significant challenges for individuals and institutions alike.

Istanbul's location near active fault lines places it at serious risk of earthquakes. A large portion of its building stock was constructed before the 1999 Marmara Earthquake, rendering much of it non-compliant with modern seismic standards. This problem is compounded by the rapid and unplanned urbanization during earlier decades, often without proper engineering oversight. Consequently, it is critical to make Istanbul's buildings earthquake-resistant as quickly as possible.

The October 23, 2023 report by the Commission on Public Works, Reconstruction, Transportation, and Tourism highlights the urgency of this issue. According to the report, approximately six million houses across Turkey are at risk, with two million independent sections requiring immediate transformation. Since the enactment of Law No. 6306 in

2012, only 2.2 million independent units have been transformed, accounting for just one-quarter of the urgent need. The persistent disaster risks not only exacerbate physical vulnerabilities but also deepen social and economic inequalities. Low-income groups face significant barriers to accessing safe housing due to high costs and limited post-disaster response capacities. Addressing these risks in Istanbul requires inclusive and sustainable solutions that cater to both individual and societal needs.

This study examines the economic sustainability of urban renewal and retrofitting processes and their implications for spatial justice. It compares transaction costs and value increments associated with two housing projects in Kadıköy District, a hub for urban renewal and retrofitting in Istanbul. These projects were selected from non-conservation areas under the local spatial plan. The analysis spans the entire process, from initial decision-making to administrative procedures and implementation. Transaction costs, including time and monetary expenses for each step, are calculated. Furthermore, the study assesses changes in housing prices before and after renewal or retrofitting in the same locations.

Transaction cost theory offers a lens to analyze the expenses incurred during economic decision-making processes due to information asymmetry, bureaucratic barriers, negotiation challenges, and implementation difficulties. This theory is particularly relevant for understanding the complexities of urban renewal projects, where interactions between individuals, institutions, and public authorities play a pivotal role. Transaction costs extend beyond direct monetary expenses to include time, labor, and administrative efforts. Factors such as lengthy decision-making processes, collaboration with local authorities, and complex legal requirements significantly influence these costs. Understanding and addressing transaction costs is essential for developing policies and strategies that enhance economic sustainability and spatial justice.

The findings of this study are expected to highlight the differences in transaction costs between retrofitting and demolition-reconstruction methods and analyze how these differences impact housing value increases. While demolition and reconstruction projects typically involve higher transaction costs, they may result in greater market value appreciation than retrofitting. Conversely, retrofitting is anticipated to offer a more sustainable approach with lower transaction costs.

This study not only compares economic value and transaction costs but also underscores the importance of re-evaluating spatial planning processes through the lenses of justice, accessibility, and ecological sustainability. Given Istanbul's earthquake risk and economic constraints, the results provide valuable insights into how spatial planning can function as a transformative tool in times of crisis.

Keywords:

Urban renewal, retrofitting, transaction costs, value increase, Istanbul, Turkey.

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T_02 PLANNING AND LAW / 545**Exploring the Challenges of Integrating Nature-Based Solutions into Urban Planning Statutory Systems: A Case Study of Kaohsiung City, Taiwan****Authors:** YaZhen Cai¹; Tzuyuan Stessa Chao¹¹ *Department of Urban Planning, National Cheng Kung University, Tainan, Taiwan***Corresponding Authors:** tychao@mail.ncku.edu.tw, t900916@gmail.com

Under the dual challenges of climate change and urban sustainable development, Nature-Based Solutions (NbS) are one of the modern approaches to address environmental and social challenges. As an innovative strategy for urban sustainability, NbS has garnered widespread international attention (Nugent et al., 2015), and many countries have actively promoted its broad application. The Urban Nature Atlas (UNA) categorizes NbS based on the challenges faced by different regions and emphasizes the importance of bottom-up NbS implementation strategies. Also, in urban governance, uncertainties posed by climate change and the lack of site-specific governance strategies highlight the need for a comprehensive implementation framework (Castelo et al., 2023). Therefore, how to systematically and effectively incorporate NbS into urban planning statutory systems and practices remains a pressing topic in academic and practical fields.

In Taiwan, the "Nature-Based Solutions for Climate Change Adaptation Action Plan" meeting was firstly held in 2022 and followed by the Executive Yuan approved the "National Climate Change Adaptation Action Plan (2023–2026)" in 2023. The NbS was officially announced as a key concept in climate change adaptation strategies (Shih, 2024). Despite strategies of ecological protection and disaster prevention have been compulsory contents in the current statutory plan by law, the systematic application of ecological foundations integrated with NbS remains insufficient (Chou et al., 2023).

Furthermore, the practical application of NbS in Taiwan faces challenges due to urban spatial heterogeneity and high-density development. The local applications of NbS remain controversial. Kaohsiung City, the second largest municipality in Taiwan, has actively sought to transition from a heavy-industrial city toward a vision of smart innovation and green sustainable development in recent years, presenting an excellent opportunity for the introduction of NbS.

The study focuses on Kaohsiung City's urban planning system, selecting three types of spatial areas facing distinct challenges: industrial transformation and emerging urban zones (e.g., Asia New Bay Area), existing ecological protection zones (e.g., Shoushan Conservation Area), and historical cultural landscape areas (e.g., Yancheng District). The research employs Strategic Environmental Assessment (SEA) combined with an NbS relevance matrix to quantify the current state of NbS applications in urban planning documents. Additionally, through international case comparisons, this study examines differences in policy frameworks, technological applications, and social benefits, evaluating the status of NbS applications in various spatial contexts in Kaohsiung's urban planning while analyzing the potential and deficiencies in its implementation.

The expected outcomes of this study include: (1) clarifying the current status and limitations of NbS applications across different urban planning areas in Kaohsiung; (2) proposing policy integration and suggesting possible planning regulations/ zoning codes for the current urban planning statutory system for delivering feasible NbS strategies to enhance Kaohsiung City's resilience and sustainability. These findings aim to serve as a policy and practical reference for other cities, contributing to the dual goals of climate adaptation and sustainable development.

Keywords:

Nature-Based Solutions (NbS) ; Urban Planning ; Sustainable Urban Development

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T_02 PLANNING AND LAW / 723

NAVIGATING UNCERTAINTY: THE ROLE OF PLANNING IN ISTANBUL'S BAGCILAR INDUSTRIAL DISTRICT

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Turkey operates under a regulatory planning system; however, zoning plans allow for significant flexibility through plan notes. This flexibility often leaves urban development and transformation at the mercy of market dynamics. As a result, plans fall short of providing a clear vision for cities and fail to ensure sustainable urban development.

This study aims to explore how zoning plans struggle to guide urban development, using Istanbul's Bagcilar district as a case study. Bagcilar is a significant industrial district where rapid industrialization occurred during the 1970s. Since the 2000s, however, policies of industrial decentralization have been implemented. Consequently, while industrial activities have been relocated in certain areas of the district, they persist in others. The coexistence of industrial and other functions is largely facilitated by plan notes, which enable a wide variety of uses. For instance, in areas designated as Central Business Districts (CBDs) or Prestige Axes, zoning plans permit a mix of offices, hotels, residences, and even manufacturing. This uncertainty is evident as approximately 22% of areas planned as CBDs or Prestige Axes still accommodate manufacturing, while industrial activity is permitted in 45% of designated zones. Furthermore, research conducted in 2022 revealed that 75% of manufacturing firms prefer to remain in the area.

This study focuses on how zoning plans, while assigning specific functions to an area, create ambiguity through the variety of uses allowed by plan notes. This raises the question: How can such planning decisions result in diverse and divergent urban development and transformation? To address this, the study highlights how zoning plans in Bagcilar enable diverse—and sometimes contradictory—development scenarios. The development of these scenarios was supported by field studies conducted in the district between November 2022 and December 2023. These efforts included site surveys, in-depth interviews, sectoral workshops, and a detailed examination of planning processes. Based on the findings, three potential development scenarios were identified:

- i) Manufacturing and Housing-Oriented Transformation
- ii) R&D and Design based Manufacturing-Oriented Transformation
- iii) Housing-Oriented Transformation

Each scenario presents distinct implications for the population, employment opportunities, housing demand, socio-economic structure, and the social and technical infrastructure requirements of the district. However, there is no mechanism to assess which scenario aligns best with sustainable development goals or to implement measures toward that objective.

The study argues that zoning plans prepared under the regulatory planning system fail to effectively guide urban development due to the uncertainty created by plan notes. It also underscores the need for regulatory adjustments in planning systems to achieve sustainable urban growth.

Keywords:

Uncertainty; regulatory planning system; industrial district; sustainable urban development

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T_02 PLANNING AND LAW / 986

Suburban Densification: Space, Strategies, and Land Policy

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In light of global ambitions to reduce land take and the need for housing, densification has become a prominent policy goal for urban development in many countries. While densification has been widely discussed in academia for the inner-urban realm, suburban areas have huge potential but are yet understudied. Densification of suburban areas, however, is from a spatial planning perspective much more challenging.

This contribution presents evidence of the international research project SUBDENSE from city regions in England, France and Germany. There are three main types of results: (1) Based on a geo-spatial analysis, it will be shown where densification takes place and the institutional drivers behind different types of densification. (2) The study then looked at the role of actors in suburban densification process based on interviews with landowners, residents, developers, planners and councillors to assess the agency that various stakeholders have in the densification process. Finally, (3) the study investigated the role of land policy in the densification process.

The results reveal that the main barrier to suburban densification is not so much due to resistance from landowners, but the passivity of local authorities as well as a lack of proper tools to have informed public debate and to contract with stakeholders. Our results encourage a debate on the role that suburban areas play in trajectories towards sustainable urban development.

Keywords:

housing; geo-spatial analysis; landowners; property rights

T_02 PLANNING AND LAW / 1258

Post-socialist and Western housing policies for densifying suburbia –Understanding and comparing German and Czech perspective

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Urban densification is increasingly advocated by planners throughout Europe as a viable solution to housing shortages and the reduction of land uptake. By optimizing existing urban spaces, densification promises to alleviate the pressure to develop greenfield sites, thereby preserving natural landscapes and promoting sustainable urban growth. Suburban areas have huge potential for densification, yet densification in these areas is barely in the focus of spatial planning and systematic implementation is often tardy. Existing property rights and stakeholder interests hamper development. Yet it can be expected that in different countries the hampering factors differ.

Western and post-socialist contexts deal differently with property rights and land policy. This study investigates possible soft densification of suburban areas in Germany, as a Western European state, and the Czech Republic, a post-socialist state, through the lens of three key research questions.

The first research question examines the historical development of suburbanization, analyzing how the trajectories differ between the Western and post-socialist settings. A comparative content analysis of literature explores temporal and quantitative distinctions, highlighting the role of property rights transitions—particularly in the Czech Republic's post-socialist privatization—in shaping suburban patterns.

The second research question investigates the morphological characteristics of suburban neighborhoods, comparing plot sizes, building layouts, built-up areas, and housing typologies (e.g. individual houses, row houses, duplexes) in the case studies of Prague and Dortmund suburbs. Using geospatial analysis, this study uncovers how spatial configuration and built environment in these regions can determine spatial reserves for soft densification, offering the most empirical insights of the research.

The third research question addresses governance perspectives, focusing on how soft densification is reflected in policy documents and perceived by municipal representatives. Data include interviews, legislation, and strategic documents, analyzed through keyword searches and qualitative coding. This research highlights how property rights frameworks—such as land-use regulations and ownership constraints—shape the feasibility and implementation of densification policies, revealing differences in institutional approaches and municipal practices.

By integrating historical, morphological, and governance perspectives, this study elucidates the interplay of suburbanization, property rights, and densification policies in Germany and the Czech Republic. The findings contribute to a deeper understanding of how socio-political and legal contexts influence suburban development and offer valuable insights for spatial planning and housing policy.

Keywords:

soft densification; suburban densification; housing policy; property rights; post-socialist suburbanization

T_02 PLANNING AND LAW / 408

Soil Consumption and Logistics Hubs: Castel San Giovanni, the Milan Logistic Region's Gateway to Emilia-Romagna

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The establishment of logistics platforms in medium-to-small-sized municipalities has increasingly contributed to soil consumption, significantly impacting northern Italy in recent years and generating notable side effects. This issue is particularly evident in the province of Piacenza, Emilia-Romagna, which hosts a cross-border logistics network of major European significance, known as the Milan Logistic Region. This research examines the implications of this phenomenon through an in-depth study of the Logistic Park in Castel San Giovanni, one of the largest logistics hubs in northern Italy. Castel San Giovanni is a small town with fewer than 15,000 inhabitants, yet it has undergone significant transformations due to the expansion of logistics infrastructure.

The paper investigates the development of the Logistic Park as a case study to assess the impact of Emilia-Romagna's Regional Law No. 24/2017 on soil consumption. This legislation serves as a key example of how large-scale transformations have been regulated in recent years, particularly in light of the European directive targeting zero land take by 2050. The analysis traces the legislative process and the origins of the logistics hub, which evolved through a series of approvals outside the main urban planning framework. This fragmented approach has resulted in a settlement that is poorly integrated into the pre-existing urban fabric.

By examining the development of the logistics hub and its broader impacts, the research ultimately proposes measures to reinforce the provincial green network. These include rethinking the role of private stakeholders in ecological and environmental compensation agreements, positioning the logistics hub as an opportunity to foster sustainability. Finally, the paper reflects on the feasibility of steering the hub's evolution towards greater sustainability, adaptation, and resilience—key imperatives in addressing contemporary urban and environmental challenges. The case study highlights the risks associated with fragmented planning processes, which often prioritise private interests and rapid implementation over integrated, long-term strategies for the common good.

Keywords:

Soil consumption, Logistic platforms, E-commerce, Urban Planning

T_02 PLANNING AND LAW / 846

Study on the current status and issues of urban regeneration development in Yokohama City

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It has been about 20 years since the Urban Renewal Special Measures Act came into force in June 2002. Under this Urban Renewal Special Measures Act, Urban Renewal Special Districts are a planning consultation-type deregulation method that allows deregulation of floor area ratios, etc., in urban development projects within urban regeneration emergency development areas, depending on the contribution to urban regeneration proposed by the business operator. This is very different from pre-determined deregulation methods such as specific blocks and comprehensive designs, in which the relaxation of floor area ratios, etc. is clearly stated depending on the quantitative level of

contributions in specific fields (public space, pedestrian-only roads, disaster prevention, environment, scenery, use, etc.).

At first glance, the Urban Renewal Special Measures Act seems very good and is a reason to improve the economy, but the problem is how the incentives given to Urban Renewal Special Districts, that is, the balance between the relaxation of floor area ratios and the public contribution plans, are balanced. The current Urban Renewal Special Measures Act does not provide detailed provisions on the scope of public contributions or the number of achievements, so businesses can easily obtain incentives by simply bearing the public burden as is. The public contributions required of Urban Renewal Special Districts include not only space but also buildings and environments that have a positive impact on the environment. This public contribution also becomes problematic if there are no detailed regulations on what materials are used and what environmental impact is required to obtain the incentive. Recently, the construction of hotels, MICE, meetings for companies, incentive travel for companies, international conferences for international organizations, associations, academic societies, exhibitions, trade fairs, and events can receive incentives as public contributions in the Urban Renewal Special District. It is very easy for business proponents, and they can get incentives for floor area ratio relaxation just by building a conference room or exhibition room on a few floors of an existing building. Although the current regulations do not specify in detail, the most important thing is the evaluation, decision-making power, review, and supervision of the project from the city to the central government on what kind of public contribution will be built and whether it is worth building.

This study is in Yokohama City, and since 2002, it has been collecting and organizing planning data on public contributions (public spaces, pedestrian-only roads, disaster prevention, environment, scenery, use, etc.) and floor area relaxation from businesses and the government. Collect and organize data not only from within the specific urban regeneration emergency development areas but also from the surrounding areas. Display urban spatial data using GIS. Conduct literature research on the process from planning to deciding on each project, and organize the council, environmental impact assessment, and urban beauty measures council. Conduct a hearing survey of Yokohama City, the stakeholders most involved in the process, and organize the data.

Keywords:

Renewal; Incentives; Public-Contribution; Balance

T_02 PLANNING AND LAW / 659

Future Zones: Legal Innovations for Adaptive and Equitable Spatial Development

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The increasing rigidity of legal and regulatory frameworks in spatial planning has hindered the ability to address contemporary challenges, including climate adaptation, demographic shifts, and rapidly changing local needs such as housing shortages or surpluses. Zoning, often criticized for perpetuating outdated models rooted in modernist or neoliberal priorities, has emerged in new forms with a different normative orientation. Future Zones represent an innovative reimagining of traditional regulatory instruments, enabling flexibility, sustainability, and equity while countering legislative inertia in urban and regional development.

This paper explores the legal underpinnings and characteristics of these “third-generation zones,” focusing on their role as catalysts for systemic change. Using a comparative and systematic approach, the study examines key dimensions:

1. **Time** –The legal mechanisms governing the longevity, adaptability, and dissolution of zones.
2. **Form** –How legal frameworks influence the evolution of zone boundaries and their prescribed dynamics.
3. **Goal** –The ideological and practical objectives encoded in zoning regulations.
4. **Emergence** –The conditions under which zones arise, contrasting top-down imposition with collaborative, stakeholder-driven planning.

By situating “Future Zones” within existing legal frameworks, this paper demonstrates their potential to reconcile tensions between public and private rights, foster inclusive governance, and create equitable and resilient urban spaces. The findings provide actionable insights into how planning law can evolve to meet the challenges of sustainability and just transitions in times of crisis.

Keywords:

Spatial planning law; zoning paradigms; adaptive governance

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T_02 PLANNING AND LAW / 1624

The relationship between urban planning and crisis management from the perspective of legal instruments in Poland.

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Urban areas are increasingly vulnerable to natural and man-made disasters, exacerbated by factors such as dense populations, inadequate infrastructure and unplanned development. Such disasters can have devastating consequences, including loss of life, economic disruption, and social upheaval. Recognizing the critical importance of urban resilience, experts and scholars stress the need for strategic planning and the development of sound emergency shelter systems (Zhu et al., 2023) for the safety and sustainable development of cities and enhancement of disaster management (Wei et al., 2020). These shelters should serve as vital lifelines, providing refuge, essential services, and a sense of security to the affected populations. As emergency planning determines the conditions of shelter for those displaced by an emergency, it also influences the design of everyday urban spaces. The process of formulating an emergency plan is similar and parallel to urban and regional planning. Unfortunately, the two disciplines are seldom sufficiently linked and exchanged, yet they have much in common. This study examines the critical role of urban emergency shelters in the overall urban system, providing an

expertise of the legal instruments in Polish crisis management from local and supra-local perspectives and their relevance for effective urban planning in multi-risk situations. The Crisis Management Act describes the activity of public administration bodies as part of the management of national security. Despite many years of legislation in the field, the system has been defragmented due to the lack of relevant regulations. It also considers protective facilities and buildings and their condition in Polish cities, which has been severely neglected for decades. At the same time, the newly introduced Civil Protection and Civil Defence Act imposes new tasks on civil protection authorities to improve prevention and preparedness for possible incidents. Therefore, documents related to emergency situations at national, regional and local level over the last 20 years have been compared in terms of their contribution to spatial planning and building law. Key issues have been diagnosed based on the conditions and limitations identified. The results of the study highlight the need to improve the relationship between urban and emergency planning for non-emergency and emergency wellbeing and place-making in the urban fabric by introducing provisions (in the form of relevant regulations in spatial law) that specify detailed rules for the planning, design and distribution of emergency services.

Keywords:

spatial planning law; crisis management; civil protection; urban emergency shelter

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T_02 PLANNING AND LAW / 920

How and why do municipalities regulate urban environments: Comparison across Europe

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The rapid growth and increasing complexity of European cities underscore the critical need for spatial planning to ensure sustainable urban environments. Within spatial planning, local land-use planning is translating strategic goals into legally binding regulations. Making up a big part of land ownership and development law, local-level regulations directly shape cities by controlling their physical components, such as buildings and open/green spaces, and allocating land for different activities and uses, e.g. residential, commercial, industrial, etc. However, land-use regulations used across European cities are highly diverse as municipalities have a lot of freedom in designing regulations to address their local needs. Moreover, the development of regulations is often a practice-led process and not theory-driven. Thus, our understanding of how and why urban environments are regulated on the local level remains poor as we lack systematic analysis and comparative research.

So far, comparisons of spatial planning across Europe (Berisha et al., 2021; Knieling and Othengrafen, 2009; Newman and Thornley, 1996) have predominantly focused on legal-administrative frameworks but largely neglected local land-use regulations. An exception is the COMPASS project (Nadin et al., 2024) which looked at the diversity of local planning instruments, such as local plans, in 32 European countries. The project identified 251 types of instruments and categorised them according to the envisioned functions into four categories. 76% of all “local spatial planning” instruments fell into one category, which indicates the need for a more detailed approach. Moreover, the project did not analyse the individual regulations that comprise these instruments, such as regulations limiting building height or protecting urban trees. A focus on regulations is promising since regulations are the law-based building blocks of any planning system and, thus, essential for understanding the differences and commonalities in how and why municipalities and countries plan and regulate urban environments. Thus, we seek to develop a European overview of spatial planning based on regulation-level detail and the regulatory profiles of countries.

We analyse how local land-use regulations are prioritised in the planning and permission-granting process and the extent to which they pursue efficiency and equity objectives. Efficiency and equity are two primary objectives of planning (Vejchodská et al., 2022) where efficiency stands for the most effective use of resources aimed at supporting economic growth and social well-being, and equity refers to a fair distribution of resources aimed at addressing disparities and inequities. The data is collected with an online survey of planning professionals and academics across 31 European countries. In order to develop country profiles, we classify regulations into three main categories –those regulating buildings, open/green spaces, and those determining the use of land. Within these, we examine subcategories, e.g. subcategories of building regulations include those controlling height, volume, density, etc., to understand planning priorities and objectives. Together, results on subcategories create unique regulatory profiles of countries which are then analysed and compared.

We found that certain regulations are common throughout Europe and that others are more context-specific. Some are efficiency or equity-driven, while many are pursuing both goals. Preliminary results show that it is possible to develop regulatory profiles for individual countries, though there is considerable overlap. The discovered groups of common country regulatory profiles add to the aforementioned comparative research on European planning by providing new insights into the relationship between legal-administrative frameworks of planning systems and the nature of their local regulatory practices. Thus, the findings of this study will contribute to comparative research on European land-use regulations.

Keywords:

regulations; land-use planning; planning systems; efficiency; equity

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T_02 PLANNING AND LAW / 1161**A Policy Approach to the Use of Retrofitting in the Turkish Planning System****Author:** Sevkiye Sence TURK^{None}**Corresponding Author:** turkss@itu.edu.tr

Due to its geographical location, Turkey has been and will continue to be exposed to major earthquakes at different times. This situation requires new buildings to be constructed with the performance to meet the earthquake risk on the one hand, and on the other hand, it requires the existing building stock to be made earthquake resistant. For second situation, two important policies in different countries come to the fore. The first one is the retrofitting of existing buildings in terms of earthquake preparedness, while the second one is earthquake-oriented urban renewal, which envisages the demolition and reconstruction of existing buildings. However, instead of integrating these two policies, governments mostly favour the latter. The main motivation behind such a preference is the pressure of the real estate market, the expectation of high earnings in a short time, and the recognition that construction-led growth increases GDP and employment.

A similar approach has been adopted in Turkey. As a matter of fact, after the 1999 Marmara Earthquake, earthquake-focused urban renewal approach was adopted in order to strengthen the existing building stock and the main justification was determined as earthquake in different urban renewal laws enacted since 2004. Especially in the 'Law on the Transformation of Areas under Disaster Risk', which entered into force in 2012, although the use of urban renewal at both single parcel (building) scale and spatial scale is introduced, urban renewal at single parcel (building) scale is mostly used. However, the idea of applying only urban renewal to all existing building stock in order to improve the building stock in Turkish cities against earthquake risk is not realistic in terms of both financial resources and ensuring improvement in a short time.

While it is stated that the transformation of 2 million 200 thousand independent units across the country has been completed since 2012 when the Law No. 6306 entered into force, it is emphasised that only one fourth of the independent units that need to be transformed have been transformed in the 11 years in question. However, it is stated that approximately 6 million dwellings are under risk throughout the country and 2 million independent units need to be transformed urgently. Such a picture indicates that the other option, retrofitting, should also be used as a tool. However, neither the international literature nor the national literature sufficiently emphasises the use of 'retrofitting' as an option, and it also shows that governments and landowners have a negative bias towards retrofitting. On the other hand, the importance of a mixed approach where different policies can be used together instead of a policy dependent on only one tool in earthquake risk reduction has not been discussed. Is it possible to use 'retrofitting' and 'urban renewal' in earthquake risk reduction not as alternatives but as complementary policy approaches? While there are several studies on the use and management of 'retrofitting' in earthquake risk reduction, there are no studies that focus on the dilemma of 'retrofitting' and 'urban renewal' or how these two tools can be used in an integrated manner in earthquake risk reduction.

This paper analyses the dilemma of 'Retrofitting' and 'Urban Renewal' for earthquake preparedness with its legal dimensions and discusses the question of how the two policies can be integrated on the case of Turkey. Focusing on literature review as a methodology, the paper analyses the practices and results of retrofitting existing buildings for earthquake preparedness after 2000. The findings of the study can contribute to policy approaches in earthquake-prone countries with problematic existing building stocks by analysing the dilemma of 'retrofitting' and 'urban renewal' in a comparative and holistic manner.

Keywords:

Retrofitting, Urban Renewal, Legal Aspects, Planning System, Istanbul, Turkey

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T_02 PLANNING AND LAW / 969

EXAMINING THE EFFECTS OF SHORT-TERM RENTAL REGULATIONS: THE INS AND OUTS OF ISTANBUL

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The short-term rental (STR) market has undergone substantial expansion in recent decades. This expansion has been particularly marked in the case of Airbnb, which has led to a proliferation of complexities and challenges, impacting a diverse range of stakeholders, including local residents, the hotel and hospitality industry, operators of STRs, and governmental authorities. While this development has facilitated experiences that are more personalised, localised and authentic, aligning with the romantic vision of the sharing economy and evolving consumer preferences, it has concomitantly given rise to socio-economic and regulatory issues that require urgent monitoring and resolution. These socio-economic and regulatory issues include gentrification, commodification and the reduction in the affordability of housing, as well as the disturbance of local residents and their daily lives. This rising awareness of the potential adverse implications has led to the introduction of new governmental legislations. Nevertheless, the efficacy of these measures remains a subject of debate. A particular difficulty for governments and policymakers is the challenge of implementing regulation on a global level at the local level. While the rationale for regulation may be similar, the regulatory approach varies depending on contextual factors such as the local political context, housing markets and the perceived impact of STRs. The majority of extant research has not, however, addressed these subtle contextual factors in a nuanced manner. As a consequence, a number of significant mechanisms and dynamic forces that determine regulatory pathways have been overlooked. This paper seeks to address this gap by focusing on the Istanbul case.

In Turkey, the central government enacted STR regulation legislation, commonly referred to as the “Airbnb Law,” in October 2023. This legislation, formally designated as Law 7464, is entitled “Law on the Rental of Residential Properties for the Purpose of Tourism and the Amendments of Certain Laws.” The study will demonstrate that, while the government has succeeded in curbing the growth of the city's STR market to a certain extent through a decline in Airbnb rental listings, the increase in daily rates for Airbnb properties represents an undesirable consequence. This may lead to increased interest from the market as a result of the growth in the rent gap. It is further posited that the growth in the number of multi-hosts and the emergence of new actors in the form of companies that provide intermediary services are indicative of the ongoing professionalisation of the host structure. This transformation is believed to present a potential risk of increased real estate value and profitability. Furthermore, the privileges and flexibility permitted by legislation to certain types of buildings may give rise to conflicts with the public interest, and may also prompt commercial actors to utilise it as a marketing strategy for prospective housing and investment in STRs. While the regulatory framework for STRs in Istanbul remains in its embryonic stages, these issues give rise to the question of the extent to which the regulations are possible, effective, and, most crucially, to whom they serve the greatest interest.

Keywords:

Short-term rentals, Regulation, Airbnb, Istanbul, Urban policy

T_02 PLANNING AND LAW / 570

Legal Pathways for Urban Mobility Resilience: A Content Analysis of Policy Documents for Istanbul's Transport Systems

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Urban transport systems are increasingly susceptible to natural hazards and climate-induced disruptions by posing significant challenges for urban resilience and public safety (Mattsson and Jenelius, 2015; Priolo et al., 2023). Ensuring the continuity of transport networks during and after crises is critical for both economic stability and sustainable urban development (Yang et al., 2022). Istanbul, a megacity exposed to seismic risks and climate-related hazards, exemplifies these challenges with its complex urban mobility landscape.

This study investigates how disaster resilience strategies are incorporated into Istanbul's transportation policy and legislative frameworks, which emphasizes the role of law as a catalyst for resilient urban transformation. Using a dataset of 35 policy documents (14 national and 21 local) and employing qualitative content analysis with MAXQDA software, this research systematically evaluates the presence and coherence of resilience-related strategies across multiple policy levels. The analysis is guided by a structured codebook covering seven core categories: (1) governance and policy resilience, (2) risk management and disaster preparedness, (3) physical and structural resilience, (4) operational resilience and service continuity, (5) social resilience and equity, (6) economic and financial resilience, and (7) alignment with international policy frameworks. Sub-codes such as policy integration, risk identification, and infrastructure robustness further refine the assessment criteria. This codebook guides the analysis, which incorporates frequency analysis, code co-occurrence analysis, comparative analysis, and Word Frequency and Keyword-in-Context analyses.

The results reveal critical gaps in the legal frameworks governing urban resilience in Istanbul's transport policies, particularly regarding policy integration, equity in disaster preparedness, and alignment with international resilience frameworks. Findings highlight inconsistencies in the enforcement of disaster preparedness measures across governance levels and an uneven distribution of resilience strategies across policy categories.

A significant contribution of this study is its identification of areas where legal reforms and policy adjustments can strengthen disaster resilience within Istanbul's transportation planning framework. Key recommendations include enhancing the clarity and enforceability of resilience measures in both national and local legislation by fostering multi-level governance collaboration. This research offers theoretical and practical insights into the intersection of spatial planning law and disaster resilience by emphasizing the critical role of legal frameworks in shaping adaptive, equitable, and sustainable urban mobility systems. By presenting policy misalignments and resilience gaps, it aims to inform policymakers seeking to enhance disaster preparedness and transport resilience in high-risk urban environments.

Keywords:

content analysis; disaster preparedness; Istanbul's transportation system; urban mobility resilience

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T_02 PLANNING AND LAW / 1063

Nature and legal framework of the Privately Managed Public Spaces: opportunity or risk for a just city? The case of Milan

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Public space's role in urban quality is widely known: it defines the city's structure, provides material support for community life, and represents civic and religious powers and values. The mechanisms of public space production are manifold: they can be either the result of an urban plan realized by the public entity on public areas, or the result of more complex urban projects promoted by private actors, in compliance with the national laws and policies.

Public space has assumed an even more crucial role in urban transformation processes in Western cities that no longer expand, but regenerate under increasingly frequent conditions of scarce - spatial and economic - resources. Public space is not only the share to be reserved to the public entity to guarantee the urbanization charges due, but it has become an asset that gives value to investments and projects.

Privately Owned Public Spaces (POPS) are a typology of spaces consolidated in the Anglo-Saxon environment and tradition (Kayden, 2000). Similarly, what we call Privately Managed Public Spaces (PMPS) are also spreading in other countries where public space was traditionally owned (or sold for public use) and managed by the public, multiplying the ways in which private actors conduct the management dimension (Carmona et al. 2008). How this management is done and its implications and effects are still to be investigated.

The paper intends to discuss the first outcomes of ongoing research conducted by an interdisciplinary group of urban studies and administrative law scholars on Privately Managed Public Space in Italy, specifically in Milan. Milan is an interesting case study for several reasons: it is a city in which the real estate market has been quite active in the last few years, carrying out several interventions that have also involved the realization of spaces for public use; there have been several experimentations of public-private agreements of various kinds with different actors and subjects (from the third sector to associations to developers); public space has been placed at the center of the urban strategies of the last urban plan, both at the urban and neighborhood scale.

The paper provides an initial taxonomy of cases in which private entities manage public spaces of different natures, of whom it analyses the legal framework (the covenants, agreements, and contracts that define the public-private partnership on their management). In order to make explicit the nexus between nature, uses, management of spaces, and their publicness and to understand if and how these forms represent an opportunity for local authorities in economically weak conditions to manage better and maintain public space or risk for accessibility and the public dimension and to reflect on what cautionary guidelines are needed to guarantee a broad right to the city (Lefebvre 1968, Fainstein 2010, Gehl 2010)

Understanding the nexus between the nature of the analyzed public spaces (dimensional characteristics, material qualities, uses and urban role) and their forms of maintenance and management (defined by different legal frameworks) means bringing different disciplinary fields - urban analysis, ethnography, planning, legal studies, and administrative law - into tension in order to understand their mutual interdependency and what is needed to grant their publicness.

Keywords:

Privately Managed Public Spaces (PMPS); Public Space; Management; publicness; Milan

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T_02 PLANNING AND LAW / 1513

Land ownership and cultural landscape patterns A case study of the Upper Horehronie, Slovakia

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The paper presents various forms of ownership in Slovakia, their historical context and changes over time. The theoretical part focuses on the forms of land ownership relations in Horehronie, their specifics, uniqueness and use in the past. Results from field research, structured interviews and simple cartographic methods applied to the case study of Horehronie, provides an exploration of these forms of ownership relations and their functioning in the present. Specifically, the research will focus on the Upper Horehronie region. The choice of the Upper Horehronie case study area is based on previous knowledge and also on research that has been carried out in this area. The natural boundaries of Horehronie and the economic isolation of the area have elevated the territory of the Upper Hron into a separate cultural area. With the stabilisation of the settlement structure, the emergence of feudalism and the establishment of land ownership in the 11th century in what was then Hungary (today's Slovakia), a diversified traditional landscape emerged, which was shaped mainly by the influence of ownership relations. The Hungarian law of inheritance, which ensured the inheritance of land among all descendants, formed the basis of a small-scale structured agricultural landscape. These ownership relations have had a significant impact on the way the landscape continues to

function, extending into the present day. The basic forms of property law that will be discussed in this article are private ownership and fractional undivided ownership. These forms of private ownership and fractional ownership have had and continue to have significance and relevance to land use today. In addition to private ownership of land farmed individually by individual owners, there were also forms of collective farming in the Horehronie region on land that was indivisibly owned by a collective. The forms of undivided share ownership in Slovakia include land communities: forest communities and pasture communities. Forest and pasture communities were also in existence in the past in the Horehronie region. They laid the historical foundation and the relationship with the landscape. Of these, the forest community form has been preserved. In Slovakia, the current challenge is to make effective use of these forms of ownership relations for the efficient use of land. It is land management that is a key instrument for improving the structure of the landscape in Slovakia. In 2019, the Government of Slovakia approved the Draft Measures for the accelerated implementation of land adjustments, which have no legislative basis. The essence of these measures is to carry out land adjustments, in all cadastral territories in Slovakia, if they have not yet taken place in a given cadastral territory. These land adjustments have the potential, particularly in relation to the efficient use of land, the expansion of a number of landscape features, the increase of biodiversity in the landscape and, last but not least, the promotion of a sustainable cultural landscape. By linking to historic functioning communities, they can also be the basis for large-scale changes in the future in the context of landscapes that can be seen as part of our identity. Theoretical research, field research and structured interviews with interested communities capture a changes over time in the landscape of Horehronie. An assessment of the current state of private and share ownership in Horehronie, contributes significantly to further research and upcoming land reform in Slovakia.

Keywords:

Land policy, climate mitigation and adaptation, Cultural Landscape

T_02 PLANNING AND LAW / 936

Climate adaptation in multi-level legal and planning policy frameworks: using spatial justice to identify barriers to meaningful implementation

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Coastlines and estuarine river edges are changing. With sea levels rising, and continued coastal protection increasingly being financially and practically unviable, increased thought is being given to managing a retreat from vulnerable areas along urban river edges and coasts and learning to live with water. Flooding, however, isn't just about waters rising. National and international laws, policies, economic frameworks and social processes produce and sustain unjust impacts from natural processes. Through decoupling the risk factors of hazard, exposure and vulnerability and applying a spatial justice methodological framework to coastal adaptation, the ethical, socio-economic and environmental challenges working with adapting to a changing climate can be better understood.

Working in the United Kingdom context this research seeks to understand how national, regional and local legal and planning governance, funding and land ownership frameworks enable or limit adaptation planning. Increasing this understanding allows for the

implementation of adaptation pathways to be understood in their wider socio-spatial context. The planning and legal systems that apply to local and regional spatial decisions are often the locus for concept conflicts between present and future land uses. As the need to implement climate adaptation 'on the ground' increasing in urgency, understanding how this agenda can be supported by current legal, land ownership and planning policy frameworks is crucial for enabling resilient places for future generations.

This talk asks the question "why is climate adaptation so difficult to implement?". It works towards an answer by exploring the legal and policy frameworks, along with land ownership regimes, into which 'adaptation thinking' is being applied. With a focus on coastal adaptation, the challenges faced in contending with an increasingly (anthropogenically) hostile climate are grounded in legal theory, planning law, land ownership and overarching governance frameworks. The spatial justice lens is useful here in that it allows us to develop a deeper understanding of the challenges of implementing adaptation pathways.

This analysis of multi-level governance, across law, policy and land ownership, allows us to explore where adaptation has the power to enact change within current land management and planning frameworks. At which level of governance does adaptation need to be championed in order for implementation to occur? Where are the windows of opportunity, and where are the barriers for successful, inter-generationally just outcomes?

Keywords:

Multi-level governance; planning law; spatial justice; land ownership; climate adaptation

T_02 PLANNING AND LAW / 1394

The role of planning law in regulating urban ventilation: The case of Poland

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In the face of the climate crisis, compact development is becoming a challenge to provide adequate urban ventilation. Dense, high intensity building development reduces wind velocity, leading to stagnation and accumulation of pollutants in the air and an increase in the urban heat island (UHI) phenomenon (Poćwierz & Zielonko-Jung, 2021). In turn, air pollution and the UHI phenomenon negatively affect the quality of life of residents and the environment (Erell et.al., 2015). These phenomena also have a negative impact on human health. Every year, the number of people suffering from illnesses and dying due to higher temperatures and poor air quality increases worldwide (Banach, M. 2022; Shi L. et.al.2020).

This study analyses the legal instruments in force in Poland at different scales of city planning (micro, meso, macro) and their relevance to the effective management of urban ventilation. The changes in regulations over the last 20 years in Polish cities were compared in terms of their adaptation to the need for urban ventilation. Key areas for improvement were diagnosed. The results of the study highlight the need to develop consistent regulatory guidelines for a more sustainable and healthier urban environment.

Keywords:

spatial planning law; city ventilation; air stagnation; climate mitigation and adaptation

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T_02 PLANNING AND LAW / 1421

Suing Like a City: How plaintiff cities pursue climate litigation against the state and corporations

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As in previous waves of public interest litigation (Morris 2016), plaintiff cities are turning to the courts in their efforts to seek climate justice against more powerful opponents. But can, and are, cities leading the way on climate justice? Here we analyse plaintiff city litigation with a climate-relevant purpose –what we call ‘city climate litigation’–as the latest incarnation of an old strategic tool to pursue climate action and fairer, more effective climate governance (Swan 2018). We analyse 97 city climate litigation cases collected from international legal databases, with a focus on the unique city interests plaintiff cities seek to protect through litigation (Clopton and Shoked 2023). We summarise our review with key statistics and geographical trends (cf Setzer and Higham 2024). We then turn to discuss cities’ climate litigation strategies in more detail, including what challenges cities face and how cities contribute to broader climate litigation. Our analysis is divided in two based on the category of defendant: claims against the state and claims against ‘carbon major’ corporations. This reflects basic differences in the nature of cities’ legal claims against each type of defendant, as well as the different strategies and challenges used against each. We find that many city climate litigation cases remain pending before the courts. However, we demonstrate that cities led previous waves of climate litigation and currently lead many pending ‘second wave’ cases identified in the broader climate litigation literature (Setzer and Higham 2024). But how long will cities continue to lead the way on climate justice in the courts? We conclude with key cases to watch in the years ahead and some reflections on the limits of city climate litigation, based on historical dynamics in public interest litigation.

Keywords:

city climate litigation; climate justice; local government; climate governance

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T_02 PLANNING AND LAW / 1891

Local governments' strategies of linking affordable housing with urban village redevelopment in China: Reallocating property rights

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Linking affordable housing with urban redevelopment has emerged as an approach to promoting housing affordability in cities facing fiscal constraints. Drawing on the case of China, the research explores why and how local authorities use innovative strategies to secure affordable housing through urban village redevelopment. By conceptualizing the implementation of innovative instruments as a process of gradual institutional change in property rights regimes, the research has three key findings. First, struggles to balance political tasks of affordable housing provision and land constraints drove local authorities to experiment innovative strategies. Second, the innovative strategies reallocated a bundle of property rights among local governments, urban villagers and developers in urban village redevelopment. Third, the distributional effects of the strategies hinder the institutionalization potential. The research contributes to deepening the understanding of institutional change and highlights the distributional implications of property rights regimes. Besides, it offers insights into local governments' agency in urban governance.

Keywords:

Institutional change; Property right; Affordable housing; Urban redevelopment

T_02 PLANNING AND LAW / 129

Use of New Municipal Fiscal Powers for Sustainable Urban Development: Development and Application of a Strategic Financial Planning Method in the City of Mascouche, Québec (Canada)

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Over the years, the Government of Québec has granted Québec municipalities extensive monetary levy powers. Aiming to enhance their autonomy and recognize their role as proximity governments, the provincial government provided municipalities with general taxation and regulatory charges powers in 2018 (Tremblay-Racicot et al., 2023). In 2023, additional powers were introduced, enabling municipalities to vary property tax rates based on different sectors or any characteristic of the property assessment roll, excluding the property's value.

Although these new powers do not render municipalities fully financially autonomous, they allow diversification of revenue sources and reduce dependence on property taxes (Federation of Canadian Municipalities, 2024). They also offer opportunities to achieve various public policy objectives, such as mitigating or adapting to climate change, combating land speculation, or promoting a circular economy, through ecofiscal measures or by making property taxes more progressive. For instance, municipalities can impose regulatory charges targeting major traffic generators to encourage transportation management plans, tax vacant land or buildings, address underdensity through floor area ratio taxes, or impose higher tax rates on luxury properties ("monster houses") and lower rates on denser housing or areas with vulnerable populations.

In a pre-electoral context, many municipal officials and managers are questioning how to prudently use these new legislative powers, particularly as cities have historically tended to keep tax rates low while relying on new property assessments to grow their tax base. To address this, the City of Mascouche, located in Quebec, sought the services of our research team to assist in identifying and planning fiscal measures to prioritize over the next five years. This collaboration resulted in the December 2024 submission of a 2025–2030 Strategic Revenue Plan, offering recommendations to guide the City in prioritizing and phasing the deployment of fiscal tools (Tremblay-Racicot et al., 2024).

This paper aims to showcase the novel methodology developed to identify priority measures among over 25 documented fiscal tools. These tools were selected based on a diagnostic assessment of the City's financial profile and four prioritization criteria: (1) fiscal potential; (2) sound administrative management, including legal risks; (3) social acceptability and equity; and (4) environmental efficiency. The application of these criteria will be detailed, as well as the final choices made by the municipal administration and elected officials.

While these decisions reflect difficult trade-offs between fiscal potential and environmental efficiency, administrative simplicity and legal risk emerged as dominant factors guiding the choices. The co-development process and exploration of new possibilities also led to the prioritization of innovative, progressive fiscal measures that are environmentally sustainable. Combined with measures adopted in other Quebec municipalities, these advancements suggest a paradigm shift in the financial planning approaches of Quebec municipalities.

Keywords:

Eco taxation; Regulatory charges; General taxation powers; Fiscal planning

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T_02 PLANNING AND LAW / 1897**No net land take? A uniform European policy but varying regulations and property rights****Author:** Rachelle Alterman¹¹ *Technion - Israel Institute of Technology***Corresponding Author:** alterman@technion.ac.il

In international comparative terms, the EU has excelled in adopting a set of nature-protection policies and directives. However, these have not been enough to restrain urban and infrastructure development that continues to consume agricultural land and open landscapes. Aware of the urgency caused by climate change, the EU has adopted a set of policies that switches the focus from designating protected areas to restraining the “culprits” –urban areas and commuting zones. EU agencies have also proposed a variety of legal and economic instruments that the different member states are encouraged to adopt and apply.

However, the uniform net-zero policy inevitably meets a variety of existing legal contexts and the realities of property rights. Even though these may seem similar to non-expert eyes, the legal contexts differ in many ways that are likely to impede or support the no net land take policy. Because land-related laws in each jurisdiction are anchored in a complex web of several laws, ongoing regulations, and differing financial and socio-economic contexts, the hoped-for adoption of new instruments is likely to meet more difficulties than expected.

The paper will illustrate the impacts of cross-national differences through one selected topic shared by any planning-law framework: Is there a right to compensation payments or other legal remedies when government bodies seek to roll back previous planning decisions, thereby causing a decline in the value of real property? Are governments legally and financially ready to abolish or divert preexisting development rights? To illustrate the impact that such legal differences can have on the success of the no net land take policy, I will draw on my previous comparative research spanning 14 jurisdictions. The findings showed that no two countries have the same legal response to these questions. The paper will present several cross-national examples where existing laws and property rights can differentially promote or inhibit the implementation of the no net land take policy. These questions point to the need for targeted in-depth comparative research on current and anticipated interaction between differences in laws and regulations across EU countries and how they have already impacted the progress of the no net land take policy, and what are projected expectations.

Keywords:

open space preservation; land use regulation; compensation rights; property rights;

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T_02 PLANNING AND LAW / 215

Land Policies in Europe - Land-use planning, property rights, and spatial development

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In many European countries, land-use planning is facing increasing and oftentimes contradictory challenges. The increasing demand for housing is at odds with the policy objective of reducing land take. Densification is often seen as a panacea, yet it entails new implementation challenges, particularly in situations of fragmented property rights. In order to understand how land policy struggles with ever-increasing challenges such as land take, housing shortages, and densification, it is essential to look closely at how land policy is enacted in specific situations, what instruments are used, what actors are involved in the processes, and what the outcomes are.

This contribution shows how in different countries across Europe, land policies are strategically enacted on the local level. It explores the relationship between private landowners and public planning authorities based on 12 specific case studies on land policy in different European countries (AT, BE, CH, CZ, DE, ENG, FI, FR, NL, NO, PL, SE). The cases are a collection of qualitative analysis that introduce how land policy is perceived and pursued in practice in different countries. These stories follow a systematic 5-step approach describing the understanding of land policy, the approach to land, the actors involved, the underlying institutions, and conclude with a reflection of each case within the national context.

The comparative approach provides a structured reflection when facing practical challenges or considering legislative adjustments, empowering them with knowledge and insights. Using the elements land, actors, and institutions to develop a perspective across the cases, we derive a common understanding of land policy and identify how different countries deal with property in land.

The contribution focusses on four main conclusions, which we derive from this comparative research:

- First, the case studies highlight that land policy is often closely related to spatial planning. It differs in two dimensions: (1) Land policy addresses both, allocative and distributive aspects of land property, and (2) it entails a strategic and an operational level of public policy. This allows to differentiate land use policy, land use planning, land tenure policy, and land management from land policy.
- Second, the various cases show how land policies involve a series of intentional decisions or activities led by public actors, sometimes in cooperation with private actors, to address collective issues related to land use and allocation. Therefore, understanding land policies also requires understanding these instruments and how they are strategically combined.
- Third, the comparative insights underscore that differing land policy strategies are rooted in varying interpretations of the role of landowners in land policy. These interpretations are often more decisive than the specific land policy instruments used.
- Forth, the cases reveal a spectrum of how public actors conceptualise the relationship between property rights and land policy. At one end, there is the tendency to overlook landowners as key stakeholders in the planning process –which sometimes leads to almost fatalistic behaviour on the part of planning authorities. At the other end, landowners are seen as partners in the collaborative development of spatial projects. These conclusions illustrate that land use planning and property rights are well-established in individual countries, but there are also viable alternatives. Exploring approaches abroad reveals a deeper understanding of land-use planning, property rights, and spatial development.

Keywords:

Land policy; comparative; property rights; public policy; planning law

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T_02 PLANNING AND LAW / 1177

Law as a Catalyst for Change in Water Supply Policies in Brazil: The Debate on the National Law for Social Water Tariffs

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The rights to water and sanitation were recognized as autonomous, specific human rights “essential to the full enjoyment of life and all other human rights” by the General Assembly of the United Nations (UN) on July 28, 2010, through Resolution A/RES/64/292. This resolution made it clear that providing universal access to drinking water and sanitation is an obligation of governments. In other words, it is the duty of the state to establish public policies to ensure the rights to water and sanitation—implying the removal of both physical and economic barriers that hinder universal access.

Drinking water affordability is among the principles highlighted in the UN resolution. If water services are available but prohibitively expensive, people with insufficient financial means may be forced to rely on cheaper but less safe water sources or practices or to sacrifice other basic rights, such as food, housing, and health. In many countries, social tariffs are a means to ensure affordability and guaranteed access to services for the most vulnerable users.

In Brazil, a new law from June 2024 establishes national guidelines for the Social Tariff for Water and Sewage (the “Social Tariff Law”) that must be adhered to by both public and private service providers. This legislation affirms that basic sanitation must be managed under specific guidelines, including that user payments for services must be reasonable, socially equitable, and affordable.

According to the law Social Water and Sewage Tariff benefits users with a per capita income of up to half (1/2) of the minimum wage, provided they meet one of the following criteria:

- Belong to a low-income family registered in the Single Registry for Social Programs (CadÚnico) or its successor registry system; or
- Belong to a family that includes:

A person with a disability, or

An elderly person aged 65 or older who proves they lack the means to support themselves or receive support from their family and who receives, under Articles 20 and 21 of Law No. 8,742 of December 7, 1993 (the Organic Law of Social Assistance), Continuous Benefit Payment (BPC) or an equivalent successor benefit.

Article 13 of the law established a *vacatio legis* period of 180 days, which ended on December 11, 2024. Between June and December 2024, the law was the subject of intense public debate in various hearings. Some stakeholders in the water sector, including public and private providers and regulators, argued against the law. They claimed it could

lead to the economic unsustainability of water services in many Brazilian municipalities where a significant number of users benefit from social programs, resulting in an unsustainably high number of beneficiaries under the social tariff.

Conversely, social movements advocating for the human right to water supported the law, arguing that by enacting the Social Tariff Law, the Brazilian government fulfills part of the positive obligations inherent in the human rights to water.

This paper aims to explore the public controversies surrounding the national social tariff law for water. It recognizes the law as a fundamental instrument of public policy designed to address the challenges of ensuring universal access to water services in a context of increasing economic uncertainty.

Keywords:

human right to water, affordability, social tariff, public debate, Brazil

T_02 PLANNING AND LAW / 367

Anticipatory politicization management: the case of No Net Land Take

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It is now widely accepted that EU-policies, particularly environmental, have considerable impact on spatial planning in the member states (Evers and Tennekes, 2016; Fernández-i-Marín et al., 2024; Purkarthofer, 2024). This impact can be felt at in all phases of the policy cycle: it can frame the discussion on planning issues (agenda setting), affect the types of policy interventions considered, speed up or slow down planning processes and influence physical development (Tennekes and Evers, 2024). As EU-policies become entwined with everyday conflicts over land use in practice, they can become politicized long after being adopted. Consider, for example, how media reports on housing developments frustrated by air or water quality standards or endangered species serve to mobilize Eurosceptic sentiments in domestic politics. Or consider how domestic politicization is prompted by litigation in the context of the enforcement of European policy. The decisions (hence jurisprudence) made by the Court of Justice can blur the distinction between policymaking and the judiciary, at least in the court of public opinion. This can have ramifications for the next wave of European policymaking by politicizing an otherwise technical matter (Feindt, Schwindenhammer and Tosun, 2021).

The case of the No Net Land Take (NNLT) objective, contained in the Soil Monitoring Law legislative proposal is illustrative (European Commission, 2023). By striving to halt all greenfield development by 2050, this goal cuts to the heart of planning practice – but has hardly entered the planning debate in the Netherlands, one of the member states that would be most affected (Evers, 2024). A quantitative analysis of the public consultation clearly shows the extent to which NNLT was depoliticized: there was an overwhelming support for binding legislation on soil quality, and of the need for rules on NNLT in particular (Evers, Soromenho and Savini, 2024). Like the Nature Restoration Act before it, it was mainly during the Parliamentary and Council phases that opposing viewpoints became heard and mobilized. This resulted in the production of a multitude of amendment suggestions, some of which are contradictory and most weakening the

original proposal. At the time of writing, the jury is still out (i.e. the ‘trialogue’ between the three European institutions is still forthcoming).

A form of politicization, however, was achieved within the Netherlands by means of an ongoing interdepartmental assessment instigated to determine the national standpoint in the European Council. This paper argues the Dutch method could be integrated into the European policymaking process to manage or even reduce the politicization of policy after it is too late to change it (Bressanelli, Koop and Reh, 2020; Schimmelfennig, 2020). It reflects on the advantages and disadvantages of escalating an issue politically at a particular moment in the process, and whether there is an ideal moment for this (i.e. early or late politicization). More generally, it contributes to the literature on Territorial Impact Assessment and top-down Europeanization by considering a case study grounded in land-use planning.

Keywords:

European legislation; land take; Europeanization; politicization; policy and legislative process

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T_02 PLANNING AND LAW / 280

The Impact on the Assessment of the Urban Silhouette and Aesthetics of the Socio-Political Context: A Case Study of Istanbul

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ABSTRACT

The ongoing trend since the 1980s is elucidated by scholars across several disciplines using the frameworks of globalization and neoliberalism. The field of urbanization and

planning is no exception to this situation. Like many countries, after the 1980s, Turkey underwent significant socio-political changes that profoundly impacted the country's urban decisions. Structural adjustment with export promotion, control of capital inflows, the elimination of the controls on foreign capital transactions, and integration into the global markets with commodity trade liberalization were the main characteristics of this period. The neoliberal state understanding that began in the 1980s, developed as a result of policies regarding the restructuring of the state in the neoliberal period in the country. During this era, urban land has transformed into a commodity, significantly impacting capital accumulation through exchange value. For the neoliberal state, which seeks perpetual growth in urban regions, project developers and international investors are crucial to realizing this objective. In this context, central administrations appear to have carried out facilitating procedures to solve legal problems that may arise against project creators. In the context of facilitation, changes in existing laws, plans and/or new legal regulations, plans and institutional structures are put into effect. Large-scale investments resulting from these regulations have started to affect the urban silhouette and aesthetics. In Turkey, the government's economic policies are mainly focussed on tourism, housing and related construction sectors. The impact of tourism, housing and construction policies has had the effect of transforming urban spaces, but in this transformation, Istanbul's historical and natural environmental features and urban aesthetics have been mostly ignored. It has created uncertainties in the evaluation of urban silhouette and aesthetics.

This paper analyses the impact of the socio-political context on the evaluation of urban silhouette and aesthetics through three different examples in Istanbul. These three examples reflect different periods of neoliberal policy implementation. These examples are; 'Süzer Plaza', 'Park Hotel', and '9/16 Towers'. As is well documented, all three projects have been the subject of extensive debate in terms of their location in a protected historical environment and their direct impact on the urban skyline and aesthetics. The primary focus of the discourse surrounding these illustrations is the discord between modern and traditional urban design and vertical urbanisation, in terms of urban silhouette and aesthetics. In this study, the impact of these investments and structures on the urban silhouette and aesthetics, as well as the debates and legal actions that accompanied them, will be examined for each example based on the sociopolitical context of the time. The aim of the study is to consider the spatial area circumstances of these significant constructions, the legal dimension, the socio-political dynamics of the time, and the conversations that occurred.

The study's findings demonstrate that the socio-political context exerts a significant influence on the configuration and aesthetic principles employed in the processes under examination. This influence manifests differently, resulting in divergent resolutions for comparable issues in the context of urban law. This observation suggests that context influences the process in a circumstantial way.

Keywords:

Socio-Political Situation, Urban Interventions, Urban Silhouette and Aesthetic, Istanbul.

T_02 PLANNING AND LAW / 653

The Rule of law in the planning system -a view on the Global South

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Planning systems can be described as an amalgamation of legal structures, power relations, governance dynamics, and undoubtedly, a network of various actors affecting the form and function of the built environment. Planning systems are the main instrument

with which governments control and manage development. For many planning practitioners and theorists in the Global North, considering planning systems as legal structures often suggests that a well-defined framework with foreseeable outcomes guides the governance of urban development. However, many studies and considerable evidence from practice show that in many countries of the Global South, the legal structure of planning systems demonstrates entirely different mechanisms –often leading to unanticipated outcomes. As understanding the intricacies of power relations in planning systems of the Global South is becoming an enigma for planning theorists and practitioners, significant efforts have been made to conceptualise these contexts by “seeing from the South”(see e.g. Wattson, 2009; Roy, 2005). Describing such planning environments as conflicting rationalities is merely one perspective towards Southern, top-down, informality-dominated, uncertain, and poorly governed planning systems.

In line with current enquiries on Southern planning systems, this paper focuses on one of their substantial aspects, which outlines a factual legal landscape of such planning systems: the rule of law. The rule of law provides a contextually realistic picture of the extent to which the planning system is managed by laws and regulations, in addition to providing theorists and practitioners with an a priori perception of the planning legal setting. In this respect, this article investigates the Iranian planning system by highlighting examples from real-world projects and planning events to present its particularities and illustrate how different degrees of rule of law (RoL) affect the power dynamics and consequently the outcomes of planning processes. To evaluate the Iranian planning system in terms of RoL, a thin definition (Rodriguez, 2010) of RoL has been employed to avoid value judgments and generalizations of Northern institutional and fundamental values, which are often equated to universal definitions of substantial RoL (Versteeg & Ginsburg, 2017). The findings of the research suggest that most planning systems in the global South are greatly defined by weak rule of law, and therefore, non-legal authority, and other informal types of power, are the main avenues of practicing power for those involved in the planning process. This study contributes to the growing body of literature on the Global South and offers valuable insights for policymakers, planners, and researchers interested in promoting equitable and sustainable development in these regions. The paper concludes with recommendations for adapting the planning system to the weak rule of law in the South.

Keywords:

Rule of Law; Planning System; Global South;

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Track 3 | MOBILITY

T_03 MOBILITY (A) / 1040

Urban Vitality in Motion

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This study investigates the interplay between walking, urban vitality, and the distinction between static (residential) and dynamic (activity-based) exposures in urban environments. Using GPS tracking data from participants in Palma de Mallorca, we examine the vitality of spaces encountered during walking trips compared to residential environments. The findings reveal that walking predominantly occurs in moderately vital areas, avoiding extremes and offering a consistent and equitable urban experience. This aligns with Jacobs' concept of the "sidewalk ballet," where pedestrian activity sustains and reflects urban vitality.

Dynamic exposure emerges as a nuanced framework that transcends the limitations of static residential analyses, highlighting the fluid and context-dependent nature of urban interactions. Key results demonstrate the decoupling of residential characteristics from walking environments, with walking acting as a social equalizer, bridging disparities in urban vitality across neighborhoods. Accessibility is identified as a critical factor, with high-accessibility areas providing slightly higher vitality levels and more consistent pedestrian experiences. However, the analysis also reveals gaps in functional diversity and building variety along walking routes, underscoring the need for targeted interventions to enhance pedestrian-friendly spaces.

This study contributes to urban planning by emphasizing the role of walking in mitigating spatial inequalities and fostering inclusivity. It advocates for distributing vibrant, walkable spaces throughout cities to ensure equitable access for all populations, while addressing systemic barriers that limit exposure to highly vibrant areas. By integrating dynamic exposure into urban analyses, planners can develop more sustainable and engaging environments that prioritize pedestrian mobility and connectivity. These findings highlight the transformative potential of walking as a cornerstone of equitable urban design and sustainable mobility in contemporary cities.

Keywords:

urban vitality; walking; GPS

T_03 MOBILITY (A) / 1983

Positive and Normative dimensions of accessibility by proximity for supporting a fair and sustainable 15 min city model

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The presentation introduces several dimensions of the concept of accessibility by proximity that may better frame the actual contribution of proximity in different planning experiences finalised to promote the Xmin city model. Challenging an acritical use of the proximity concept based on the physical spatial-temporal conditions and a focus mainly on dense compact urban contexts, the presentation proposes to enrich this concept by combining a functional dimension of proximity, with a relational one, focused on the exchange of resources and collaboration spontaneously activated in a community, sharing specific accessibility-related needs, problems and mobility opportunities.

Based on this, the presentation aims at

- Introducing some considerations on the relationship between the Xmin city model and the accessibility by proximity concept and its relevance for a potential paradigm shift for reorienting transportation and land use planning toward increasing the availability of services, activities, and social contacts in proximity to reduce the need for travel, towards less extensive but more active and sustainable forms, and helping to reinforce internal community ties (Ferreira et al. 2003, 2007).
- Proposing a declination of proximity (as a mean) and accessibility by proximity (as an end) that can contribute to deal with the challenging issues in the implementation of X min city. Among them: the risk of standardising people's needs and underestimating the demands of different social groups, reproducing existing inequalities (Cooke et al. 2022); and limited replicability in several different socio-spatial as in suburban, peri-urban and rural areas (Guzman et al., 2021); an increase in housing prices, gentrification and displacement of vulnerable populations (Dunning et al. 2021; Haarstad et al., 2022; Poorthuis & Zook, 2023) exacerbating social divides (Guironnet and Halbert, 2020).
- Presenting an operative framework for dealing with new metrics of accessibility by proximity and its positive and normative dimensions, based on the results of two research projects (<https://ex-tra-project.eu/>; <https://commonaccessproje>).

Keywords:

Xmin city, accessibility by proximity, functional proximity, relational proximity

T_03 MOBILITY (A) / 310

Interpretable Spatial Machine Learning Insights into the Impact of Built Environment on Intercity Commuting

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With the enhancement of intercity travel convenience and the effective sharing of urban public resources, commuting patterns have evolved beyond single-city boundaries, increasingly reflecting inter-regional mobility. Compared to intra-city commuting, intercity commuting is characterized by a larger spatiotemporal scope, longer commuting durations, and a greater reliance on transportation infrastructure. Consequently, the choice of intercity commuting is influenced not only by the physical distance between home and workplace and housing costs, but also by factors such as the level of economic development, the availability of public services, and the configuration of intercity transportation networks. Recent research has indicated that the built environment exerts a non-linear and spatially heterogeneous effect on intercity commuting distribution, revealing the complex interactions between these factors (Li and Niu, 2022). However, few studies have managed to address both two characteristics simultaneously.

The study focuses on Nanjing and Ma'anshan as case studies, two cities with a high degree of urban integration in China. The area is divided into 1,756 traffic analysis zones, with data from one month of cellphone signaling analyzed. Preliminary results reveal that, there is an uneven distribution of intercity commuting flows, with north-south commuting significantly surpassing east-west commuting in volume and a pronounced 'center-to-center' spatial distribution pattern. To further explore the impact of the built environment on intercity commuting, the study employs an interpretable spatial machine learning framework that combines the Geographically Weighted Random Forest (GWRF) model with SHapley Additive exPlanations (SHAP) analysis, uncovering the complex spatial factors influencing intercity commuting patterns.

The GWRF model effectively combines the spatial analysis capabilities of Geographically Weighted Regression (GWR) model with the predictive power of Random Forest (RF) model to better reveal the potential spatial heterogeneity and nonlinear effects of the variables, while SHAP enhances interpretability (Wu, Zhang and Xiang, 2024). Preliminary results show that employment density and public transportation coverage are the primary factors influencing the attractiveness of intercity commuting (with importance values of 16.34% and 14.47%, respectively). The workplaces of intercity commuters typically exhibit spatial agglomeration characteristics, with commuting attractiveness increasing sharply when employment density exceeds 4,500 jobs/km², demonstrating the nonlinear positive effect of employment density on commuting. Furthermore, since intercity commuters typically face longer travel distance, their demand for convenient transit transfers is higher (Bouzouina et al., 2021). However, the study also finds that the attractiveness of commuting plateaus when transit route density exceeds 106 routes/km², indicating a saturation effect of transit coverage and accessibility on intercity commuting. From the commuting generation perspective, land prices and educational resources emerge as the two critical influencing factors (with importance values of 19.56% and 13.62%, respectively). This suggests that when housing prices in large cities exceed the affordability threshold for intercity commuters, they tend to choose residence in neighboring cities, aligning with findings from previous studies (Chen, Ge and Pan, 2021). The strong positive relationship between educational resources and intercity commuting is attributed to the abundance of educational resources in Nanjing and proximity-based enrollment policies that attract residents from nearby cities.

Based on the above findings, the study proposes differentiated optimization strategies to enhance urban morphology and transportation layout, thereby improving intercity commuting efficiency. The results provide a theoretical foundation for optimizing urban design and transportation networks, as well as practical guidance for urban planning and transportation policy, particularly in the context of promoting the integration of urban agglomerations and metropolitan areas, offering significant practical value.

Keywords:

Intercity Commuting; Built Environment; GWRF model; Nonlinear Effects; Spatial Heterogeneity

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T_03 MOBILITY (A) / 749**Impact of Multi-Station Aggregate Hub Redevelopment on Surrounding Urban Areas: A Case Study of London's King's Cross****Authors:** Yufei Qu¹; Yuying Zhu¹; Xiaoxi Zhang¹; Chuan Wang¹¹ *Southeast University***Corresponding Authors:** mimozzzzzzz@163.com, 2596781507@qq.com, chuanwang@seu.edu.cn, 2757140597@qq.com

In the past decades, the condensation of urban networks of metro and rail lines is re-shaping the spatial configuration of cities and transforming travel patterns, thereby influencing urban development patterns and intensities. (Desjardins et al., 2014) With continuous urban growth, the densification of metro and rail networks have given rise to multi-station aggregate hubs formed by interrelated stations. These hubs, emerging as creative industry and high-quality life cores, profoundly affect the development of their surrounding urban areas. (Cao, 2022) However, existing research on the integration of transport stations and surrounding land use has primarily focused on one single station (TOD). As metro and rail lines become increasingly interconnected, multi-station aggregation has become a new trend in large metropolises, often occupying core urban areas or serving as critical urban transport hubs. (Kidokoro, 2020) Despite this, there is a notable lack of systematic research on multi-station hubs and their closely associated urban functional districts.

This study focuses on the case study of King's Cross, London. The studied area is delimited into core, primary impact, and potential impact zones to analyze the relationship between transport, functionality, and spatial renewal using spatiotemporal geographic data. The historical data used are from the years 2007, 2011, 2015, 2019, and 2023, following the substantial completion of King's Cross Station. The study explores the mechanisms through which the redevelopment of multi-station aggregate hubs influences surrounding urban development. First, the spatial evolution in the past two decades is traced, outlining the renewal processes of surrounding districts based on the development trajectory of the King's Cross–St Pancras multi-station aggregate hub. Second, changes in transport networks, functional vitality, and development intensity are quantitatively analyzed and visually represented in GIS, revealing the driving effects of multi-station transport redevelopment on the surrounding area. Finally, redevelopment modes within the study area are classified and summarized in terms of forms of reconstruction and spatial layouts.

The findings indicate that most developments in the King's Cross area are concentrated within the core zone and its adjacent area. The intensity of development momentum and the driving force for spatial expansion are positively correlated with the distance to the multi-station aggregate hub. The ratio of renewal building areas in the three zones of King's Cross—core, primary impact, and potential impact zones—has reached 30:3:1. Moreover, the aggregation of transport hubs creates efficient connectivity, stimulates functional demand, as evidenced by the significant growth of consumer and service-oriented Points of Interest (POIs) in the surrounding area. From the perspective of spatial development, the emergence of new economic and employment forms has transformed transport aggregation zones into mixed-use areas that attract creative industries. Over two decades of development, this has driven the continuous utilization of opportunity sites in surrounding areas.

This study examines the influence of multi-station aggregated hub's redevelopment on its surrounding areas and summarizes urban development modes. (Ibraeva et al., 2020) It provides insights for the planning and redevelopment of multi-station urban districts in future megacities, shedding light on the spatial transformations brought about by the integration of urban and transport networks, offering valuable guidance for similar projects worldwide.

Keywords:

Multi-Station Aggregation; Transportation Hubs; Urban Area; King's Cross; Spatiotemporal Evolution

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T_03 MOBILITY (A) / 1542

ENHANCING URBAN SEA TRANSPORTATION THROUGH WALKABILITY AND MICROMOBILITY INTEGRATION WITH FERRY TERMINALS

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Istanbul, a city where sea transportation has historically played a significant role, currently faces a decline in the share of this mode in the overall public transport system to less than 3%. This decrease, despite the city's geographic advantages, is attributed to multifaceted factors such as the integration of sea transportation, accessibility challenges, and user habits. On the other hand, efforts to promote sustainable urban mobility increasingly focus on walkability and micromobility applications.

The primary objective of this study is to develop proposals for walkability and micromobility enhancements around ferry terminals by addressing user-friendly, sustainable, and environmentally low-impact transportation modes in an integrated manner. The proposed model aims to contribute to resolving urbanization-driven global crises by supporting physically accessible, socially and economically equitable, and environmentally friendly transportation systems.

Within the scope of this study, ferry terminals in Istanbul will be categorized based on usage intensity, and one terminal from each category will be selected. A 400-meter radius around each selected terminal (approximately a 5-minute walking distance) will be defined as the study area. These areas will be analyzed in terms of the level of public open spaces, mobility intensity, land use diversity, and the variety of transportation modes.

In the next phase, the current quality of walking infrastructure and micromobility facilities in the selected areas will be evaluated in detail. Improvement proposals will be developed based on literature-driven criteria to encourage pedestrian mobility. To strengthen micromobility, innovative approaches will be proposed concerning road and safety infrastructure, vehicle parking areas, rental points, and the integration of ferry terminals with micromobility.

The findings of this study aim to support the integrated planning of sea transportation with pedestrian mobility and micromobility, facilitating the transition to human-centered and environmentally friendly transportation systems. In this context, the proposed model has the potential to increase walking activity and the use of lightweight vehicles such as bicycles and scooters, while encouraging residents to prefer sea routes as part of their daily travel.

Keywords:

mobility; public sea transportation; walkability; micro mobility

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T_03 MOBILITY (A) / 610

Understanding Mobility and Activity in the Low Traffic Neighbourhood: The Case of East Oxford, UK.

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The Low Traffic Neighbourhood (LTN) is a recent traffic management approach to removing motorised through-traffic from residential streets in the UK by strategically blocking roads using bollards and planters while allowing passage of walkers and cyclists and other micromobilities including electric scooters. Automatic Number Plate Recognition (ANPR) cameras are also used to facilitate the passage of emergency service vehicles and public service vehicles.

Critics of LTNs argue that such schemes force traffic onto boundary roads of LTN resulting in congestion and associated traffic pollution increasing along those routes and question their impact on equitable sustainable mobility. Supporters of LTN highlight the wider benefits to the community including improved road safety and environmental quality through less motor traffic and the potential to encourage more people to walk and cycle for short journeys; increased opportunity for social interaction among neighbours; and the ability of children to play out in the street. Because of their recent implementation in the UK, studies on the impact of LTN are nascent (Aldred et al., 2024; Aldred et al., 2021; Pritchett et al., 2024; Xiao, 2023).

The focus of this paper is the city of Oxford which became the site of resistance to LTN culminating in a national protest in the central area of the city in February 2023 (Quinn, 2023). The paper provides an insight into residents' perceptions of the impact of LTN gathered through a social survey of householders at dwellings (approx.5000) within and along the boundary of the most recent 'East Oxford LTN'. This was supplemented with static and mobile interviews (Büscher et al., 2010; Fincham et al.2010) with respondents during summer 2024.

The results of our survey (n=528) show that the East Oxford LTN has made a positive impact across most indicators (e.g. walking and cycling; social interaction; children's play) but that support for the LTN was more likely among households: located within the LTN (as opposed to along boundary roads); with children; with access to cycles; and, without access to a car. Interviews (n=30) and mobile interviews (n=15) with purposively selected householders from the survey reveal the complexity of opinion on the impact of the East Oxford LTN and nuance even within groups 'pro' and 'anti' LTN. Based on these

findings, and in considering the contributions and limitations of LTN in equitable and sustainable mobility (Dudley et al., 2022) we provide lessons for policy within the context of wider interventions to support the transition to sustainable travel and liveable neighbourhoods.

Keywords:

Low Traffic Neighbourhoods; streets; liveability; active travel; Oxford, UK.

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T.03 MOBILITY (A) / 1232

Beyond the ride: A bike along study on infrastructural factors and determinants influencing the docked bike-sharing experience

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Context: Cycling for transportation is increasingly recognised as a core strategy to combat the climate emergency, particularly in urban environments. Over the past few years, bike-sharing services have evolved from novel experiments to integral components of urban transportation networks, offering a flexible and valuable opportunity to attract new users to cycling and promote sustainable mobility as an alternative to traditional modes of transport (Eren & Uz, 2020; Shaheen et al., 2020; Teixeira et al., 2020). These systems, which differ from private bicycles in their shared use, have reshaped the urban landscape by providing a convenient, low-cost transportation option. Their unique dynamics of access, community use, strategic locations, coverage

areas, and technological integration present distinct experiences and challenges that clearly differentiate them from private bicycle use, while maintaining the physical form of bicycles (S. Ji et al., 2024). However, the rapid growth in the use of these schemes has exposed critical gaps, such as insufficient cycling infrastructure, system saturation, or poor integration with other transport modes, which continue to hinder their full potential.

Purpose/Methods: By using a mobile methodology, we interviewed 17 docked bike-sharing users in Barcelona to obtain in-depth and context-sensitive information about the environmental factors influencing their perceptions and experiences (Van Cauwenberg et al., 2018). Researchers and participants embarked on a videorecorded cycle trip, during which bike-along interviews were conducted to explore how infrastructure and spatial dimensions shaped riders' experiences. The data was analysed using a dual approach: an inductive content analysis combining thematic analysis of participants' narratives and video-based observations of their embodied interactions with the urban environment. This comprehensive methodology led to the development of a model encompassing eight key environmental themes, capturing both the subjective experiences of riders and the spatial dynamics shaping their trips.

Results: Our findings reveal that traffic safety - modulated by cycling infrastructure and network connectivity- strongly influences how users of shared bicycles perceive urban spaces. Consistent with previous studies participants in our study exhibited a preference for designated and wide cycling space, ideally separated from motorised traffic, particularly on narrow streets with heavy and speeding traffic. Furthermore, participants reported that features specific to shared bicycles, such as their design and maintenance, notably shaped their riding experience. Beyond the act of cycling itself, our analysis also highlights the importance of often-overlooked stages, such as the bike pick-up and return processes. These moments present spatial and accessibility challenges that could limit the consolidation and expansion of bike-sharing schemes. While larger station capacities are generally associated with improved service access, our findings highlight significant supply shortages during peak demand at high-capacity stations, particularly near major mobility hubs. However, the significance of docked stations in the overall bike-sharing experience extends beyond station capacity and turnover ratios. In particular, the design of the stations emerged as another critical dimension influencing user satisfaction and safety perceptions. Participants expressed concerns about stations located in close proximity to motorised traffic, which were perceived as unsafe; and stations on sidewalks, which were viewed as inconvenient for pedestrians.

Conclusions: This study contributes to ongoing discussions around rethinking urban transport systems to prioritise equity, accessibility, and sustainability. Our findings reveal that subjective safety perceptions, influenced by infrastructure and bicycle design, are as important as objective safety outcomes. Policies should prioritise improving safety on routes identified by bike-sharing users as unsafe, focusing on consistent cycling paths, dedicated infrastructures, and addressing complex traffic challenges. Features like poor signage and confusing.

Keywords:

Docked bike-sharing system; Cycle-along; Cycling infrastructure; Mediterranean city

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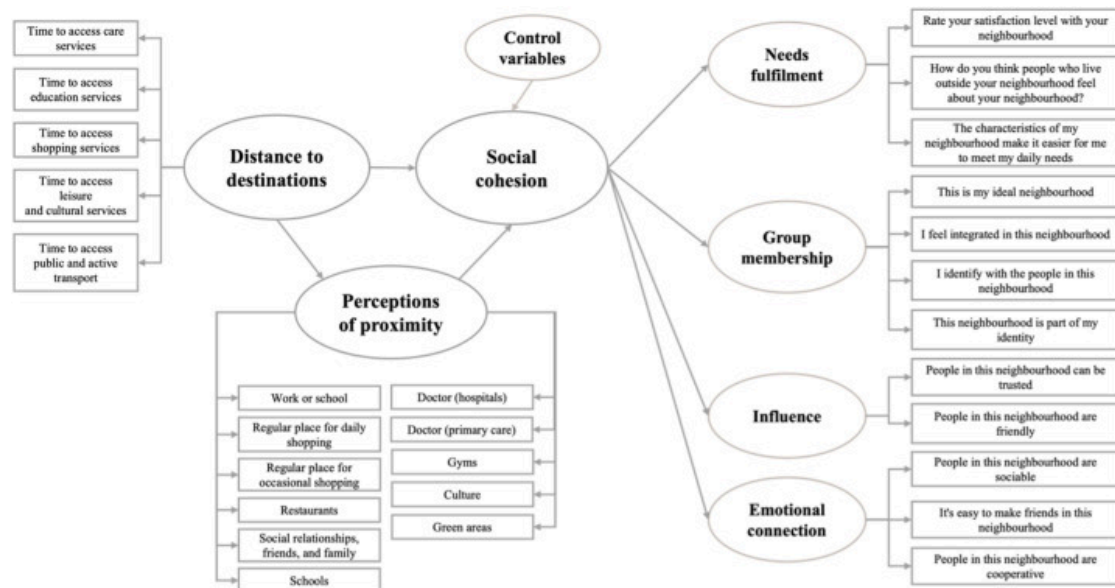
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T_03 MOBILITY (A) / 1270**Can proximity forge strong bonds? Exploring the relationship between urban proximity and social cohesion at the neighbourhood level****Author:** Serena Mombelli¹**Co-authors:** Carme Miralles-Guasch ¹; Oriol Marquet ¹¹ *Universitat Autònoma de Barcelona***Corresponding Authors:** oriol.marquet@uab.cat, serena.mombelli@uab.cat, carme.miralles@uab.cat

In recent years, urban proximity has received renewed attention in urban and transport planning as cities strive to create environments that promote sustainability, health and overall quality of life. While the environmental and health benefits of proximal urban environments are well documented - such as reduced carbon emissions, improved air quality and increased physical activity - the social implications, particularly in terms of social cohesion, remain under-researched. Social cohesion, which refers to the strength of social ties, shared values and a sense of belonging within communities, has been linked to a range of benefits, including increased community resilience, improved public health and greater collective well-being. However, despite its importance, there is still limited understanding of how proximity to everyday destinations shapes social cohesion.

Previous research has examined how different characteristics of the built environment - such as density, diversity, design and walkability - affect social cohesion. These factors have been shown to influence how people interact with their surroundings and with each other. However, few studies have specifically isolated the impact of proximity to key destinations - such as grocery stores, parks, schools and health facilities - on social cohesion. This gap is particularly important given that proximity can influence the frequency and quality of social interactions, as well as the overall accessibility of services that support daily needs.

In this research, we aim to address this gap by integrating both objective and subjective measures of proximity to destinations to assess their influence on community cohesion. Our study uses survey data on social cohesion and perceptions of proximity, together with geo-referenced data on actual distances to everyday destinations in five Spanish cities: Madrid, Barcelona, Valencia, Palma de Mallorca and Granada. Using partial least squares structural equation modelling (PLS-SEM), we analyse the relationship between proximity and social cohesion, focusing on how perceptions of proximity mediate this relationship, while controlling for socio-demographic variables such as age, income and education.



The results show a significant negative relationship between distance to everyday destinations and social cohesion, mediated by perceptions of proximity. This suggests that social cohesion is influenced not only by the physical proximity of destinations, but also by how individuals perceive this proximity. The negative effect is particularly pronounced when there is a mismatch between actual and perceived proximity - when destinations are perceived to be closer or further than they actually are. Furthermore, distance to everyday destinations was found to have a significant impact on two critical sub-dimensions of social cohesion: need satisfaction (the extent to which basic and social needs are met within a community) and group membership (the sense of attachment and belonging to a community). The study also highlights the role of socio-demographic factors, with older residents and those living in neighbourhoods with fewer rented homes reporting higher levels of social cohesion, possibly due to greater reliance on local networks and services. These findings highlight the complexity of the relationship between proximity, perceptions and social cohesion, and the need for equitable urban planning strategies.

The implications of this research are clear: urban planners and policy makers should prioritise equitable access to essential services and consider both objective and subjective dimensions of proximity in their designs. By fostering environments where everyday destinations are accessible and perceived as close, cities can strengthen social cohesion, build community resilience and promote a higher quality of life for all residents. This integrated approach is crucial to creating more inclusive and socially sustainable urban environments.

Keywords:

Urban proximity; Urban mobility; 15-minute cities; Social cohesion

T_03 MOBILITY (A) / 1383

Research on Urban Slow Traffic Network Construction Based on the "Patch-Corridor-Matrix" Model

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With the intensification of global climate change and energy crises, green and low-carbon development has become a core objective of urban planning. As a critical component of urban green transportation systems, slow traffic networks can not only reduce carbon emissions but also enhance residents' quality of life and travel experience.

The spatial structure of all landscapes is composed of three fundamental elements: patches, corridors, and matrices, known as the "Patch-Corridor-Matrix" model. Ecological networks use various corridors to organically connect landscape patches, forming a continuous spatial structure that emphasizes the structural and functional relationships between patches, corridors, and matrices. Similarly, an urban slow traffic network organizes public space resources through slow traffic pathways and integrates public service facilities into a network system of areas, lines, and nodes, demonstrating a comparable spatial organizational logic to ecological networks.

Currently, urban slow traffic networks face issues such as lack of systematic organization, poor continuity, insufficient consideration of ecological values, and single functionality, etc. This study takes the central urban area of Shanghai as the research object. Inspired by the network model and construction methods of landscape ecology, it selects multidimensional resistance indicators for slow traffic. By calculating the optimal experiential slow traffic corridors, the study constructs a systematic urban slow traffic network from the perspectives of areas, lines, and nodes, ensuring traffic efficiency while addressing the issue of single functionality.

(1) Areas: Identification of Slow Traffic Patches

Using Morphological Spatial Pattern Analysis (MSPA), the study scientifically identifies and classifies natural resources (e.g., green parks, water bodies) and cultural resources (e.g., commercial centers, cultural heritage sites, public spaces). Key patches, such as core areas and edge zones, are extracted to provide foundational nodes for the slow traffic network.

(2) Lines: Construction of Slow Traffic Corridors

Located on the East China Plain, Shanghai's natural resistance to walking and cycling is relatively low, making the built environment the primary influence on slow traffic resistance. Based on domestic and international studies on walkability, this research selects slow traffic indicators from five dimensions: greenery, health, vitality, equity, and safety. A slow traffic resistance index is developed, with indicator weights determined using the entropy method.

The Minimum Cumulative Resistance (MCR) model is employed to construct a resistance surface for Shanghai's slow traffic network, identifying corridors with the lowest cumulative resistance. These corridors represent streets with potential for ecological prioritization, spatial comfort, vitality, accessibility, and safety.

(3) Nodes: Design of Slow Traffic Stepping Stones

Inspired by commonly used landscape ecology indices, including the alpha index (network closure index), beta index (node connectivity), and gamma index (network connectivity), this study calculates the cyclic and connective relationships between nodes and corridors based on spatial topology. Slow traffic stepping stones are designed in areas with low network connectivity.

In ecology, stepping stones serve as intermediate stations for species migration. Similarly, slow traffic stepping stones are designed as small public spaces or service facilities that provide rest areas and enhance connectivity between large patches. This increases activity frequency for residents traveling between slow traffic patches.

This study innovatively incorporates ecological theory into the construction of urban slow traffic systems. By integrating natural and cultural patches with scientifically designed corridors, it addresses the lack of systematic planning in current slow traffic corridor development. Furthermore, it expands the scope of slow traffic systems from a single transportation function to include multiple dimensions such as ecological services, cultural exchange, equity, and inclusivity, etc. The research provides both practical examples and theoretical support for urban green and low-carbon development, offering a reference model for the planning of slow traffic systems in other cities.

Keywords:

Slow Traffic Network; "Patch-Corridor-Matrix" Model; Slow Traffic Stepping Stones

T_03 MOBILITY (A) / 1483

"Beyond Growth" in China: Coordinated Optimization Strategies for Rail Transit Networks and Regional Spatial Structure in the Post-Urbanization Context

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In recent years, terms such as "stock-oriented development" (存量发展, development based on existing assets) and "high-quality development" (高质量发展, development emphasizing sustainability, equity, and efficiency) have become increasingly prevalent in government documents and scholarly papers on urban planning in China. After four decades of rapid urbanization involving an unprecedented scale of population migration (approximately 770 million people), major cities and developed regions in China have begun to exhibit characteristics of entering a post-urbanization phase, particularly in terms of population growth, economic restructuring and spatial expansion. This specific context, while sharing certain commonalities with the experiences of other countries, also presents unique characteristics rooted in China's rapid urbanization process. As a result, in China, the strategic framework of "beyond growth" has been adapted and enriched, and is more commonly referred to as "high-quality development." Within this framework, public transportation, as a quasi-public good, is regarded as a critical system supporting high-quality development. In particular, rail transit systems have proven effective in alleviating some of the challenges faced by major cities by facilitating the flow of production factors and providing mobility opportunities. Moreover, analyses indicate that optimizing rail transit systems in China's major cities is an urgent priority at the current stage, given their role in addressing urban challenges and supporting sustainable development.

Through comparative case studies based on multi-source data and China's planning practices, this study addresses three key questions: (1) What are the contextual roots of 'beyond growth' in China? How has its reinterpretation shaped distinct strategic priorities or implementation strategies compared to other countries? (2) What challenges and requirements does high-quality development create for rail transit systems? (3) What is an effective strategic framework for the coordinated optimization of rail transit systems and regional spatial structures to alleviate challenges in major cities?

The analysis reveals that these differences stem from several factors. China's policy-driven urbanization has been faster, larger in scale, and more spatially extensive than in other countries. Additionally, the dominance of automobile-oriented motorization during urbanization has exacerbated transportation-related challenges. The explanatory framework highlights that policy-driven rapid urbanization has resulted in significant regional imbalances. These imbalances concentrate on economic opportunities in major cities, sustaining population migration even as these cities enter the post-urbanization phase. Moreover, despite resource shortages and social tensions, major cities remain

integral to national strategies such as city-cluster development and infrastructure inter-connectivity. Automobile-oriented motorization has shaped urban expansion, while rail transit development has lagged behind, exacerbating spatial and mobility challenges in the post-urbanization phase. As a result, the “beyond growth” framework in China must address not only the dilemmas of growth dependency and the pursuit of equity and sustainability but also the legacy issues of rapid urbanization. In this context, government-led planning remains crucial, but greater grassroots participation is needed for balanced development.

Based on the analysis, this study identifies several challenges facing rail transit systems in China’s major cities, including limited space for new rail corridors, diminishing marginal benefits of new projects, and complex governance structures declining marginal benefits of new rail transit projects. Drawing on planning practices and addressing the “development dilemma under growth constraints,” the study proposes a strategic framework for the coordinated optimization of rail transit systems and regional spatial structures, with goals such as regional integration, urban spatial structure optimization, rail network improvement, and meeting resident mobility needs. This framework focuses on optimizing regional rail corridors and nodes, structural rail networks in metropolitan areas, and intensive metro networks within cities. It also clarifies the mechanisms for cross-administrative collaboration and operational support for rail transit networks at different levels.

Keywords:

Cities beyond growth; Rail transit network; Regional integration; Spatial structure

T_03 MOBILITY (A) / 1489

The role of New Working Spaces in the context of the 15-minute city: insights from Greek case studies

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Urban areas face challenges like climate change and socioeconomic crises, necessitating innovative planning. Their inability to manage global shocks locally underscores long-term structural, organizational, and governance vulnerabilities (Pozoukidou & Plastara, 2025). At this edge, the 15-minute City (15mC) concept emerged as an innovative neighborhood-based approach for sustainable urban development. This idea is based on key urban planning principles like equitable access to services, mixed land uses, reducing commuting, increasing green spaces, and prioritizing the neighborhood as the community core (Pozoukidou & Chatziyiannaki, 2021; UN-Habitat, 2018). The 15mC approach suggests mixed land use and a compact urban form providing residents the daily needs within a short walk, bike ride, or transit stop (Moreno et al., 2021; Pozoukidou & Chatziyiannaki, 2021). This model aims to increase accessibility through geographic or digital proximity (Pozoukidou & Plastara, 2025). Proximity constitutes one of several ways for people to access spatially distributed opportunities in the urban environment. While the 15mC suggests proximity to daily needs as a solution to avoid commutes, the inflexible daily commuting to work remains an issue (Elldér, 2022; Pozoukidou and Chatziyiannaki, 2021).

In the post-COVID era, remote working has increased significantly, with 22.2% of people in the EU sometimes working from home in 2023 (Eurostat, 2024). The growing technological development combined with knowledge-intensive activities have transformed the nature of work, allowing individuals to work from anywhere. New forms of physical and virtual working locations outside of the “traditional” workspace have emerged as spatialities of RW. Building on Yu et al. (2019), there are six types of spatialities, defined by the location and nature of the working environment as New Working Spaces (NWS), these spaces allow “near working”–working closer to home (Biagetti et al., 2024). NWS such as coworking spaces (CS), third places like cafes and libraries, or neighborhood-based working hubs provide equipped and flexible spaces and can also serve additional i.e. cultural purposes (Di Marino, 2018). NWS can be a solution for individuals who are engaged in hybrid working arrangements, many of whom prefer using third places near their houses, reducing the need for long daily commuting to a traditional office (Biagetti et al., 2024). NWS can tackle the social isolation associated with work-from-home, fostering social interaction and community engagement. Locating workplaces within neighborhoods supports sustainable living and working, reduces daily commutes, and minimizes the associated environmental impact.

This paper examines whether NWS have the potential to serve as nuclei for the reorganization of the neighborhood in the 15mC framework, as they could be a solution for reducing the daily and inflexible commute to the traditional workplace. Two case studies were selected for comparative analysis, Athens and Thessaloniki, the capital and the second largest city in Greece respectively. In addition, for this analysis, only formal CSs were used from the variety of NWS.

Methodologically, spatial analysis will be conducted in GIS and open data from OSM will be used regarding the location of CS as well as the complementary land uses in a 15-minute range calculated in walking distance. The network analysis will be calculated by following the pedestrian network of each city instead of Euclidean distance from CS points.

The comparative results for the two cities are expected to i) Show the allocation of CS in the two cities and the service area that is covered by at least one CS and ii) The influence of CS on diverse amenities and services around them within the 15-minute range. The study contributes to the ongoing planning debate on emerging urban models for sustainable neighborhoods, drawing on insights from the European South.

Keywords:

15-minute city; proximity; new working spaces; proximity-oriented development; spatial analysis

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T_03 MOBILITY (A) / 1501

Daily Mobility and Public Open Space in Large-scale Housing Estates: Connection and Social Networking Quality in a 15-minute City Concept

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In the second half of the 20th century with the expansion of motorised transport “traffic function” of the streets started to dominate over the “place function”. The up-to-date urban mobility faces critical problems that require fast, innovative and effective solutions. One of the most visible problems is traffic congestion, which reduces traffic efficiency, increases pollution levels and affects the quality of life in cities (Herrera-Acevedo, Sierra-Porta, 2025), raising concerns about the rapid expansion of climate change. The second is the conversion of the outdoor spaces of the residential environment into car parking spaces, reducing the areas for relaxation, active recreation and other activities aimed at the population’s well-being. This, in turn, increases the risks of social isolation and marginalisation. These negative phenomena encourage cities around the world to seek innovative solutions that support the spatial and social sustainability of urban environments (Nello-Deakin, 2024).

The 15-minute city concept emphasises proximity and diversity as key living options in urban planning based on walking and cycling. It is becoming a widely accepted strategy among urban planners around the world who aim to create a more walkable, car-free environment and a shift to more sustainable travel habits (Moreno, C., Allam, Z., Chabaud, D., et.al., 2021; Tammaru, et.al, 2023; Iannacci, et.al., 2025). The idea of a micro-district as the basis of the urban structure has been implemented in many European cities, where they form large built-up areas with the majority of the city population living there (Dragutinovič, et.al, 2023; Galan, 2024). These districts are initially planned in such a way that residents are provided with everything they need for everyday life within easy walking distance. Considering the specific urban pattern of the modern LHE’s environment, our research project 15minESTATES is focused on relations between the ‘15-minute city’ concept and the modernist city concept implemented in LHEs. Through selected case studies in five European cities, the aim is to scrutinise if the six essential urban social functions of a ‘15-minute city’ are present in the urban patterns in LHEs, and whether the amount and proximity to these specific services would help in saving time wasted in traffic, thus promoting sustainable mobility. Qualitative and quantitative methods will be adopted for the case studies, including mapping, spatial analysis, surveys, and interviews.

Comprehensive understanding of community interests and needs is crucial on the way to transitioning into sustainability. Thus, in this paper we present a complex approach for community engagement for investigating inhabitants’ mobility behaviour and disclose which functions are connected to the car-dependent behaviour of residents in the selected case studies. Comparison of the several public participation methods used during the workshop sessions in Riga and Delft allowed to close the gap in the collected information, and ensure better understanding of inhabitants’ opinions, attitudes and needs. Public discussion, mapping and walking activities examined how distance to daily destinations affects the choice of travel modes of people living in LHEs, what characteristics attract people and encourage them to choose certain paths in the

area, and what characteristics of streets make them “places” of social interaction” and supports the “function of place”.

Keywords:

sustainable cities and communities; 15-minute city concept; large-scale housing estates

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T.03 MOBILITY (A) / 252

Advancing the ‘15-Minute City’ in Turkey: A Framework for Sustainable Urban Planning and Governance in Mid-Sized Turkish Cities

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This study explores the potential of Turkey’s mid-sized cities to align with the “15-minute city” concept, emphasizing proximity, inclusivity, and sustainability. These cities, characterized by compact urban areas where most residents live within a 3-km radius, inherently support walkable, proximity-based urban planning. However, rising automobilization and minimal car use restrictions along with uncoordinated transportation policies in Turkey pose significant risks to the realization of this concept. This research underscores the need for integrated transportation strategies, pedestrian-focused urban planning, and stringent parking policies to support 15-minute city while mitigating car dependence and fostering sustainable urban environments. Central to the “15-minute city” framework is the reorganization of urban functions to

ensure proximity within neighborhoods, necessitating systemic changes in resource allocation patterns and governance schemes (Pozoukidou and Chatziyiannaki, 2021). The concept also emphasizes principles of proximity, diversity, density, and ubiquity, aiming to reduce reliance on motorized transport while promoting sustainable and equitable urban living (Moreno et al., 2021). Practical frameworks for neighborhood-level transformations and multimodal connectivity with an emphasis on public engagement and behavioral shifts in Moreno (2024) are particularly relevant for Turkish cities in transition.

For Turkish cities, rethinking public transportation as the backbone of urban mobility is essential. Developing trunk transit systems free from regular traffic conditions can increase reliability and encourage shifts from private vehicle use. Public transport nodes, such as rail and bus stations, should be integrated into neighborhoods to support seamless multimodal connectivity while reducing car travel.

Pedestrian-friendly design is another critical component. Enhancing walkability through well-maintained sidewalks, safe crossings, and traffic-free inviting public spaces can significantly encourage active mobility. Walkable neighborhoods not only promote physical health but also contribute to cognitive well-being and social interaction, particularly among vulnerable populations like the elderly (Zhang et al., 2023). Moreover, pedestrian infrastructure must account for inclusivity, addressing the “last millimeter” challenges to ensure accessibility for all (Buliung, 2024).

Parking policies play a pivotal role in reducing car dependency. Stringent regulations, such as limiting parking availability in central areas and imposing higher fees, discourage car use and reclaim urban space for pedestrian and community activities (Núñez et al., 2024). Mixed land-use planning further supports proximity by ensuring essential services, amenities, and recreational spaces are distributed across neighborhoods, thereby fostering local economies and social cohesion (Pozoukidou and Chatziyiannaki, 2021).

While the theoretical underpinnings of the “15-minute city” are rooted in principles of proximity and inclusivity, practical implementation requires data-driven approaches. Tools like the Next Proximity Index (NEXI) can assess accessibility levels and identify gaps in urban planning, guiding tailored interventions (Olivari et al., 2023). Besides, the experiences of cities worldwide provide valuable insights. For instance, European cities with high pedestrian accessibility and diverse land use demonstrate reduced car reliance and enhanced urban equity (Vale and Lopes, 2023). Similarly, compact neighborhoods in ultra-dense cities like Shanghai showcase how mixed-use planning and walkability can foster cognitive and physical health (Zhang et al., 2023). These examples underscore the importance of adopting integrated urban design principles that prioritize human-centric planning over car-oriented development.

Although Turkey's mid-sized cities possess unique opportunities to lead by example in movement, transitioning to the “15-minute city” in these cities requires addressing existing challenges, including societal car dependency and fragmented urban governance. The study explores different traits of collaboration across for sustainable urban planning goals. Moreover, community engagement in planning processes ensures that interventions reflect local needs and aspirations, fostering public support and long-term success (Pozoukidou and Chatziyiannaki, 2021).

Keywords:

15-minute city; sustainable urban planning; public transportation; mid-sized cities; Turkey.

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T_03 MOBILITY (A) / 1523

Are local living and transit-oriented development compatible? Conundrums in land use and transport integration policies in the transformation of Australian cities.

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If recent policy announcements are to be believed, Sydney and Melbourne, Australia's two largest cities, appear destined for major disruptions driven by two headline policies being implemented in the third decade of the 21st century: transit-oriented development (TOD) and local living policies in the form of 15- and 20-minute neighbourhoods. These policies share complementary aims of reducing reliance on cars by creating mobility environments conducive to active and public transport. What interests us in this paper is whether they can overcome their inherently contradictory agendas: TOD seeks to cluster housing and non-residential uses around a limited number of railway stations and tram corridors; 15- and 20-minute neighbourhoods seek to provide access to daily living needs, including public transport, everywhere. However, Australian cities are among some of the world's most dispersed and car-dependent, creating enormous tensions between the aspirations of these policies have largely been imported from North America, which often gesture towards the desire for a more European urbanism, inflected by the recent discursive capture by 'x-minute cities' premised on travel time of much older planning concepts.

TOD policy in the Australian State of NSW, of which Sydney is the capital, aims to accommodate 74% of the state's housing target within the former '6 Cities Region' within 45 rail station-based precincts over the next 15 years; Victoria is aiming to accommodate 23% of new dwellings projected for its capital, Greater Melbourne within 50 rail and tram-based activity centres. Both states' local living policies have the ambition that everyone should be able to live in a 15- or 20-minute neighbourhood. These cities' populations are well over five million each and are projected to almost double by 2050 to over 9 million. Our analysis is twofold: Using SNAMUTS (Spatial Network Analysis for Multi-modal Urban Transit Systems) we seek to understand the trajectory of residential and other forms of urban intensification relative to accessibility by public transport in Sydney and Melbourne in the last decade. We then compare this analysis with the distribution and accessibility of core non-residential uses required for 15- and 20-minute neighbourhoods (retail, open space, schools and transit stops). From these two analyses of the spatial distributions of housing, amenities and mobility, we speculate on their future trajectories under current policy settings, in the context of the kind of mode shift that should accompany Australia's commitments to Net Zero by 2050.

Some conundrums appear as these speculations are developed: TOD (as implemented in Australia) is increasingly premised on the relative scarcity of high levels of transit network accessibility. Under such settings, what sort of land use and urban design policies might support the kinds of mode shift towards levels that would justify their recognition as 'Transit Oriented' urbanism, i.e. greater than 50 per cent public transport use? At the same time, what kind of transport, land use and urban design policies might support transitions so that the entire populations of Sydney and Melbourne can indeed choose

to live in metropolitan areas comprised entirely of 15- or 20-minute neighbourhoods? What can we learn from these speculations when we trace them back to the emergent urbanisms that we encounter in the current Sydney and Melbourne? What transformations will planners (and planning systems) need to undergo to facilitate the actual urban transformations that these core policies aspire to?

Keywords:

TOD; local living; accessibility; land use integration; sustainable transition

T_03 MOBILITY (A) / 429

Exploring Interactions between Urban Rail Transit Network Characteristics and Station-Area Functional Morphology: A Typological Analysis and Flow Prediction of Shanghai Metro Based on Multi-Source Data

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In the era of global crises, urban planning is confronted with multiple challenges, including climate change, social inequality, and resource scarcity. Urban rail transit networks, as critical infrastructure, significantly reshape urban spatial agglomeration patterns and morphological characteristics by guiding population flows (Yang et al., 2020). Consequently, they have become a vital lever for promoting urban sustainability and social inclusiveness (Xiao et al., 2021). In China, the transit-oriented development (TOD) model has emerged as a planning tool to address inefficient urban land use, guiding urban spatial expansion (Shen and Wu, 2020). As a result, the interaction between urban rail network structures and the functional differentiation of urban spaces needs a more comprehensive reassessment.

However, existing studies on typologies of station-area spaces often overlook the characteristics of the rail network itself (Feng et al., 2023), while passenger flow predictions tend to overemphasize the current network's flow patterns, neglecting the influence of land use and functional characteristics on transit usage (Zhang et al., 2024). To address these gaps, this study examines the Shanghai metro system from the dual perspectives of complex network analysis and functional morphological measurement. It aims to uncover the interaction mechanisms between station network characteristics and station-area functional morphology, employing typological induction to better capture real-world patterns and offering scientific and innovative insights for future urban transit planning through passenger flow predictions.

Our research unfolds in four stages:

1, We utilize complex network analysis to measure the network characteristics of all operational metro stations in Shanghai. Metrics such as betweenness centrality, closeness centrality, and eigenvector centrality are used to identify the structural roles and connectivity of stations within the transit network at the node level.

2, Station-area boundaries are defined using a 600-meter buffer or a 15-minute walking isochrone. Indicators across three dimensions—functionality, vitality, and environment—comprising 18 metrics in total, are measured to capture the spatial quality and functional characteristics of station areas at the place level. These two datasets form the foundation of our analysis.

3, We examine the interaction patterns between rail network characteristics and station-area functional morphology through descriptive statistics and correlation matrices. Results indicate that stations with high closeness centrality exhibit strong regional accessibility and overall transportation convenience. In contrast, stations with high between-

ness centrality serve as bridges for long-distance flows, facilitating interactions between different urban functional zones. Using the K-means clustering method, we classify Shanghai metro stations into six types: central homogeneous, suburban terminal, urban residential, central employment, urban public service, and suburban central. Typical station case studies validate the practical effectiveness of these classifications.

4, Using operational stations as the training set and unbuilt or planned stations as the testing set, we apply various machine learning models to predict future passenger flows. The random forest model achieves the highest prediction accuracy. SHAP analysis identifies key factors influencing passenger flow, including social media activity in station areas, floor area ratio, and office rental levels. Predictions highlight that the northern part of Line 19 in the Lujiazui area is likely to become a new high-traffic transit hub.

In conclusion, this study, adopting a synergistic perspective on rail transit networks and station-area functional morphology, provides scientific evidence for optimizing rail transit planning and urban spatial layouts. Based on clustering and prediction results, we propose resilience-based transit system strategies aimed at addressing the diverse mobility needs of different demographic groups while enhancing the adaptability of the transportation network. Our findings not only offer practical guidance for Shanghai's metro system planning but also call for a global reevaluation of urban transit development models in a fairer and more sustainable manner, providing insights into addressing challenges of inequality in infrastructure services.

Keywords:

Sustainable Urban Development; Resilient Transportation Systems; Shanghai Metro System; Complex Network Analysis; Metro-station Typology

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T.03 MOBILITY (A) / 603

Tactical urbanism, accessibility, and public participation: a mixed-method research and practice in Genoa, Italy

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Several cities worldwide have adopted planning policies aimed at rethinking the role of public spaces to foster active mobility and social interaction. This trend, strengthened by the impacts of the COVID-19 pandemic, reflects growing awareness of the negative

externalities associated with the dominance of cars in urban environments. Through interventions that reorganize the form and use of public spaces, shifting away from configurations that solely prioritize vehicle circulation and parking to those that support a plurality of social practices and sustainable mobility modes, the groundwork is laid for a broader paradigm shift: from car-centered models of public space to people-oriented designs.

The benefits of enhancing urban spaces and mobility systems to be more accessible and inclusive for all, especially for vulnerable populations, are manifold. These include fostering social interaction to prevent isolation, encouraging active mobility behaviors, and addressing the climate crisis by reducing CO2 emissions and enhancing urban ecosystems. Thus, transforming car-oriented public spaces is essential to achieving more sustainable, equitable, and active mobility-oriented urban environments.

Nevertheless, implementing these transformative processes presents significant challenges for both cities already undertaking these initiatives and those seeking to initiate them. First, such efforts challenge deeply rooted car-oriented cultures. Second, public space transformations operate on a highly contested resource, where conflicts often emerge regarding the uses, perceptions, and desires of different actors. As a result, interventions undertaken without a deep contextual understanding of local users' needs and preferences, or without anticipating potential conflicts arising from the transformation, risk being ineffective and jeopardizing the transition toward more sustainable and inclusive cities.

These challenges underline the importance of tactical urbanism, an approach to urban transformation characterized by its incremental, temporary, and experimental nature. This approach enables cities to overcome resource limitations and project uncertainties, while its participatory methodology helps mitigate divergences and potential conflicts. Public participation, central to the process of tactical urbanism, promotes citizen engagement and co-production of design solutions, fostering consensus and avoiding the negative outcomes associated with top-down imposed changes. However, the need for public engagement introduces additional challenges for public actors advocating tactical urbanism which need to i) prioritize intervention areas based on specific selection criteria; ii) effectively engage citizens; and iii) mediate between the - often divergent - preferences of citizens and the technical, legal, and financial feasibility of the proposed interventions.

While many cities worldwide have successfully addressed these challenges, others continue to struggle with developing effective strategies for change.

Building on these considerations, this paper examines a research project in Genoa, Italy, undertaken in collaboration with the Municipality to implement the city's first tactical urbanism pilot interventions. Currently being developed as part of the Genova Street Lab living lab initiative, these interventions focus on creating and enhancing public spaces through pedestrianization, installing urban furniture to promote conviviality, and supporting community-driven active mobility practices. A cornerstone of the initiative was the development of an innovative and scalable mixed-method approach to identify suitable intervention areas and involve the local population in co-designing public space solutions. This methodology combined quantitative GIS-based analysis, surveys, interviews, on-site inspections, and co-design sessions to achieve a comprehensive understanding of local challenges. It enabled the identification of priority areas for intervention and supported a shared process of envisioning and co-producing people-centered spaces.

The mix-method participatory approach, tested within the concrete policy decision-making process experimented in Genoa, is detailed in this paper. It addresses the challenges encountered and discusses the potential of integrating the tactical urbanism approach into institutionalized planning processes, thereby fostering a transition toward more inclusive, sustainable, and people-centered mobilities and urban environments.

Keywords:

tactical urbanism; accessibility; sustainable mobility; public participation; public space

T_03 MOBILITY (A) / 1630

Barcelona's Superblocks: from grid to block. The iterative design and implementation process of an urban planning concept.

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Broader research frame setting the stage

Urban public spaces are under significant pressure due to acute scarcity, unequal accessibility, and insufficient versatility, leading to a lack of opportunities for human encounters and complicating solutions to environmental, climate, and health-related challenges. Moreover, the deficiency of green public spaces particularly impacts the socio-economically most vulnerable populations (Anguelovski et al., 2018; Konijnendijk, 2018; Low, 2006; Rees, 1997; Sauer, 1925). In response to these challenges, cities around the globe are proposing new 'paradigmatic' concepts to radically transform urban public spaces from monotechinic car-dominated infrastructures to polyvalent people-centred public places (Mumford 1938), serving a broad spectrum of sustainable development goals (Sennet, 2019). Frequently cited examples that inspire policy mobility in cities worldwide include Medellín's Social Urbanism (Maclean, 2015), New York's Street Fight (Sadik-Khan and Solomonow, 2016), Barcelona's Superblocks (Rueda, 2019), and Paris' 15-Minute City (Moreno, 2020). However, between the conception of the paradigm and its realisation lies a challenging implementation process, during which both the level of ambition and the initially set –sometimes conflicting –goals inevitably come under pressure (Chombart de Lauwe, 1964; Cohen, 2017; Gössling, 2020).

Article abstract

This case study examines the design and implementation process of Barcelona's ambitious and highly debated Superblock concept. The iconic spatial figure of a Superblock consists of the aggregation of three-by-three building blocks into a car-free qualitative and liveable public space, aiming to serve as a building stone for city-wide transformation. Design experts initially advocated a rapid and systemic roll-out, using tactical urbanism, on a large scale to achieve promising social, environmental, and health-related goals (Mueller et al., 2019; Rueda, 2019). However, a profound shift emerged during the iterative implementation process, from the 'archetypal' model at the neighbourhood scale to a 'green axes and squares' model at the grid scale and from branding tactical urbanism to striving for structural interventions (Honey-Rosés, 2023; Magrinyà, 2023).

This article unfolds how and why the concept design evolves during its iterative implementation process and how this affects its potential transformative impact. The investigation employs a mixed-methods case study approach, including a graphical analysis of concept evolutions based on a study of policy documents and site observation, as well as expert and elite interviews that provide insight into the arguments and perceptions during the implementation process.

As a travelling concept, the Superblocks have inspired similar initiatives worldwide, such as Supermanzanas in Vitoria-Gasteiz, Kiezblocks in Berlin, Supergrätzl in Vienna (Aumann et al., 2023), and have been introduced in New York (The New York Times, 2016),

several Latin-American capitals (Rueda, 2019), and Los Angeles (Li and Wilson, 2023). However, all sources predominantly refer to the initial archetypal Superblock concept, while little to no reference is made to the agile implementation process and subsequent conceptual evolutions in Barcelona over the past decade. This analysis offers insights for planners and policymakers worldwide on adopting similar transformative concepts to achieve disruptive change within their urban contexts.

Keywords:

Transformative urbanism, car-free public space, concept evolution, iterative implementation process

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T.03 MOBILITY (A) / 1525

Revisiting Functional Density: Balancing Proximity and Hub-Based Mobility in the Seoul Metropolitan Region, South Korea

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Cities today are shaped by a dynamic interplay of population growth, diverse services, and digital connectivity. As remote working and online interactions continue to expand (Moreno et al., 2021), scholars and practitioners alike have intensified their focus on multi-dimensional density—encompassing physical, social, and functional aspects—and its impact on accessibility, productivity, and quality of life. While higher-density development often ignites innovation and urban vibrancy (Jacobs, 1961; Glaeser, 2011), it can also exacerbate congestion and housing cost pressures. Conversely, lower-density environments may offer space and comfort yet face inefficiencies in service provision and transportation (Cervero and Kockelman, 1997). These opposing forces highlight the need to harmonize neighborhood-scale proximity with the advantages of well-served central hubs.

Within this discourse, functional density—the spatial mix of commerce, culture, education, leisure, and related facilities—stands at the crux of two potentially complementary but sometimes competing development objectives. One seeks to leverage agglomeration benefits in key urban nodes, while the other prioritizes localized services through more dispersed approaches such as the “n-minute city” (Moreno et al., 2021). Although many studies have implied a generally positive link between facility mix and travel outcomes (Cervero and Kockelman, 1997), limited attention has been paid to potential trade-offs between hub-oriented intensity and everyday convenience. A more nuanced perspective is required to capture how total trip volumes, internal trip ratios, and a district’s overall attractiveness to leisure-seeking travelers are influenced by variations in functional density.

This study examines whether a balanced level of functional density can enhance local accessibility and manage external inflows without diminishing broader urban performance. We focus on weekend non-commute travel in 1,150 administrative districts across the Seoul Metropolitan Region, capturing both total trip volumes and intra-district travel ratios as dependent variables. Our independent variables include cultural, dining, and recreational facility indicators, population density, land-use diversity, daytime population ratios, and travel distance/time metrics. By excluding job-related measures, we aim to isolate leisure-oriented movements that increasingly shape urban travel behavior (Ewing and Cervero, 2010).

Methodologically, we employ a gravity model-based Ordinary Least Squares framework, incorporating both travel flows and spatial attributes. This enables us to quantify how varying degrees of functional density influence people’s propensity to remain within their local district or travel longer distances for leisure and social activities. Preliminary results suggest that moderate but well-distributed facility mixes can reinforce neighborhood cohesion, reduce external trip generation, and ease congestion. However, excessive concentration of key amenities can draw substantial inflows, triggering local congestion, escalating real estate costs, and uneven urban development.

By systematically examining these dynamics in a major metropolitan setting, this research provides empirical insights for identifying “optimal density” strategies that simultaneously promote sustainability, equity, and urban vitality. The paper concludes with policy recommendations on facility distribution, zoning, and regional planning approaches, aiming to guide urban decision-makers toward balanced development that harmonizes local living with the synergies of vibrant central nodes.

Keywords:

Multi-dimensional density; functional mix; urban mobility; non-commute trips; gravity model

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T_03 MOBILITY (A) / 438

Off the Beaten Track: Uncovering Rural Voices in the Conflict over the Future of Cycling in Bavaria

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As societies strive for sustainability, the mobility transition emerges as one of the most pressing challenges of spatial planning, influencing not only transportation networks but also the interconnected systems of energy, housing, and social infrastructures. This presentation addresses the challenge of achieving a socio-ecological mobility transition that considers diverse spatial structures. Whereas urban areas often receive more attention in sustainable mobility policies, rural regions in the European Union remain largely underserved, with a “near-total absence of specific policy for mobility” (Flipo et al., 2023, p. 136). As a result, rural areas continue to be heavily reliant on cars, which impacts both social equity and environmental sustainability (Flipo et al., 2023; Székely and Novotný, 2022; Vitale Brovarone and Cotella, 2020). Despite the important role of civil society actors in mobility transition conflicts (Frantzeskaki et al., 2016), existing research often overlooks rural contexts. Many rural stakeholders feel excluded from decision-making in climate and energy policies (Zilles and Marg, 2023). At the same time, the conflict lines are much more complex than a simple urban-rural divide (Fienitz and Siebert, 2021). This presentation argues that rural areas require more focused attention, given the distinct civil society dynamics, for example regarding the role of volunteering, informal political activities, and personal relationships in rural mobility struggles.

A qualitative case study of the conflict over cycling conditions in the southern German federal state of Bavaria (2017-2023) provides insights into the role of rural stakeholders in mobility transition conflicts. This case study explores the escalation of the conflict following the formation of a broad civil society alliance advocating for a Bavarian Cycling Law. Unlike other German initiatives, this campaign actively involved rural regions, recognising that over half of Bavaria's population lives in rural areas. Based on expert interviews, media coverage, documents, and field visits, the study identifies several key characteristics of the conflict in rural contexts:

- *Conflict context:* The debate over cycling conditions in Bavaria is deeply embedded in the broader political discourse on achieving equal living conditions between rural and urban areas.
- *Conflict objects:* In contrast to urban cycling debates, rural conflicts primarily centred around issues like the acquisition of agricultural land for intermunicipal cycle paths, nature conservation concerns, and the conflicting needs of everyday and tourist cyclists.
- *Conflict actors:* Key stakeholders in rural areas include farmers' associations, which are crucial for resolving conflicts, yet their involvement in cycling mobility debates has been limited.
- *Conflict dynamics:* The mobilisation for the Bavarian Cycling Referendum in 2023 was strategically timed before the state elections, limiting the time for signature collection in rural areas. This short timeframe was challenging for rural counties lacking established civil society networks, where more time was needed to build support.
- *Conflict modes:* In rural regions, personal relationships play a significant role in communication, and the success of mobilisations often depends on committed individuals, as it is difficult to mobilise the public around issues such as cycling. At the same time, the effect of greater networking and capacity building in civil society can be seen - in some cases, but not everywhere - in the mobilisation for the Cycling Referendum in Bavaria.

Coming from a background of spatial planning research and applying the conceptual approach of a multi-level analysis of spatially embedded conflicts, I contribute new perspectives to mobility research. The empirical findings contribute to a better understanding of mobility transition conflicts and the role of civil society actors in rural areas and thus have broader implications beyond the areas studied.

Keywords:

Mobility; rural areas; civil society; conflict; cycling

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T.03 MOBILITY (A) / 34

The 15-minute city center: A comparative analysis of the cities of Thessaloniki and Hanover.

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The concept of the 15-minute city goes back to the urbanist Carlos Moreno and by no means exclusively involves new ways of thinking and planning: A city of short distances with a social and functional mix has existed in urban planning concepts since the 1980s and still exists today (Kurth, 2021, p. 28). Moreno focuses on reducing car traffic and defined the 15-minute city in 2016, in which essential things should be within a maximum distance of 15 minutes on foot or by bicycle in cities (Moreno et al., 2021, p. 100f.). The concept aims to create self-sufficient urban districts with the essential functions of living, working, retail, health, education, and entertainment by decentralizing urban functions and services (Khavarian-Garmsir et al., 2023, p. 10) and thus counter the negative consequences of a city focused on car traffic with urban development that reduces traffic (BBSR, 2020-2024). Among other things, the aim is to create environmentally friendly, efficient transport alternatives to car traffic and improve public transport infrastructure (Büttner et al., 2024, p. 4). As cities are mostly polyrhythmic and polychronic, Moreno's 15-minute city shifts the focus from "urban planning" to "planning urban life" (Abdelfattah et al., 2022, p. 331).

This paper aims to compare the extent to which the 15-minute city concept can contribute to the sustainable urban development of Thessaloniki and Hanover and where the cities currently stand with regard to the shift towards walking and cycling as part of the DAAD university partnership "Centers of the Future - Challenges and Opportunities for Sustainable Development (ZukunftZentren)." Conceived in the past as car-friendly cities, the developments of the two cities now differ significantly from each other and offer different approaches to implementing the 15-minute city concept. As a starting point and connecting element, the article focuses on the aspect of mobility - especially walking and cycling.

A literature analysis (according to Brink, 2013, p. 46ff) is first used to develop the basics

of the 15-minute city concept. Participant observations (according to Bachmann, 2009) are carried out in both cities during various research visits, and urban development is systematic, standardized, and recorded. Based on the main topic of mobility, the potentials, and challenges of the two cities of Thessaloniki and Hanover are then compared verbally and argumentatively concerning the development of the 15-minute city concept. The decentralization of urban functions and mixed uses has already been implemented in both Thessaloniki and Hanover in isolated cases, which shows that such a transformation is possible. For both cities, which have been developed with a strong focus on the car, a development towards a 15-minute city can be particularly challenging (Khavarian-Garmsir et al., 2023, p. 12). Often, pure densification and concentration of functions are not enough; instead, it is advisable to use central locations such as train stations, for example, and to optimize uses and locate services there (Abdelfattah, 2022, p. 331), which, fundamentally contradicts the concept of the 15-minute city. In Thessaloniki, however, such mixed uses help revitalize the city. This could also be an option for the city of Hanover to shape the transition actively.

Although neither Thessaloniki nor Hanover are 15-minute cities, they are both on the road to transformation. The direction they ultimately take depends heavily on political decisions and the resources and framework conditions in the cities.

Keywords:

transformation; sustainability; connectivity; health; leisure; mobility

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T_03 MOBILITY (A) / 1683

Identifying intermediate territories through mobility patterns

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Sustainability strategies in the mobility sector are often concentrated on large metropolitan hubs or on main transport corridors. On the one hand, in fact, cities have been a field of experimentation for a mobility model alternative to the car-centric one. On the other, resources and institutional efforts have been concentrated to create and strengthen direct connections between them, especially high-speed ones.

Italy is a clear example of that, and the result is that the non-core territories have been underrepresented in the policy agenda, in a country where large cities account for 32% of population. At the margins of the agenda have remained both the remote areas of the country, which do not intrinsically express sufficient mobility demand to be considered by policies of national scope, but also all those areas that make up the “In-between Italy” (from now on Italia di Mezzo), that sum up to 62% of Italian population. Usually, these areas are only considered as an extension of metropolitan commuting basins and with little functional autonomy. To the contrary, innovative and targeted policies would be necessary for these areas, since merely adapting on a smaller scale the strategies implemented in metropolitan territories has proven to be ineffective. The first fundamental step, however, is to identify these territories.

The aim of this paper is to present a methodology that can recognize, isolate and describe the possible Italia di Mezzo exclusively with data related to mobility demand. To build this methodology we relied on consistent and large-scale data, the ISTAT “origin-destination matrix of travel for work or study reasons” of 2011, that however deliberately but necessarily excludes other kinds of mobility, i.e. those linked to leisure, free time and the use of services in general.

First, the matrix data is processed to obtain some significant novel indicators that can allow a first convincing and consistent exploration of the different “Italies”. These indicators are presented and spatialized for all the municipalities, explaining all their qualities but also limits. They are grouped in three categories: flow indexes, dependency indexes and geographical indexes. Since these indexes alone are not able to present such a clear and uniform picture of the Italia di Mezzo from the point of view of commuting mobility, in the second part, through an incremental process, we proceed by composing these indexes and creating a tentative classification. In doing that, we define this Italia di Mezzo by exclusion, eliminating the metropolitan areas (basically metropolitan mobility poles and their commuting basins) and the more remote areas.

In the conclusions we discuss the main outcomes of the indexes and the classification operation, and we also build some possible interpretative considerations about what kind of Italian territories make up the Italia di Mezzo of commuting mobility. More specifically, their consistency in quantitative terms and their degree of homogeneity or possible sub-categorization, also considering the relation between their mobility demand and infrastructures supply.

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Keywords:

mobility; accessibility; intermediate territories; transport planning

T_03 MOBILITY (A) / 891

GenAI Street Experiments: Introducing a Critical Framework for Generative Artificial Intelligence in Urban Design Teaching

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Street experiments are increasingly adopted as planning measures to help communities visualize “radically different arrangements of the urban mobility system” (Bertolini 2020). These interventions foster active mobility and public life through relatively short-term, low-resource, and small-scale spatial transformations that enable “here and now” changes to streetscapes. Despite their potential, such transformations often require significant spatial interventions, resources, and institutional and community support. Inadequate or unresponsive design remains a recognized barrier to their broader implementation (VanHoose 2023).

The recent rise of generative artificial intelligence (GenAI) tools promises to disrupt how cities are planned and designed. Some of these tools aim to empower diverse stakeholders to “reinvent their streets” while creating “happier and healthier environments” (NL Netherlands 2025). For instance, certain tools visualize how adopting a cycling lifestyle or adding outdoor seating could transform a specific street. As educational exercises, GenAI tools offer opportunities to envision alternative futures. However, mobility injustice remains a pressing concern, underscoring the need for planners to critically engage with these technologies.

In this presentation, we draw on our experience designing and teaching a course focused on fostering critical skills for engaging with GenAI in urban design. Using relevant frameworks, we discuss how these tools can be integrated into planning education, emphasizing the need to analyze their outputs critically and understand their potential impacts on urban mobility and equity.

Keywords:

Street experiments; generative artificial intelligence; planning education

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T_03 MOBILITY (A) / 731

Assessing the Impact of Urban Rail Transit on Urban Vitality: A Big-Data-Based Approach

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Transit-Oriented Development (TOD) aims to guide urban development through rail transit, with rail transit stations serving as pivotal urban nodes for the concentration of people and urban activities. The opening of new rail transit lines can increase the attractiveness of the station areas by improving accessibility and fostering changes in land use and amenities, thereby enhancing urban vitality. While numerous studies have shown the impact of rail transit stations on travel behavior and property values, few have provided empirical evidence on the vitality changes in the station areas.

Employing a difference-in-differences (DID) modeling framework, we assess the impact of rail transit on the urban vitality of the station areas, using the opening of Shanghai Metro Line 15 as a natural experiment. The urban vitality is measured by the number of residents, workers, and visitors clustered in the station areas, along with the visiting frequency, duration of stay, and distances from the stations to the homes of visitors, using a large mobile signaling dataset from 2017 to 2021 in Shanghai. We define the treatment group as areas close to the metro stations (within 500 meters of the station) and the control group as areas further away from the stations (beyond 500 meters), ensuring that the closest station for both the treatment and control groups is a Line 15 station. We find that the opening of a new metro station can increase the overall population clustered, number of visitors, and their visiting frequency in the treatment areas, relative to the control areas. Despite an increase in the number of visits, the duration of stay of visitors per person in the treatment areas has decreased. Additionally, the visitors reside in areas more distant from the metro stations after the opening, suggesting a broader influence radius of the stations.

The rail transit effects on urban vitality show significant spatial and temporal heterogeneity. We adopt a Difference-in-Difference-in-Differences (DDD) model to investigate the spatial heterogeneity of the effects between interchange and non-interchange stations, as well as stations inside and outside the outer ring road of Shanghai. The results show that the interchange stations have significantly higher attractiveness to visitors and higher visiting frequency increase compared with normal stations. Compared to stations within the outer ring road, stations located outside the outer ring road attracted more residents and visitors from further distances. To explore temporal heterogeneity, we divided the study period into weekdays and weekends, conducting DID regression for both groups separately. The results revealed that, the rail transit effect in attracting more people, especially more visitors, is higher on weekdays than on weekends.

This study combines big data and DID analysis to assess the treatment effect of rail transit on urban vitality and uses several years of panel data to capture the dynamic changes in vitality. The research findings have significant policy implications for TOD and initiatives to enhance the overall livability and attractiveness of urban spaces.

Keywords:

Rail transit; Urban Vitality; Mobile phone data; Difference-in-differences

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T_03 MOBILITY (A) / 735

Assessing Urban Mobility Resilience: The Combined Impact of Physical and Socio-Economic Systems on Bike-Sharing in Extreme Heat

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Global climate change has led to an increase in extreme heat events, which significantly impacts urban mobility, particularly bike-sharing systems. While considerable research has focused on the effects of the physical environment on urban mobility resilience (UMR), few studies have addressed the socio-economic impacts, and even fewer have examined the combined influence of both systems. This study explores the comprehensive effects of the physical environment and socio-economic systems on the UMR of bike-sharing in Shanghai during extreme heat events, using machine learning and an unbiased data-driven approach known as Accumulated Local Effects (ALE).

The study introduces a novel method to quantify UMR by calculating the ratio of bike usage during heat to normal usage in a given spatial unit. A range of physical and socio-economic factors are incorporated into the analysis. Methodologically, LightGBM models are applied to assess UMR in relation to physical and socio-economic systems separately, followed by an integrated model that combines both systems to analyze their joint impact on UMR. The study not only explores the numerical relationships but also examines the spatial distribution patterns of UMR. Results show that the integrated model provides stronger explanatory power, revealing significant coupling between the physical and socio-economic systems in determining UMR.

Key findings include: (1) Resident class significantly impacts UMR of bike-sharing. Affluent residents, who often live in areas with ample greenery and larger housing units, are less reliant on bike-sharing during extreme heat, preferring more comfortable transport modes such as private cars. Conversely, less affluent residents, especially those in areas with low economic activity and high building density, depend more on bike-sharing, even during extreme heat. (2) High-quality and accessible consumption areas positively influence UMR. Areas with high consumption quality, such as popular restaurants, attract more cycling trips even in extreme heat. Urban sub-centers, with their abundant job opportunities and short travel distances, further support high UMR, particularly on hot weekdays, underscoring the role of economic consumption in enhancing urban mobility resilience. (3) Functional facilities, particularly large buildings in densely populated areas, boost UMR by encouraging cycling during heat events. However, old urban areas often suffer from inadequate bike-sharing infrastructure and poor accessibility, which undermine resilience, especially under extreme heat. In areas with high public transport density, competition between bike-sharing and other transport modes may arise, as people tend to opt for walking or public transport in extreme heat. (4) Adequate public spaces play a crucial role in mitigating high urban temperatures, promoting cycling in hot conditions, and enhancing UMR. Parks and well-developed public transport systems are especially beneficial for affluent residents in supporting cycling on weekends. Furthermore, public spaces with cultural or historical significance, such as those in downtown areas, can stimulate bike-sharing usage, benefiting both residents and tourists through accessible, leisure-oriented spaces. (5) Population density plays a crucial role in enhancing UMR. In area with low-rise buildings and larger rental areas, increased population density can promote resilience by fostering a neighborhood atmosphere, which encourages higher bike-sharing usage, particularly on weekends.

To improve UMR, the study suggests enhancing cycling infrastructure, including bike lanes and easily accessible bike-sharing stations, and integrating the bike-sharing system into the broader public mobility network. Urban planning should focus on the balanced distribution of high-quality consumption areas, green spaces, and multifunctional spaces, while optimizing connectivity between cultural hubs and considering building morphology to mitigate heat and enhance comfort. Special attention should be given to regenerating infrastructure in older downtown areas and promoting sustainable mobility in affluent areas. This research provides new insights into the complex mechanisms that influence UMR and offers valuable recommendations for urban governance and climate adaptation strategies.

Keywords:

Urban mobility resilience; Extreme heat; Physical environment; socio-economic; Bike-Sharing

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T_03 MOBILITY (A) / 971

Why Cycle Through Rain and Wind? A retrospective exploration of behaviors, attitudes, and habits.

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While there is a global push towards active mobility, many regions encounter challenges in achieving successful transformative action. Nonetheless, intriguing exceptions exist, such as in the Netherlands, where individuals adopt active modes like cycling despite adverse weather conditions. This phenomenon suggests that travel decisions are not merely considered decision but also habitual travel choices.

This study utilizes Cognitive Dissonance Theory to examine the complex interplay between attitudes and behaviors that drive individuals in the Netherlands to cycle in challenging weather. The analysis focuses on the attitudes of individuals who hold a positive disposition towards cycling in adverse conditions, highlighting the social and cultural factors that reinforce this attitude. It also examines those who, despite holding negative attitudes, continue to bike frequently in poor weather, revealing the presence of attitude-behavior dissonance and the reasons for the lack of behavioral change. This indicates that people often seek to reduce cognitive effort and decision-making pressure by relying on ingrained routines.

The research uncovers nuanced self-justifications and the ways in which ingrained habits outweigh discomfort, influenced by socio-cultural factors such as cultural symbols, peer pressure, social norms, social media signals, shared values, and habitual behaviors formed during upbringing. These findings emphasize the need to shift the focus of active mobility promotion beyond physical infrastructure, advocating for strategies that are adaptable to local conditions and cultural contexts rather than replicating a single-country or single-culture development model.

Keywords:

Active Mobility; Cognitive Dissonance; Cycling Attitudes; Socio-Cultural Influences; Habitual Behavior

T_03 MOBILITY (A) / 866

Who lives (in) the 15-min city? Sociodemographic insights into the 15-minute lifestyle in Barcelona.

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The 15-minute city concept has gained prominence as a sustainable urban planning framework, advocating for the localization of daily activities by ensuring that essential services and amenities are accessible within a short walk or bike ride from residences. However, this concept raises a critical question: does living in high accessibility conditions inherently lead to proximity-based lifestyles? This study investigates the sociodemographic factors influencing the adoption of such lifestyles in Barcelona, a dense, compact urban environment celebrated for its high accessibility.

Utilizing detailed travel behavior surveys and highly disaggregated spatial datasets, the research examines the relationship between residents' proximity to 25 key destinations—such as schools, health facilities, and markets—and their actual travel practices for non-commuting purposes. Despite 95% of Barcelona residents living within areas that meet 15-minute city criteria, only 26% consistently engage in localized travel patterns for these trips. This reveals a significant gap between the potential of the built environment and actual behavioral outcomes.

The study identifies several sociodemographic determinants that mediate this gap. Women, older adults, and individuals with lower educational attainment are more likely to adopt a proximity-based lifestyle, whereas younger adults and highly educated individuals display a preference for extended travel patterns. These variations reflect broader societal and cultural dynamics, including preferences for specialized services, diverse amenities, and entrenched mobility habits.

Moreover, the findings challenge a core assumption of the 15-minute city model: that spatial accessibility alone can drive behavioral change. The study highlights the role of cultural norms, social networks, and individual preferences in perpetuating long-distance travel, even in accessibility-rich environments. For effective implementation, complementary policies such as restrictions on car use, incentives for localized services, and targeted educational campaigns are necessary to address behavioral inertia and mobility norms.

By revealing both the barriers to and opportunities for fostering proximity-based lifestyles, this research provides critical insights into the translation of built environment potential into equitable and sustainable urban living. These findings contribute to the ongoing discourse on the practicality and adaptability of the 15-minute city model in diverse urban contexts.

Keywords:

minute-city; proximity; accessibility; travel behavior; active transport; urban planning

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T_03 MOBILITY (A) / 64

The walkability potential matrix –a new method for measuring walkability potentials in town and city centres

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The object of this present study is to reveal the spatial configuration of 55 Norwegian towns and cities related to degree of walkability potentials. The aim is to investigate to what extent the street or road profile affect the walkability potentials in the town centres based on the distribution of roads in comparison of streets based on street names. The reason as to why we focus on the town centres, is that they tend to have the largest walkability potentials. For this, we used the last part of the street or road names to identifying whether it is a balanced street or a road encouraging car use. Likewise, we counted the number of X and T junctions in the town centre. Correlations between T and X junctions were made, and correlations between road and streets were made for the town centre of all 55 Norwegian towns and cities.

The results show that the higher number of X-junctions in correlation with T-junctions, the shorter urban blocks, implying higher degree of walkability potentials in the town centres. Likewise, the higher numbers of streets in correlation with roads in a town centre, the higher degree of facilitation of pedestrian friendly pathways. Three different clusters are identified in the statistical analyses, in which comply with the reputations the various town and city centres have regards walking attractiveness or private car dependency. The higher number of X-junctions in correlation with T-junctions, the more integrated the town centre is on a local as well as global scale. Likewise, the higher number of streets in correlation with roads, the more integrated the town centre is. Finally, the more the town or city centres have an orthogonal grid structure consisting of streets, the higher integration and thus higher walkability potentials.

The method is a first step to have some operational tools to measure degrees of walkability potentials in town and city centres.

Keywords:

Walkability; Junction type; path type; urban centres; space syntax

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T.03 MOBILITY (A) / 182

Planning that contributes to more utilitarian walking: The context of a Norwegian 'small city'

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The WALKMORE project addresses a critical aspect of planning and developing efficient and sustainable transport systems for the future: encouraging more walking. This is examined within the context of small Norwegian cities from both planning and user perspectives, through three main research activities (WPs):

1. Examining planning processes that shape the built environment.
2. Investigating the effects of built environments on walking behaviors and pedestrian perspectives.
3. Conducting pilot projects, using a tactical urbanism approach, to explore small-scale changes to built environments at the street level that may influence walking behaviors and enhance the attractiveness of walking.

To our knowledge, this is one of the first large-scale projects in Norway specifically addressing land use and transport planning for walking, particularly in the context of small cities. Walkability is closely tied to geographical and contextual factors, including the size of a city. In small Norwegian cities, typically with populations of 10,000–15,000, short distances offer significant potential for walking. However, the private car remains the dominant mode of transport.

We adopt a multidisciplinary, mixed-methods approach, executed through case studies in Narvik, Steinkjer, and Kongsvinger. This paper synthesizes results and experiences from the three main research activities of the project. It analyzes and discusses the implications of these findings for future urban development, land use, and transport planning.

A central question to be addressed is: *How should land use and transport systems, from the city to the street level, be planned and developed—considering both processes and projects—to ensure high levels of walkability and encourage more walking?*

Keywords:

Walkability; planning processes; walking behaviour; sustainable transport planning

References:

See link to the published paper from the project WALKMORE

T_03 MOBILITY (A) / 830

Urban freight mobility modes recognition classification and inclusive freight policy exploration based on truck trajectory data: A case study of Shanghai, China

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The movement of goods is integral to the daily lives of households and the operations of businesses, influencing the development of cities. In high-density urban areas such as Shanghai, China, trucks serve as the primary agents of goods transportation, yet they confront strict constraints. Studying the behavior patterns of urban freight car flows can reduce costs and enhance efficiency within the freight transportation industry, thus promoting sustainable economic development. Moreover, it is an inevitable requirement for refining urban traffic management, improving road network operation efficiency, and constructing sustainable urban traffic models. In recent years, the availability of high-frequency tracking data for trucks has greatly improved, facilitating the study of truck flow laws and the excavation of truck activity patterns from a microscopic perspective. There is room for continuous improvement in the methodological system for processing and analyzing truck activity data, as well as in the construction of flow patterns and models.

Based on high-frequency GPS tracking data of heavy trucks in Shanghai, this study explores and identifies different patterns of urban freight flow, and proposes freight-friendly policies and planning suggestions for an inclusive, efficient, and sustainable urban transport system, aiming to build an inclusive, sustainable, and innovative freight-friendly urban transport system. Initially, the basic travel information of heavy trucks is accurately obtained by preprocessing the GPS data of a large number, which includes stop point identification and map matching. Subsequently, the temporal and spatial characteristics of truck travel are described in terms of duration, frequency, spatial distance, scope, and infrastructure usage. By integrating data on land use, enterprise registration points of interest (POIs), transportation hub areas of interest (AOIs), etc., the activity purposes of trucks are inferred, variable sets are established, and these variable sets are subjected to two-step clustering to conclude typical truck activity patterns.

According to the clustering results, the patterns can be classified into two main categories and five sub-categories: wholesale and retail goods transportation (intra-city short-distance wholesale and retail mode, inter-city short-distance wholesale and retail mode); and inter-city and short-haul freight (inter-city and short-haul transit mode, inter-city long-distance heavy industry mode, mixed short-haul logistics mode). These different modes exhibit significant differences in terms of various characteristics in time and space. Based on these findings, this study proposes targeted management suggestions. For instance, more detailed traffic requirements are suggested for short-distance wholesale and retail trucks within the city. Real-time monitoring of peak hours and areas prone to traffic congestion, combined with big data, is recommended, along

with flexible traffic restrictions. To promote inclusiveness, appropriate toll subsidies should be provided for trucks with a mixed medium and short-distance logistics mode that are highly dependent on expressways.

The value of this study lies in the innovative use of freight-related data to explore freight mobility rules from a micro perspective. It points out the shortcomings of the current urban "one-size-fits-all" policy and the lack of consideration for the characteristics of different modes and needs in different periods within macro and general management and control. The research provides a scientific basis for the refined management of urban freight mobility and the construction of freight-friendly and sustainable urban transportation systems. In the future, urban mobility policies related to freight transport can be formulated and managed according to different freight modes, and an innovative, diversified and inclusive urban freight transport system can be built according to local conditions, promoting freight mobility to reduce costs, and fostering sustainable social and economic development. Additionally, the research integrates perspectives and thinking from urban planning, transportation, economic management, politics and other disciplines, providing referential ideas and methods for interdisciplinary and similar research and practice in other cities.

Keywords:

Freight mobility modes; Inclusive policies; Sustainable mobility systems

T_03 MOBILITY (A) / 497

Framing micromobility in Flanders (Belgium): an exploratory discourse analysis

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The current discourse around mobility transition sits on a spectrum that stretches between decarbonization objectives and inclusionary agendas. As a result, scholarship has argued for a just and equitable transition towards low-carbon modes (Martens, 2017; Sheller, 2018; Schwanen, 2021). In this transition narrative, micromobility is promoted as a sustainable means of transport for short trips. Micromobility can be defined as a class of personal transport vehicles with limited speed, dimensions and capacity (International Transport Forum, 2020). Compared to carbon-based mobility, it offers public health benefits, a carbon emission and air pollution reduction, a potential redistribution of public space and advancements in liveability agendas in general (Cupples and Ridley, 2008; Pucher and Buehler, 2017). An equitable transition towards low-carbon mobility does not only rely on technical innovations, but also on shifts in socially constructed practices and representations (Glachant and Behrendt, 2024). Micromobility is framed and discursively constructed through media representation and communication by policymakers, lobby groups and other organisations. Popular media plays a significant role in presenting mobility transitions to a wider audience. In Flanders (Belgium), as well as in other urbanised parts of the Global North, the introduction of new forms of micromobility, including electrically assisted and shared ones, led to the formation of multiple narratives, either legitimising or delegitimising their existence and use (Petzer, Wieczorek and Verbong, 2020). This paper is therefore structured around three main research questions: 1) How is micromobility framed in popular media? 2) What main discursive narratives can be distinguished? 3) What differences between the narratives of different types of micromobility can be identified? To achieve this, a discourse analysis of articles from mainstream newspapers and media portals published in the Dutch speaking press in Belgium is performed using the Nexis Uni database (Hajer, van den

Brink and Metze, 2006; Fairclough, 2013). Articles published between January 2018 and December 2024 are considered because in this period, the rapid introduction of new shared micromobility agents and the growing market share for electrically assisted bicycles led to a spike in popular media coverage. All news outlets target to the Dutch speaking community in Belgium are taken into account to make sure contrasting ideological and political views are included in the analysis. The hypothesis is that e-scooters are perceived in a more negative light than regular bicycles, with a strong emphasis on safety concerns, both for users and their surroundings, as well as the impact on public spaces and the use of bike lanes. It appears that e-scooter users are less positively framed in the media compared to cyclists, which may lead to stricter regulation, reduced allocation of urban space for their use, or even the stigmatisation of their users.

Keywords:

Micromobility; Inclusiveness, Flanders; Framing

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Data-driven prioritising of pedestrian-oriented infrastructure: A framework for resources allocation

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Pedestrian-friendly cities are crucial for sustainable urban development, as they prioritise walkability through safe, accessible, and appealing environments that promote healthier lifestyles and reduce reliance on motorised transport. These cities enhance social cohesion, economic activity, and public health by fostering active transportation modes and creating more liveable neighbourhoods. Achieving these outcomes requires

a comprehensive understanding of pedestrian behaviour, including movement patterns and influencing factors. Pedestrian-oriented urban strategies contribute to improving health and safety by reducing vehicle-related accidents (Mendzina & Vugule, 2020a; Singhal, 2018; Varsha et al., 2023a), promoting social inclusion and equity (Eledeisy, 2023), and advancing sustainability by prioritising environmentally friendly transport modes (Handy, 2020). Increasingly, governments align these strategies with the Sustainable Development Goals (Singhal, 2018; Jeong et al., 2023; United Nations, n.d.) through effective policies that emphasise pedestrian mobility in public spaces (Reyes-Norambuena et al., 2024). In this context, data-driven analysis of pedestrian movement is vital for improving urban safety, planning, and economic performance, enabling resource prioritisation for impactful micro-level infrastructure improvements.

This paper directly addresses the critical gap in the current application of pedestrian data to strategically guide investment decisions in urban infrastructure. It investigates how data-driven insights can be effectively harnessed to prioritise resource allocation towards historically underserved areas, thereby promoting equity and fostering social justice. Specifically, this research tackles key questions, including: *How can granular pedestrian data be used to identify and prioritize areas requiring investment in pedestrian infrastructure? How can such data inform resource allocation decisions to maximise impact? And how well does existing pedestrian infrastructure currently align with observed usage patterns?* To address these pressing questions, this study leverages the power of integrated data analysis, combining pedestrian activity data gathered from Wi-Fi sensors with detailed geospatial data on existing pedestrian infrastructure within Loughborough town centre.

To gain a comprehensive understanding of the spatial dynamics of pedestrian movement and infrastructural needs, we classified our analysis into four distinct categories: *Underutilised Areas*, characterized by high pedestrian traffic coupled with inadequate infrastructure; *Neglected Areas*, demonstrating low pedestrian activity and a corresponding lack of suitable infrastructure; *Effective Support Zones*, exhibiting both high pedestrian traffic and robust, well-maintained infrastructure; and *Overburdened Areas*, struggling with high pedestrian volume that significantly outstrips the capacity of the existing infrastructure. This nuanced classification powerfully demonstrates the superiority of our data-driven analytical framework over traditional, less informed methods. By offering a precise and comprehensive evaluation of the relationship between pedestrian movement and infrastructural provision, this research reveals strategic opportunities to address spatial inequities and foster the creation of more inclusive and equitable urban environments. Specifically, the findings enable the development of targeted and evidence-based resource allocation plans to improve pedestrian infrastructure, focusing particular attention on underserved and overburdened areas. Ultimately, this data-driven approach promotes more equitable, sustainable, and pedestrian-friendly urban environments, leading to demonstrably fairer spatial outcomes and significantly enhanced urban planning decisions.

Keywords: Inclusive Cities, Spatial Equity, Data-Driven Decision Making, Pedestrian Activity, Pedestrian-Oriented Infrastructure.

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Urban Rail Transit Usage in Developing Countries: The Case of Istanbul

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This study examines urban rail transit usage in Istanbul, offering critical insights into the challenges faced by developing countries in integrating transit infrastructure with rapid urbanization. Using regression models based on the node and place characteristics of rail stations (Bertolini, 1996), the research evaluates factors influencing passenger dynamics at rail stations between 2017 and 2022. Despite Istanbul's significant rail network expansion and public investment (Newman & Kenworthy, 2015), only a subset of stations exhibited concurrent increases in passenger usage and population. These findings reflect the need for tailored urban planning approaches in developing contexts. The study employs three models—the Node Model, Restricted Node-Place Model, and Node-Place Model—to analyze rail station performance using panel data. Key results demonstrate the importance of node characteristics, such as transfer opportunities, in determining passenger volumes. Stations offering multiple transfer options observed passenger numbers more than double the average, underlining the critical role of network integration. Conversely, place variables, including population density and employment within station catchment areas, displayed inconsistent significance. For example, in the Node-Place Model (2022), both population and employment variables showed positive associations with passenger volumes. However, across multiple time points, these variables failed to produce significant results in panel regression analyses. These outcomes suggest that while station characteristics are critical, other factors—such as socio-economic shifts, land-use changes, and urban dynamics—play a significant role in shaping transit usage (Cervero, 2013).

The study also uncovers differences in usage patterns between rail types. Marmaray suburban rail and light rail transit stations experienced 10% and 40% lower passenger volumes, respectively, compared to metro stations, reflecting disparities in service standards. Additionally, station proximity to city centers (as measured by the number of intermediate stations) significantly influenced passenger values, emphasizing the centrality of urban cores in transit dynamics. Interestingly, while Istanbul's rail investments have enhanced network accessibility, only 27 station areas (19.71%) showed simultaneous increases in population and passenger values during the study period. In contrast, over 65% of station areas experienced population declines, with a substantial number losing passengers as well.

The results highlight Istanbul's struggle to align its rapid "railization" (Gökçe, 2024) with broader urban transformation processes. Urban sprawl, accelerated motorization, and uneven land-use development further exacerbate these challenges (Gakenheimer, 1999). The findings suggest that stations in Istanbul are often treated as isolated nodes within the network, rather than integral components of the urban fabric. This approach limits their potential to drive sustainable urban development, as seen in other global examples of successful TOD, such as Bogotá and Curitiba (Cervero & Kockelman, 2008). The study underscores the need for a comprehensive planning approach that integrates rail transit with land use and urban development strategies (Bertolini et al., 2008). Rail

stations should not only facilitate mobility but also act as catalysts for sustainable, inclusive urban growth. Institutional inefficiencies, socio-economic inequities, and fragmented urban governance must be addressed to maximize the socio-economic and environmental benefits of rail investments. Policymakers are encouraged to adopt strategies that strengthen regulatory frameworks, promote equitable access to transit, and enhance station area development to foster vibrant, livable urban environments. Istanbul's experience offers valuable lessons for other developing cities, particularly those undergoing rapid urban transformation. The weak correlation between population changes and transit usage observed in this study reflects the complexity of urban dynamics in developing contexts. Future research should focus on unpacking these dynamics, exploring the role of factors such as institutional reforms in shaping transit behavior.

The study concludes that achieving this alignment requires a paradigm shift, where rail transit is not only planned as a transport mode but also as a critical driver of urban transformation.

Keywords:

Urban Rail Transit, Developing Country, Istanbul, Node and Place Characteristics

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Urban Canopy and Walking Behaviour

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Urban green spaces significantly influence walking behaviour, offering both physical and mental health benefits. However, existing research often relies on static, residence-based measures of green exposure, overlooking the dynamic nature of individuals' daily mobility patterns. This study addresses this gap by examining the relationship between green space exposure and walking behaviour, with a focus on capturing dynamic exposure using a case study in Granada, Spain. Granada's compact, historical urban form, characterized by narrow streets and limited large green areas, provides a unique context for exploring how distributed greenery affects mobility. Using GPS tracking and NDVI data, we analysed the movements and green exposure during 480 participated days. Results reveal notable discrepancies between residential and route-based green exposure, with residents of less vegetated neighbourhoods often encountering higher levels of greenery during their walking trips. Temporal analysis indicates greater exposure to green spaces on weekends, associated with leisure activities, while gender-specific patterns highlight differences in exposure types and routes.

Keywords:

walking; GPS; greenery; urban vegetation

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Superblocks and Electoral Outcomes: Examining Local and Spatial Spillovers in Barcelona

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This study investigates whether the implementation of superblocks in Barcelona—a high-profile urban intervention aimed at improving environmental and social quality—has triggered an electoral backlash against the ruling party responsible for the intervention. Superblocks were progressively implemented between 2015 and 2019, with additional expansions in subsequent years, allowing us to test both the immediate and longer-term electoral impacts of this policy. Using data from municipal elections in 2015, 2019, and 2023, we employ a fixed-effects spatial panel regression model to estimate electoral outcomes across neighborhoods, explicitly accounting for time effects and spatial autocorrelation. This approach enables us to disentangle localized impacts of superblocks from broader temporal and spatial trends.

Our analysis focuses on whether residents directly living within superblock areas exhibited changes in their electoral support for the ruling party. Additionally, we examine potential spatial spillover effects—how neighboring areas, not directly treated with superblocks, may have been influenced by their proximity to these interventions. Preliminary results suggest that the direct effect of superblocks on electoral support is positive but moderate, indicating a slight increase in votes for the ruling party within superblock areas. The indirect effect, reflecting the influence on neighboring areas, appears larger in magnitude, pointing to a broader spatial diffusion of electoral support. While these effects suggest a localized and positive electoral benefit from superblocks, it is important to note that the ruling party's overall vote share has been declining since 2015, culminating in its loss in the 2023 election. This analysis attempts to disentangle whether superblocks contributed to increasing support in specific areas while other factors—likely more significant—reduced overall popularity citywide.

Interestingly, while the ruling party benefited from superblocks, other parties in the governing coalition did not experience significant changes in electoral support, suggesting that the observed effects are closely tied to the party most visibly associated with the policy. Furthermore, no significant impact was detected on the electoral outcomes of opposition parties, indicating that superblocks have not provoked widespread political polarization in these areas.

Barcelona's municipal elections operate under a proportional representation system, where votes are aggregated across the city to allocate council seats. This system provides a unique opportunity to analyze neighborhood-level variations while understanding their city-wide implications. By focusing on localized voting behavior, this study captures nuances in how urban policy interventions, like superblocks, shape political outcomes.

These findings highlight the complex interplay between urban policy interventions and electoral behavior. While superblocks appear to generate localized and spatially distributed electoral support for the ruling party, their overall influence remains modest relative to broader trends. Moreover, our analysis reveals that spatial spillovers may amplify the effects of such interventions beyond their immediate boundaries. However, these results should be interpreted with caution, as the direct and indirect effects observed in the model do not account for all potential determinants of voting behavior. In the short term, we aim to refine the model specification further, incorporate additional variables such as socioeconomic characteristics and accessibility measures, and conduct robustness checks to better understand these dynamics and present a more comprehensive analysis at the conference.

This study contributes to the broader literature on the political consequences of urban interventions and the role of spatial dynamics in shaping voter behavior. By leveraging a spatial panel regression approach over a multi-election timeframe, it offers a robust

framework for assessing how ambitious urban policies like superblocks influence electoral outcomes across both space and time.

Keywords:

Electoral backlash; active mobility; superblocks

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TRANSPORT INFRASTRUCTURES, SHARED MOBILITY AND PUBLIC SPACES –THE URBAN DESIGN FOR MOBILITY HUBS

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Many municipalities and public authorities seek to decarbonize transport and inspire a modal shift towards increased walking, cycling or public transport. However, the urban form poses a major obstacle. The sprawling highway infrastructure causes fragmentation of urban regions and wide roads act as barrier for pedestrians and cyclists. It is often impossible to walk, cycle or use public transport because of barrier effects caused by road infrastructure and neighbourhood design (Southworth, 2005). The problem of carbon-intensive car-oriented suburban developments can be addressed with combining mobility hubs and Transit-Oriented Development (TOD). TOD is an urban design alternative to transform car-oriented suburbs into walkable mixed-use neighborhoods that support public transport. Mobility hubs are new public spaces and transport infrastructure aiming to boost the accessibility (the so-called last mile) by offering on-demand mobility systems as shared bikes and electric cars at public transport stations and in surrounding neighbourhoods. Intelligent Transport Systems (ITS), Mobility as a Service (MaaS) and Intelligent Mobility (IM) links information technology with transport systems in various application areas: journey planning, sharing vehicles, smart parking, smart ticketing, etc. (Mulley et al., 2019). The mobility hubs seek to create a physical impact of on cities by materializing smart transport solutions as spaces on streets and in buildings, on sidewalks or parking lots. The cities responded by creating market packages for parking shared bikes, cars, scooters, etc. There is lots of research on implementation of carpools, shared bikes and shared electric cars under the MaaS paradigm (Hensher, et al., 2020), but few urban design studies of impact of mobility hubs and shared mobility systems on cities with morphological methods. The potential to implement and experiment with mobility hubs is high. Unlike TOD, that seeks to transform entire neighborhoods into transit-supportive walkable environments, the mobility hubs can be established as minor interventions as marking on sidewalks, at urban parking spaces and at suburban Park&Ride facilities that can be transformed into public spaces. Even though there is lots of focus on finding space on sidewalks or streets for shared bikes, cars, scooters, etc., the real potential lies in placemaking of suburban Park&Ride (facilities available for upgrading to mobility hubs). This is the motivation for TOD and mobility hubs urban design innovations and leitmotif to bring urban change and create social impact with mobility hubs.

The mobility hubs create a new buzz as future mobility infrastructure. But to inspire a major change in travel there is a need to create conditions for seamless transfer to shared mobilities based on urban experience of high-quality public spaces. Only with urban design at human scale and establishing mobility hubs as attractive public spaces it becomes possible to inspire higher use of shared mobility systems. This paper discusses how to strategically transform parking spaces and underutilized public spaces into working mobility hubs. It looks at experiments with mobility hubs in Germany, Sweden, France and USA to dissect the design elements of mobility hubs, by characterizing

and conceptualizing future public spaces with shared mobility systems. The methodology includes literature review, field observations of mobility hub experiments and mapping the urban design elements (e.g., bike pools on Figure 1 and carpools on Figure 2). The typologies of mobility hubs that will be abstracted based on observation study will be structured based on dimensions (in a context of placemaking see Nativade, 2022), diagrammatized and organized into design guidelines (see Stojanovski, 2020, for typological methodology of analyzing integration of public transport stops and morphological elements, including barrier effects, frontages and segregation from streets).

Keywords:

Mobility hubs; Transit-Oriented Development (TOD); public spaces; shared mobility

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T_03 MOBILITY (A) / 934

Proximity as a conceptual lens. The growing recognition of proximity planning

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The concept of proximity can be a useful framework for interpreting and designing the urban environment. It aids in understanding spatial and social relationships while serving as a design tool to shape those interactions. This paper explores the resurgence of proximity in urban planning, offering insights for policymakers and designers.

The concept of proximity has gained international popularity recently with the '15-minute city' idea as a feasible and flexible solution for human well-being and effective climate action (Manzini, 2022). The recent COVID-19 crisis shed new light on the relevance of the concept which inspired numerous ideas of application. However, proximity is a fundamental concept in geography and urban studies and goes beyond easy access to various urban functions or the measure of distancing. The idea has old roots (Crawford, 2023) and evergreen Jacobs's and Gehl's seminal urban theories must be mentioned. Urban designers and planners may not explicitly use the term proximity-propinquity, but the concept is central to their work. In fact, it plays a role in shaping urban dynamics, influencing patterns of social interaction, organization, economic activity, and resource accessibility.

The growing recognition of proximity in urban planning as a key factor in creating livable and resilient cities is evident in some initiatives such as the Global Observatory of Sustainable Proximities, a capacity-building platform launched to support 'proximity' in urban planning supported by the UN (GOSP, 2025). The concept is, in fact, integral to the United Nations' strategies for achieving the Sustainable Development Goals, and is explicitly mentioned in SDG11 and SDG 9.

Despite its relevance and resurgence in practice, research on proximity planning has not kept pace with the increased recognition. The conceptual emphasis on proximity is rare. This contribution aims to foster a deeper understanding of the attention to proximity – more precisely to the group of concepts proximity, propinquity, intensity – in the planning discourse. In fact, the research hypothesis is that spatial proximity imposes itself prominently in new urbanization processes in developing countries and that proximity is back in the urban design-planning discourse in developed countries for the attention given to small dimensions, micro-mobility, polycentrism and compactness, intensification of uses (Cogato Lanza and Girot, 2014).

The study addresses proximity through three lenses: proximity as a social link; as shares spaces; as functional organization (Pellegrini, 2012). The study draws on key texts and different arguments, from Melvin Webber Order in Diversity: Community without Propinquity, 1963, to Barthes' Seminar Comment vivre ensemble at the Collège de France (1976-'77), to Neil Brenner's book New Urban Spaces. Urban theory and the scale question, 2019, which explores the relevance of socio-spatial interdependencies and inter-scalar framework. The paper discusses the concept and contributes to a deeper understanding of proximity's role in contemporary urban planning and its implications for sustainable development.

Keywords:

Proximity; Conceptual framework; Urban Planning; Socio-Spatial Dynamics; Sustainable urbanization

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Socioeconomic Disparities in Daily Activity Spaces: Insights from Smartphone Mobility Data on Non-Commuting Trips

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Urban mobility significantly shapes accessibility, equity, and social interaction in cities. While commuting patterns have been extensively studied, non-commuting mobility—such as travel for leisure, shopping, and social visits—remains underexplored despite its critical role in urban vibrancy and socioeconomic well-being. Socioeconomic status, including income, age, and gender, influences how individuals navigate urban spaces, and disparities in accessibility persist across demographic groups. Spatial inequities in non-commuting mobility can reinforce social exclusion and limit access to urban opportunities, particularly in a dense and complex city like Seoul. Existing research on urban mobility tends to prioritize commuting behaviors, overlooking the daily activity spaces that define the lived experience of different social groups. This study seeks to address this gap by examining how socioeconomic factors shape non-commuting mobility patterns in Seoul, focusing on activity space distance and destination diversity to provide insights into urban engagement beyond work-related travel.

Despite attention to mobility inequalities, there is limited research on how non-commuting mobility differs across income, age, and gender groups. Understanding who has greater access to mobility beyond work-related travel and which demographic groups face constraints in their daily movement remains an essential but insufficiently explored area of study. Additionally, previous research has largely overlooked the role of destination diversity in mobility studies, despite its implications for social interaction, economic opportunities, and urban vitality. A comprehensive understanding of activity space distance and destination diversity is crucial for identifying spatial inequities and formulating strategies for more inclusive urban mobility. This study aims to quantify the impact of socioeconomic factors on non-commuting mobility in Seoul by examining how income, age, and gender shape travel behavior across different time periods. Specifically, it investigates disparities in activity space distance and destination diversity among various socioeconomic groups and assesses whether lower-income individuals face mobility constraints that limit their access to diverse urban destinations.

Using large-scale mobility data from Seoul, this study uncovers significant socioeconomic disparities in non-commuting mobility patterns. Findings reveal that higher-income individuals tend to travel longer distances for leisure and social activities, whereas lower-income groups exhibit more constrained activity spaces, often limited to their immediate neighborhoods. These findings suggest that financial and time-related constraints may hinder lower-income individuals from accessing diverse urban destinations. Gender disparities are also evident, as women, particularly those in middle-age groups, demonstrate smaller activity spaces and lower destination diversity than men. This pattern may be attributed to safety concerns, caregiving responsibilities, or societal norms that shape women's mobility choices. Age also plays a significant role in mobility patterns; younger individuals exhibit greater destination diversity, suggesting higher spatial flexibility, whereas older adults have more restricted mobility and primarily visit familiar locations. These age-based differences raise concerns about accessibility in an aging society, emphasizing the need for age-friendly urban policies.

The results of this study highlight structural inequalities in urban mobility that limit access to economic, social, and recreational opportunities for disadvantaged groups. By shifting the focus from commuting to non-commuting travel patterns, this research contributes to a more comprehensive understanding of urban mobility experiences and the role of socioeconomic factors in shaping them. The introduction of activity space distance and destination diversity as key metrics offers a nuanced perspective on spatial inequities in Seoul. The study underscores the need for targeted policies to promote equitable access to urban resources, particularly for lower-income, female, and elderly populations. Addressing these disparities requires planners and policymakers to consider interventions such as improved public transportation accessibility, enhanced safety measures, and urban design strategies that foster mobility equity.

Keywords:

Non-Commuting Mobility, Destination Diversity, Socioeconomic Disparities, Urban Mobility

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T.03 MOBILITY (A) / 1407

Evaluation of european tram systems: a GIS-based quantitative approach

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Promoting public transport can significantly contribute to achieving climate neutrality goals, particularly in Europe, where 25% of CO₂ emissions originate from the transport sector (European Parliament, 2023). In order to move towards this direction, many European cities have equipped themselves with innovative public transport systems. These include the 'modern European tram' (Heipp & Wetzel, 2008), which is a contemporary reinterpretation of the 19th-century tram, and which remained the primary means of urban transport until the 1950s. In fact, in the post-war period, tram systems were gradually phased out in many cities due to their perceived obsolescence compared to the cars and buses (Petkov, 2020). However, since the 1980s, cities have re-introduced these means of transport on their streets with new criteria. This process, known as the 'tram renaissance', started in France and then spread across the entire European continent. The modern tram differs from the 'legacy' tram both in terms of its performance and the structuring role it can play in urban public space (Richer, 2016).

The tramway renaissance has aroused great interest in academic literature. Three distinct approaches to the topic can be identified. The first consists of the qualitative evaluation of (at least) two different case studies, located in different contexts, with the aim of comparing different legislation and design traditions (Richer & Hasiak, 2014). A second approach consists of the quantitative evaluation of one or more modern tram projects, with the aim of assessing their economic consequences (Knowles & Ferbrache, 2016). The third approach consists of the systematic cataloguing of quantitative and transport aspects of existing tram systems (UITP, 2019), possibly with a focus on modern trams (Spinosa, 2022). In addition, it is worth mentioning a strand of literature focusing on legacy trams, mainly located in Central and Eastern European cities. The focus of such studies ranges from understanding the impact on tram systems of different political regimes (Khairullina & Ganges, 2021) to assessing the feasibility of new systems by analysing existing systems (Kołos & Taczanowski 2016).

This paper proposes an alternative, GIS-based methodology. It is designed for the evaluation of tram systems intended not only as infrastructure or services, but as integrated systems that include both the components, as well their urban context. The method consists of four phases. In the first phase, existing literature was analysed to identify evaluation criteria and attributes. In the second phase, attributes were selected that could be measured quantitatively and calculated in a GIS environment, using open source datasets. These attributes were then categorised according to three criteria: people, places and nodes. In the third phase, tram systems were selected for analysis. In the fourth phase, based on the previously identified attributes, three indices were calculated for each criterion respectively, and calculated in GIS environment.

This method enabled a large-scale quantitative analysis of tram systems. All European systems were analysed, excluding the ones located in functional urban areas (FUA) with a metro system too. Furthermore, FUAs with more than 1,500,000 inhabitants were excluded. For these cases, future ad hoc research is proposed. The results were aggregated by country, making it possible to identify common patterns, such as the correlation between urban density and the distribution of tram lines. This study provides an original contribution to the body of research on the European tramway renaissance.

The expected results aim to support urban planners and decision-makers in optimising tram networks, with a focus on integration on urban context.

Keywords:

Tram; Public Transport; Europe; GIS;

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T_03 MOBILITY (A) / 388

The operationalization and implementation potential of x-minute city policies across the globe: A review of the literature

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X-minute city (XMC) policies represent a proximity-based planning approach designed to promote local living and active travel. These policies have gained significant attention in both research and practice, particularly since the mayor of Paris incorporated Carlos Moreno's 15-minute city framework into her 2020 re-election campaign. In this paper, we review thirty-seven studies that explore the potential of XMCs across the globe. Our analysis focuses on how the XMC concept has been operationalized in research, trends in implementation potential, and equity concerns related to these policies. Authors in our selection recognize the XMC framework as a "culmination" or a "heritage" of long-standing planning theories and practices, often linking it to concepts like Clarence Perry's Neighborhood Unit, the New Urbanist Movement, Jane Jacobs' ideas, and policies such as Portland's 20-minute neighbourhood strategy. To operationalize XMCs, researchers frequently develop assessment measures or indexes to evaluate the XMC potential of specific locations. This often involves using secondary data sources, such as local and

open-source databases, to identify the location of points of interest. From this data, cumulative or gravity-based accessibility measures are derived aiming to determine the percentage of the population located within x-minutes from specific amenity types or bundles. The choice of amenities defined as basic urban functions varies widely across studies and is highly dependent on data availability. Most studies prioritize destinations related to services, education, healthcare, and entertainment; categories initially proposed by Moreno. However, few studies have examined job accessibility within the XMC framework, often due to data limitations or the perception that work locations are a regional, rather than local, issue. Studies predominantly focus on walking, with relatively few addressing cycling, highlighting the research's strong emphasis on walkability. Furthermore, the literature suggests that especially in regions without a strong cycling culture, local living will be mostly constricted by what is achieved on foot offering a justification for its walkability focus. Studies in Europe and Asia tend to adopt shorter time thresholds compared to those in North America and Oceania. This difference reflects the challenges of implementing such policies in historically sprawled regions, where the inclusion of transit in the analyzed modes often becomes necessary. A recurring finding is that core central areas, especially in Asian and European cities, are more adapted to local living while lower accessibility levels are found in peripheral and low-income areas. Moreover, studies highlight the critical role of zoning laws in shaping accessibility, with mixed-use neighborhoods inducing shorter trips for the average person. Across all contexts, our review of the literature reinforces the need to not approach the XMC as a one-size-fits-all solution. XMC policies should be derived based on an understanding of local travel behavior and preferences, while considering inequalities of access and regional idiosyncrasies, especially in sprawled regions where a combination of local and regional planning approaches is needed to achieve XMC goals.

Keywords:

15-minute cities;x-minute cities: walking: cycling: urban policy

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Reshaping Metropolitan TOD Corridor: The Impacts of Shanghai-Suzhou Intercity Rail Transit on Travel Behavior Along the Corridor

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In Metropolitan areas, the demand for high-frequency and high-time-value travel between megacity and its surrounding cities is continuously growing. In 2023, the commuting scale between Shanghai and its neighboring cities reached 155,000 people, with a growth rate exceeding 60% over five years. Due to its geographical location and economic industrial advantages, Suzhou has become the city most closely connected to Shanghai within the Shanghai metropolitan area.

In 2023, the opening of Suzhou's Rail Transit Line 11 and its seamless connection with Shanghai's rail transit network at Huaqiao Station introduced intercity rail transit in the urban area, providing new travel options for residents along the corridor and promoting a corridor growth model favorable to Transit-Oriented Development (TOD). This study

aims to explore the impact of the opening of intercity rail lines in the metropolitan area on residents' travel behavior and its mechanisms, and to analyze the transformation of various transportation modes and their connection with rail transit. The findings provide empirical evidence for strategies to promote multimodal transportation integration, reduce traffic carbon emissions, and strengthen TOD development along the corridor.

Based on an analysis of rail transit passenger volume, this study selected four representative stations for field research and conducted a questionnaire survey simultaneously. It analyzed the changes in travel characteristics of residents along the corridor before and after using rail transit. Utilizing the opening of the new line as a natural intervention, and to exclude the influence of other irrelevant factors, the study divided the research subjects into treatment and control groups based on the distance between passengers' origins and destinations and the rail stations. Applying the Difference-in-Differences (DID) method, the study quantified the differentiated impact of the opening of rail transit on residents' travel modes, frequency, and experience.

The findings indicate that following the opening of the new line, the travel activity of residents along the corridor significantly increased, with a strong positive correlation observed between travel frequency and satisfaction. The frequency of non-commute travel increased more prominently compared to commute travel, reflecting that the new line offers a more convenient transportation option for leisure and recreational activities, effectively stimulating the demand for non-commute travel. In terms of commute travel, residents exhibited a relatively higher tolerance for transfer distances. Residents demonstrated diverse choices in transfer modes, with variations in the selection of transfer modes across different time periods, and a relatively higher proportion of walking and cycling during peak hours. The new rail transit line significantly reduced the usage of private cars and taxis, with about 12% of former private car users switching to P+R (Park and Ride) or K+R (Bike and Ride) travel patterns. However, the impact of the new line on intercity rail and non-motorized travel was less pronounced.

This study reveals the significant impact of rail transit on changes in residents' travel behavior and its potential role in reshaping the Shanghai-Suzhou intercity TOD corridor. Rail transit has significantly promoted green travel in the areas along the corridor, effectively reducing traffic carbon emissions by decreasing the use of private cars and taxis. To further enhance the efficiency and service level of the entire transportation system, it is recommended to strengthen the coordinated development of transportation and land use, improve the public transit connection system, optimize the environment for walking and cycling, increase P+R facilities, and intensify the development of areas around stations along the corridor to enhance the passenger attraction capacity of intercity rail transit.

Keywords:

Rail Transit, Travel Behavior, TOD Planning, Transportation Transformation, Carbon Emissions

T_03 MOBILITY (A) / 853

Shaping Pedestrian Mobility: Exploring Urban and Spatial Features of Cendere Valley, Kagithane

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Livable cities, responding the needs of their citizens, should encourage social interaction, and consider environmental sustainability. In this context, walkability plays a critical role in the design of livable cities. While walkability refers to the physical, social and environmental features that enable pedestrian mobility and increase accessibility in cities, urban design includes spatial organization and planning processes to ensure walkability. Many

studies on walkability divide the basic parameters affecting walkability into two as the physical characteristics of the urban space (1) and the way it is perceived by individuals (2) (Alfonzo, 2005; Ewing and R., Handy, 2009). Then the literature address the spatial characteristics of urban design, while investigating the individuals' perceptions and walking behavior (Ewing and Handy (2009). In the literature, studies measuring, mapping or correlating walkability generally use the survey method to measure user perception and the index method to measure spatial characteristics (Fan et al., 2018; Ruiz-Padillo et al., 2018).

In Turkey, pedestrian mobility, in literature has mostly been addressed from the perspective of public space and accessibility (Ercan and Belge, 2017). Analyses of pedestrian GPS data and index values for various walkability criteria in literature focus on the examination of pedestrian mobility and spatial characteristics in Istanbul's urban macroform. Next to studies on perception and the physical characteristics of urban space, there are limited studies comparing these studies on the basis of index values based on certain standards. This study aims to quantitatively reveal pedestrian movements in urban open spaces through the physical characteristics of the urban space. The primary research question of this study is: How do the urban and spatial characteristics of open spaces shape pedestrian mobility? This question will be explored in the context of Cendere Valley, Kağıthane, where a walking path and open space arrangement have been implemented in an urban park scale. In this study, a holistic methodological approach is adopted to combine spatial and behavioral dimensions and to analyze the level of walkability, along the Kağıthane stream axis of Istanbul as the study area. Since there are different urban uses and transportation connections that affect the level of walkability in this axis, we basically examined the case area in three sub-zones to distinguish both spatial features and walkability measures.

The data to be used in the study were obtained from pedestrian counts in the site observations and published metrics, officially published by local authorities. The variables related to the spatial characteristics of the urban open space based on the quantitative metrics are obtained from Istanbul Metropolitan Municipality's open geodata portal. As fundamental findings of the study, spatial analysis is an important tool for understanding the effects of the spatial characteristics of urban open spaces on pedestrian mobility. The pedestrian density data obtained allowed the analysis of the behavior of individuals at different time periods and revealed how these behaviors are associated with spatial characteristics. By addressing the interactions between urban form and pedestrian mobility in a holistic manner, this study makes important contributions to the development of strategies to increase walkability in urban design processes.

Keywords:

Walkability, Pedestrian Mobility, Urban Open Spaces, Walking path, İstanbul

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Analysis of Regional Disparities in Public Transportation Accessibility: A Spatial Approach Based on Equal-Time Reachable Areas

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Public transportation accessibility in modern cities significantly influences individual mobility efficiency and is a crucial factor in enhancing urban competitiveness and ensuring balanced regional development. However, disparities in accessibility persist across different areas, limiting mobility in regions with underdeveloped public transportation networks. This, in turn, restricts access to employment opportunities and educational services, exacerbating regional development inequalities and disparities in quality of life. Public transportation accessibility is particularly important as it offers a more cost-effective alternative to private vehicles and provides equitable mobility services across diverse social groups. Furthermore, it plays a vital role in shaping long-term urban development strategies.

To improve public transportation accessibility, an accurate assessment of the current level is essential. However, existing studies have primarily conducted analyses based on administrative boundaries, which include areas without residents or transit stops, thereby limiting the precision of accessibility evaluations. Additionally, most studies focus on specific metropolitan areas, making it difficult to compare accessibility levels across different regions within a country. Moreover, previous research often evaluates accessibility based on a single mode of transportation, lacking a comprehensive multimodal analysis.

To address these limitations, this study proposes a “travel time-based reachable area analysis” approach by integrating transit stops and actual residential areas within a 500m × 500m grid-based network in South Korea. This method visualizes the areas that users can realistically reach within a given time frame. Furthermore, the analysis is extended beyond grid units to administrative districts (“dong”) and incorporates data from all public transportation modes, including multimodal transfers. The study employs the following methodology:

First, establishing a 500m × 500m grid-based public transportation service area based on actual residential spaces rather than administrative boundaries.

Second, collecting and analyzing operational data from various transportation modes, including buses, trains, subways, aviation, and maritime transport, to assess interconnectivity, distances, and travel times.

Third, allocating public transportation stops to grid cells and identifying the range of reachable grids within a given time frame.

Last, comparing public transportation service coverage with regional population distributions to identify areas with insufficient transit services.

The analysis results indicate that the Seoul Metropolitan Area (SMA) possesses a more extensive transportation network than other regions. However, when considering service levels relative to population size, SMA exhibits relatively lower public transportation service availability. In contrast, regional cities demonstrate more localized mobility patterns centered around metropolitan hubs, with a narrower service range compared to SMA. Notably, certain areas exhibit disparities in public transportation accessibility relative to population density, highlighting regional imbalances.

The grid-based public transportation accessibility assessment proposed in this study enables a more realistic evaluation of mobility by focusing on actual residential areas. By analyzing reachable areas within the same travel time and incorporating population distribution, this approach facilitates the design of demand-responsive transportation services. Consequently, the findings of this study are expected to contribute to mitigating regional disparities in public transportation accessibility.

Keywords:

Spatial inequality; Public transportation accessibility; Disparity; Spatial coverage

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T_03 MOBILITY (A) / 550

Study on Passenger Travel Characteristics in Rural Township Rail Transit of the Shanghai Metropolitan Area

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In recent years, the connectivity between key cities and adjacent municipalities within the Shanghai Metropolitan Area has intensified, rendering cross-regional commuting a prevalent occurrence. China has rapidly constructed Suburban Railways to satisfy the need for quick regional mobility. Unlike Japan Railways (JR) lines and Réseau Express Régional (RER) lines, China's Suburban Railway systems have not been standardized into a single format, incorporating both metro-style rural township rail transit and conventional Suburban Railways. Metro-style rural township rail transit, with shorter station spacing and faster speeds, is better suited to China's compact suburban urban layouts, making it an important form of transportation for promoting tight urban-rural integration and regional coordinated development. However, it is still unclear how best to construct suburban rail transit systems in terms of land use planning, spatial morphology, fundamental functionality, and integration with urban development.

With little focus on rural township rail transit, the majority of current research examines the features of passenger travel in urban rail transit systems. Furthermore, there are few studies that look at the whole travel chain of passengers in a single day, which obscures the complex links between travel behavior and spatial dynamics. Therefore, it has become imperative to define the different kinds of passengers and their patterns of behavior, as well as to optimize the functional layouts of facilities according to the needs of the local population.

This study focuses on rural township rail transit in the Shanghai Metropolitan Area, using Location-Based Services (LBS) data to create full daily trip activity chains of passengers. The study creates thorough passenger profiles for each age cohort by examining spatiotemporal behavioral features such as travel purpose, temporal patterns, transfer

modes, and activity areas across various age groups. Furthermore, the study investigates the composition and unique demands of passenger groups at distinct stations, categorizes station typologies, and develops focused methods for optimizing operational facilities.

This research not only fills the gap in rural township rail transit studies but also provides an in-depth analysis of diverse passenger travel characteristics and needs. The findings support the development of rational functional facility layouts around rural township rail transit stations, facilitate cross-regional and urban-rural mobility, and optimize the allocation of urban-rural resources and functional synergy. By leveraging the rural township rail transit network, this study further supports cross-regional activities, urban-rural interactions, and the optimization of regional functional structures. Ultimately, this study promotes the regional coordinated development of the Shanghai Metropolitan Area.

Keywords:

Rural Township Rail Transit; Travel Characteristics; Passenger Profiles

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T_03 MOBILITY (A) / 990

Exploring Pedestrian Comfort and Urban Mobility: A Multi-Modal Assessment of Walking Experiences at Popular Restaurant Destinations in Shanghai

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Pedestrian comfort and mobility are crucial considerations in urban planning, particularly in densely populated megacities like Shanghai, where commercial districts serve as key hubs for pedestrian traffic. While existing research on walkability primarily focuses on broad urban metrics such as land use and pedestrian infrastructure, there is a noticeable gap in understanding how specific factors—such as pathway conditions, traffic flows, and environmental elements—affect pedestrian experiences in areas with high footfall. This study addresses this gap by examining pedestrian comfort and urban mobility in Shanghai's inner-ring commercial areas, specifically focusing on popular restaurant destinations, which attract significant pedestrian travel.

The research utilizes navigation data from *Gaode Map* to identify popular restaurant destinations within Shanghai's inner core, based on real-time popularity scores and number of navigation arrivals. Restaurants directly accessible from urban and community roads are selected for further analysis. The study then maps the transportation nodes within a 5-minute walking radius of each destination, categorizing them into four spatial access patterns: pedestrian, cycling, public transit, and vehicular. Empirical field observations are conducted to track actual travel behaviors, including the modes of transit and pedestrian arrival patterns.

A comprehensive pedestrian comfort audit is carried out, focusing on three key factors:

walking characteristics (speed, stride, and flow), traffic conditions (pedestrian-vehicle separation and congestion), and pathway quality (surface evenness, cleanliness, and overall maintenance). Additionally, the study integrates user-generated content from social media platforms *Xiaohongshu*, using sentiment analysis to assess public satisfaction with the walking experience. This dual approach—combining spatial audits with social media sentiment—offers a holistic view of the pedestrian experience at these popular restaurant destinations.

Preliminary findings highlight significant variations in pedestrian comfort across different transport nodes and pathways. Pathways connected to public transit and vehicular routes often face higher congestion, resulting in less comfortable walking conditions, particularly at busy intersections, overpasses, and congested corners. In contrast, destinations with dedicated pedestrian pathways and well-maintained surfaces provide more comfortable walking experiences. Environmental factors such as shading, cleanliness, and the presence of signage are also identified as important contributors to pedestrian comfort.

The findings of this study offer valuable insights for urban mobility and pedestrian-focused design. Recommendations for improving pedestrian comfort include enhanced pedestrian-vehicle separation and traffic spaces with barriers, better maintenance of walking surfaces, and the integration of urban design elements. This research presents an innovative approach to understanding pedestrian mobility by combining real-time navigation data, spatial audits, and sentiment analysis, providing actionable insights for urban planners and policymakers. Furthermore, the methodology offers potential for broader applications on creating pedestrian-friendly environments in dense urban areas like Shanghai, fostering comparative studies on pedestrian comfort and urban mobility globally.

Keywords:

pedestrian comfort ; travel ; destination ;

T_03 MOBILITY (A) / 909

Are Space Syntax and SNAMUTS a match made in heaven? How to combine accessibility tools of different scales and scopes to bridge conceptual gaps in planning practice

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While Transit Oriented Development has been a long-standing paradigm in sustainable urbanism, there remains a common disconnect between the specific approaches of transit infrastructure and service planning on the one hand, and the internal design of local neighbourhoods on the other hand. This disconnect is partly owed to disciplinary barriers and the associated differing professional cultures, leading to an understanding of the initiatives of other disciplines as passive input rather than a call for open-ended, constructive collaboration. Accessibility tools have had some success in overcoming such incompatibilities in planning practice, yet they often originate within the thinking of particular disciplines themselves and subsequently focus on optimising outcomes specific to particular decision making tasks over others.

This contribution conducts an experiment to combine two contrasting accessibility tools representing different (if not unrelated) schools of thought and practice, and test their potential for common, synergistic applications. Space Syntax calculates the to- and

through-movement potentials of street and road network in built environments, thus measuring qualities such as spatial and functional integration of infrastructures at different scales including (but not limited to) the suitability of the public realm for active transport, while remaining largely silent on public transport (particularly off-street) and the distribution of land use activities. Spatial Network Analysis for Multimodal Urban Transport Systems (SNAMUTS) is a tool to analyse and visualise public transport network performance in relation to its land use context, taking a metropolitan or region-wide perspective down to the level of activity clusters, but providing insufficient geographical detail for relevant output at the pedestrian scale.

A combination of Space Syntax and SNAMUTS can help planners and decision makers better understand the interfaces of public transport and street-based accessibility in the context of promoting walkability, reducing car dependence and improving the wider economic benefits of urban investment. Alongside case study examples from Amsterdam, Auckland, Barcelona and Oslo, this paper demonstrates the added insight enabled by the co-application of both tools in terms of comparative accessibility performance between cities and over time, the discernment of spatial dynamics specific to each city, and how transdisciplinary policy making can capitalise on these.

Keywords:

Accessibility tools; public transport; walkability; space syntax; transdisciplinarity

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T.03 MOBILITY (A) / 724

Rail transit integration and land prices: Evidence from inter- and intra-city networks in the Yangtze River Delta, China

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Over the past decades, China's rail transit systems have undergone rapid development, emerging as one of the largest networks globally in terms of operational length for both

inter- and intra-city rail systems. In recent years, China has implemented policies to enhance the integration of different types of rail transit, including high-speed railway (HSR), conventional railway, inter-city railway, suburban railway, and urban rail transit.

Rail transit, as a critical component of transportation infrastructure, enhances accessibility and fosters the development of surrounding areas. While most existing studies focus on the impact of a single type of rail transit developments—such as the opening of a high-speed railway line or the expansion of urban rail transit networks—less attention has been paid to the benefits of integrating different rail transit modes. For examples, Chang and Diao (2021) found that the opening of a new HSR line can increase the housing prices around metro stations connecting to the HSR station, while Liu et al. (2024) showed that connection to metro lines can promote the development of HSR station new towns. However, despite these findings, limited research has explored the causal impacts of rail transit integration on land prices, particularly from a regional perspective.

To fill this research gap, we assess the impact of rail transit integration on land value, using the inter- and intra-city rail networks in the Yangtze River Delta (YRD), China, as a case study. Our analysis focuses on a sample of 112 inter-city rail stations, including HSR stations, conventional railway stations, and inter-city railway stations, which were not connected to intra-city urban rail transit before 2014. We compile data on station characteristics, including station opening time, urban rail transit connection time, and station size, from the Baike (<https://baike.baidu.com/>), and collect land transaction information within a 5-km radius of these stations from 2014 to 2023 from the official website of China's Ministry of Natural Resources (<https://www.landchina.com/>).

Using a difference-in-differences modelling framework, we find that on average, integration with the intra-city urban rail transit has led to a 13.4% increase in land prices within the 5-km buffer of inter-city rail stations with urban rail transit connection relative to those without such connections. The integration effect varies by land use type with the residential land parcels experiencing a larger price appreciation than commercial land parcels after the integration. Spatially, the interaction effect also exhibits heterogeneity, with the highest appreciating rate observed in the 1.5-2.5 km buffer zone around rail stations.

This study offers a new perspective on the capitalization effect of rail transit development by focusing on network integration. The findings can provide useful insights to support the sustainable development of areas around rail transit stations.

Keywords:

Rail transit integration; Land price; Difference-in-differences

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T.03 MOBILITY (A) / 1435

Adapting the 15-Minute City Model for Suburban Areas: Key Performance Indicators (KPIs) and Multimodal Mobility Strategies

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The 15-minute city (15minC) model has emerged as a guiding framework for just and sustainable urban development, prioritizing proximity, connectivity, and diversity to enhance residents' quality of life. While widely applied in dense urban centers, its implementation in suburban areas faces particular challenges due to the lower density, insufficient connectivity, and limited diversity in the land use characteristics of such areas.

To reduce suburban distances, promote accessibility, and achieve the 15minC goals in peripheral regions, this research rethinks distance as a function of time, and proposes an approach that advocates for faster and more cost-effective solutions. The 15minC model often lacks actionable translation, as its guiding principles often remain aspirational and compass-driven rather than process-oriented, measurable, and applicable to planning documents and urban strategies.

Therefore, this study addresses these research gaps by defining a comprehensive set of Key Performance Indicators (KPIs) to explore the potential of digitalization and integrated multimodal mobility strategies as enablers of the 15minC principles in suburban contexts. Five diverse case studies are examined across six countries in Europe: Spain, Portugal, Hungary, Italy, Germany, and Turkey.

The study's methodology relies on key steps that include the identification of successful 15minC strategies, the assessment of available data sources for KPI measurement, and the primary definition of the set of KPIs. This is followed by conducting focus group workshops with local experts as a validation process, and sequentially by the refinement of the KPIs.

Preliminary findings suggest that while the KPIs provide a measurable framework for the 15minC, significant variations across case studies highlight the need for further refinement, additional data collection, and greater contextualisation in the next steps.

Keywords:

15-Minute City; Key Performance Indicators; Multimodal Mobility; Suburban Development

T_03 MOBILITY (A) / 1471

Accessibility to urban services by several transport modes using open data to operationalize the 15-min city concept

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Recent studies have explored the "15-minute city" concept, which aims to provide essential urban services within a short distance of residents. Researchers have developed various methodologies to evaluate accessibility, including network-based frameworks

considering human mobility patterns (Zhang et al., 2022) and GIS-based approaches to measure proximity at the neighborhood level (Chiaradia et al., 2024). These studies have revealed disparities in accessibility between urban and suburban areas, as well as within a city (Akrami et al., 2024). The methodology of this study integrates open data, GIS-based tools and spatial analysis techniques to create accessibility indicators with the objective of evaluate access levels to urban services in five cities (Vienna, Lisbon, Munster, Groningen and Ankara), with the aim of operationalizing the “15-minute city” concept an assess accessibility to urban services. It focuses on measuring walking, cycling, and public transport proximity to four categories of amenities: healthcare, education, recreation and sport facilities, and retail and other services. Data collection and processing were structured around three main components: urban amenities, population data, and transport networks. Primary data sources include open platforms such as OpenStreetMap (OSM) and Google Maps, mapping approximately 27,000 points of interest. Population data from national statistical agencies were used to estimate populations served by amenities at fine spatial units, such as census blocks. Transport and road networks were derived from OSM, focusing on walkable streets, bike lanes, and public transport stops sourced from GTFS specifications. Moreover, the analytical model employs accessibility measures. Distance-based indicators calculate the percentage of the population with access to at least one amenity within 15 minutes. Diversity and density metrics are also included, assessing the variety of services available within specific areas. The analytical framework comprises several steps: defining origin units (residences), selecting target amenities, and applying average travel speeds (e.g., 4-5 km/h for walking and 13 km/h for cycling). Road networks simulate real-world conditions using network distances, ensuring higher accuracy. Amenities were categorized into four main types, enabling direct comparisons across cities. The methodological findings demonstrate that using open data is effective in producing replicable accessibility measures. Integrating detailed population data with urban networks provides granular insights for policy-making. The methodology also allows to identify significant inequalities in cities with low density and peri-urban development. The proposed approach can be applied in future studies to compare accessibility in urban areas and foster solutions for active and inclusive mobility.

Keywords:

Accessibility analysis; urban amenities; spatial analysis; 15-minute city

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T_03 MOBILITY (A) / 991

Performance Analysis of 15-Minute City Zones Through Spatial and Machine Learning Techniques

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With the significant growth of urban populations, cities are expanding rapidly, making urban sprawl a critical global challenge that necessitates urgent attention in policy agendas. This trend leads to various negative outcomes, such as increased energy consumption from a heightened reliance on automobiles, elevated levels of air and water pollution, and severe traffic congestion that hinders mobility. The environmental affects are also significant, as ecological disruption frequently endangers local ecosystems and biodiversity. Therefore, addressing these interconnected issues is vital for fostering sustainable urban development and enhancing the quality of life for urban residents. In light of these challenges, Professor Carlos Moreno introduced the innovative urban planning concept known as the 15-Minute City in 2016, designed to address these concerns. The 15-Minute City aims to foster sustainable neighborhoods, allowing residents to conveniently access essential services and facilities within a 15-minute walk or other sustainable transportation modes from their homes. This idea is rooted in chrono-urbanism, which argues that the quality of urban life declines as the time and financial resources devoted to transportation increase (Moreno et al., 2016; Moreno et al., 2021). The adoption of this concept is projected to lead to improvements in transportation efficiency, a reduction in pollution generated by automobiles, and a significant transformation of urban environments (Olivari et al., 2023). The 15-Minute City concept, has garnered considerable attention from scholars, and its definition and scope have continued to evolve. Cities in Europe and Asia, which generally feature higher population densities, are more likely to adopt the 15-Minute City model. In contrast, urban areas in the United States and Australia often implement the 20-Minute City concept due to their lower suburban densities (Staricco, 2022). Furthermore, there are various time-based urban models, such as the 1-Minute City in Stockholm, the 5-Minute City in Barcelona, and the 30-Minute City in Sydney (Pinto and Akhavan, 2021). These varied concepts highlight a range of methodologies for characterizing urban environments under Moreno's innovative framework. All share a common objective: to create sustainable and accessible urban spaces based on the principle of hyper-proximity, which asserts that basic necessities should be reachable within a specified travel time from an individual's location (Logan et al., 2022).

This study employs spatial analyses within a GIS framework, incorporating machine learning algorithms to evaluate the effectiveness of potential 15-Minute City zones in a specific district. A machine learning algorithm, such as DBSCAN, is used during the neighborhood selection process to accurately represent building density. Eleven categories are identified to generate performance metrics: education, food, daily essentials, public spaces, small industrial areas, cultural facilities, healthcare services, social infrastructure, community services, commerce and economy, and transportation. The significance of these categories is assessed using the entropy weight method. The study area is organized into grids, which will be tested for their shapes and dimensions to accurately represent land cover/ land use. Additionally, a digital elevation model will be utilized to assess walkability. The performance values for each zone will be evaluated based on established categories, using objective weighting methods to ensure a thorough analysis. These concepts will be applied in the Küçükçekmece district of İstanbul, Türkiye due to the engagement of this district in 15-Minute City projects. By employing robust techniques and high-granularity data from reputable open-access sources, this research will help rank potential neighborhoods for a 15-Minute City within the selected district.

Keywords:

15-Minute Cities; Accessibility; GIS; Machine Learning; Performance Metrics

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T_03 MOBILITY (A) / 588

The accessibility of social housing units: An analysis of location and policy in Flanders (Belgium)

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Social housing is a crucial lever for breaking the cycle of structural poverty, although its effectiveness can vary depending on the location. Nevertheless, the accessibility of social housing, essential for reducing mobility-related exclusion, is an underexplored topic and thus far, the relationship between accessibility of social housing and mobility-related social exclusion is poorly understood. Accessibility in this context refers to the extent to which residents have access to various destinations such as jobs, schools, shops and other amenities. A lack of accessibility could partly cancel out the material benefits of social housing for social tenants in the form of decreased social and economic participation.

Using Flanders (Belgium) as a case study, we employ a set of proximity and mobility indicators to analyse the accessibility of the current social housing stock in relation to public transport, amenities and employment. In addition, by means of interviews with key stakeholders, we examine how the accessibility of social housing is currently addressed at the policy level.

The accessibility analysis indicates that social housing tends to be situated in central locations, achieving relatively high accessibility scores. However, this is not the case for all projects. We can distinguish locations with limited accessibility, while we also identify areas that are particularly favourable from an accessibility perspective, but where the number of social housing units is low. The interviews suggest that accessibility does not currently play a central role in Flemish social housing policy and is not systematically considered when housing authorities select new development sites. We conclude that systematic mapping of social housing accessibility can provide new insights on the opportunities and constraints associated with the location of social housing. In conclusion, we recommend a more structural integration of accessibility in social housing policy, taking the needs and wants of social tenants as a starting point.

T_03 MOBILITY (B) / 1546

Sustainable Urban Mobility Plans: a catalyst for transformative urban practices?

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Sustainable Urban Mobility Plans (SUMP) are strategic planning tools designed to satisfy mobility needs in cities and their surroundings for a better quality of life. According to the European Commission, “A SUMP offers a comprehensive, vision-led, flexible and resilient approach by serving as a long-term mobility plan that includes packages of measures addressing short-term objectives and targets the reaching of which can be fast-tracked in response to changing needs.”(EUR-Lex - 32023H0550 -EN). However, the capacity of SUMP and other similar mobility planning instruments in bringing about effective changes towards more sustainable and just mobility practices has been questioned (Maltese, Gatta and Marcucci, 2021; Wågsæther et al., 2022; Hidayati and Tan, 2025). Aiming to shed light on the matter, this paper comparatively examines the multilevel governance framework of sustainable urban mobility planning across Europe, through the analysis of 8 case studies from the JUST STREETS project. We start from the assumption that in order to understand the effectiveness of SUMP it is necessary to consider them as part of a spatial governance and planning system (SGPS), i.e. a complex and multidimensional interaction among the urban legal framework (i.e. structure), the tools for spatial planning (among which the SUMP), the practices, and the discourses built around them (Berisha et al., 2021). This interaction shapes and determines the possibility for SUMP to improve urban mobility towards more sustainable and just mobility practices. By combining literature, policy and document analysis, the paper reviews the multilevel frameworks in which SUMP are developed and implemented, from the European to the local scale. First, the interaction between the urban legal framework (structure) and the SUMP (tools) is inquired. Then, the lens is brought closer to practices, focusing on one local case study from the JUST STREETS project. The mutual interactions between the SUMP, emerging sustainable and just mobility practices, and rising discourses on sustainable and just urban mobility is carried out. Overall, the paper sheds light on the possibility of SUMP as a catalyst for transformative practices (Albrechts, 2017) actually contributing to mobility justice, and the room for improvement in this respect.

Keywords:

SUMP; Multilevel governance; mobility justice; JUST STREETS

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T_03 MOBILITY (B) / 1487**Beyond the Access: Structural Vulnerabilities and Spatial Equity in a Multimodal Public Transport Network****Author:** Jeon Baekchan¹**Co-author:** Kang Myoung-Gu¹¹ *University of Seoul***Corresponding Authors:** sarakael0602@uos.ac.kr, mk@uos.ac.kr

Modern public transport networks (PTNs) are not simply physical conduits for movement; they are vital infrastructures that shape socio-economic opportunities and influence the quality of urban life. Despite this significance, notable service gaps still exist between urban centers and peripheral or rural regions, which in turn intensify socio-economic inequalities, limit access to essential opportunities, and risk disrupting balanced regional development. Conventional studies based on OD (Origin-Destination) data or those that focus solely on physical connectivity cannot fully capture the actual service gaps emerging in multimodal PTNs, where rail, bus, air, and sea transport all operate concurrently. Furthermore, analytical approaches that rely on administrative boundaries often fail to account for diverse geographical and socio-economic contexts, making meaningful comparisons across areas of varying size and jurisdiction problematic.

In response to these shortcomings, this study proposes an “operational capacity-based multiplex network analysis” that models a nationwide multimodal PTN using 500 m × 500 m grid cells in which people actually reside and utilize public transport services, rather than arbitrary administrative units or individual station points. Through the concept of “connectivity strength,” which integrates both service frequency and transport capacity, the approach moves beyond the traditional notion of accessibility to more accurately capture the actual level of service experienced by users. Building on this framework, a nationwide PTN network was constructed in GTFS format (TMAP data) for rail, bus, air, and sea modes, enabling complex intermodal interactions to be assessed from the perspective of actual user transfers. Long-distance (inter-city) and short-distance (intra-city) travel were distinguished in order to calculate key graph-theoretic indicators such as centrality, connectivity, and accessibility, revealing structural vulnerabilities in different regions and transport modes. Socio-economic data, including population, employment, and POIs, were then integrated to identify service imbalances that remain invisible under a purely physical connectivity lens. Finally, a comparison between a “Level 1” physical network and a “Level 2” operational capacity-based network revealed low-frequency or low-capacity areas struggling with significant service shortfalls, leading to the derivation of a composite vulnerability index via TOPSIS and the identification of priority areas for improvements and investments.

The results showed that many areas perceived as physically well-connected suffered severe service vulnerabilities due to limited capacities and low service frequencies. This finding suggests that OD-based or simple connectivity-centric PTN planning alone may not effectively safeguard mobility equity or balanced development. By contrast, the proposed “service-oriented” multiplex approach highlights structural gaps rooted in heavy reliance on specific rural segments or transfer hubs, indicating potential routes for innovative policymaking in multimodal public transport. Moreover, this data-driven framework furnishes practical insights into promoting balanced regional growth and improving mobility equity, while offering valuable guidance for strategic enhancements of public transport services. It also holds promise for broader application in user-centric, service-focused PTN planning and assessment models in the future.

Keywords:

Multimodal Public Transport; Multiplex Network; Urban data science; Big Data; Spatial accessibility; Vulnerability

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T_03 MOBILITY (B) / 1261

Do similar social groups have similar mobility in a city? Social areas and mobility in Shenzhen, China

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Social area analysis has been applied to analyze how urban space is spatially arranged. Related studies have divided urban residents into different groups whose socioeconomic status are similar. However, few studies have attempted to explore the mobility of these social groups, especially for developing countries where census data with travel information are not readily available. This study explores whether people in the same social area have similar work mobility and whether location matters from an aggregated neighborhood perspective. A case study is conducted in Shenzhen, China with fine-grained census and mobile phone data. The neighborhood committee based census and cell tower based mobile phone data are integrated into 500 m grid for analysis. Results show that different social areas have significantly different work mobility, and the within-group heterogeneity is also prominent. Three location factors are examined and it is found that there exist variations in the influence of spatial factors on work mobility for different social areas. Findings of this study will supplement current knowledge about social areas, location and mobility in urban China at the mesoscale. In addition, the methodology provides a feasible framework of integrating city-scale socioeconomic information and mobility data from different sources for future urban studies.

Keywords:

Social areas; Mobility; Mobile phone data; Activity space

T_03 MOBILITY (B) / 1042

Travel Characteristic of Elderly People in Towns of Shanghai Metropolitan Area: An Urban-Rural Mobility Network Analysis

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With the worsening of low fertility and ageing in China, the proportion of elderly people is gradually increasing, and the government is placing greater emphasis on addressing the social needs of the elderly. In the Shanghai metropolitan area, Shanghai is the first city in China to experience population ageing, with the highest degree. Some cities, such as Nantong, have also entered a severely ageing society. The travel needs of the elderly are increasing, so building an age-friendly and inclusive society has become a key focus in urban planning.

Current research on the travel behaviour characteristics of elderly people mostly concentrated in cities, with less attention paid to rural elderly people. In towns that serve as a link between urban and rural areas, due to the frequent out-migration of young labour forces, there is a large number of elderly people left behind. The elderly in these areas face more complex geographical, social and transportation conditions when travelling. Compared with cities that are rich in various resources, the elderly in towns deserve more attention, which is also an aspect that should be taken into account in building an inclusive society. With the development of mobile signalling data, it has become possible to analyze the travel characteristics of rural elderly people, which also provides a basis for the government to allocate urban and rural resources and build elderly-friendly towns rationally.

This study employed network analysis methods, integrating mobile signalling and traffic travel survey data. By constructing urban-rural and rural-rural population mobility networks, it deeply explored the spatial distribution characteristics of the travel frequency, distance, duration, and destinations of the elderly aged 65 and above in rural areas during their daily lives. It also investigated the relationship between these features and towns' economic and social development and summarised the main influencing factors. The research found that the elderly's travel mainly focuses on short-distance and regular daily life needs, such as medical visits, shopping, and visiting family and friends. In towns, elderly people's mobility is more limited, with a small travel radius and low frequency. However, for some elderly people with specific medical needs or whose children live in urban areas, the frequency of cross-regional travel has increased. In terms of travel modes, rural elderly people generally rely on public transportation, with less use of private cars, and this is closely related to their age and health conditions. Regarding influencing factors, this study analyzed the impact of economic conditions, transportation facilities, and social support on the travel of the elderly. In towns with higher economic levels, the travel frequency and range of the elderly are relatively larger. However, elderly people in less developed towns face problems such as inconvenient transportation and limited medical resources, which makes their travel more dependent on social support and family care. The differences in travel patterns among different towns also reflect the quality of life gap among the elderly in different regions and suggest that in future urban planning, more attention should be paid to the travel needs of the elderly in towns and the areas at the urban-rural interface.

This study provides a clearer understanding of the spatial mobility and cross-regional interaction of elderly people's travel, revealing the special needs and behavioural patterns of the elderly group in towns. The travel characteristics of elderly people in towns are influenced by multiple factors and show complex spatial distribution and social network effects. In the future, the government should carry out differentiated planning according to the characteristics of the elderly groups in different regions to build an inclusive society and cope with the challenges of ageing.

Keywords:

Elderly travel; Town; Urban-rural population mobility; Shanghai Metropolitan Area

T_03 MOBILITY (B) / 1293

The Suburban Transformation: Rethinking Post-Pandemic Urban Futures

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The COVID-19 pandemic has been a critical juncture for the fields of urban planning, urban design, and transportation studies. There has been an increase in active modes of travel such as walking and cycling, especially amongst people who previously relied on private vehicles and public transportation (Rice, 2020). A renewed dialogue has begun about what post-pandemic cities should look like. The ongoing COVID-19 pandemic has disrupted all aspects of human life and affected a variety of disciplines, including urban planning and design. The pandemic is touted as an opportunity to rethink neighborhood design and has raised challenging questions for planners and policymakers about the issues of density and mobility (de Rosa & Mannarini, 2021). There is an urgent need to design cities that accommodate pandemic-control measures while attending to people's daily needs, including access to outdoor spaces for physical, social, and mental well-being. These requirements for post-pandemic cities have positioned suburbs as a more attractive and viable alternative than compact urban areas. However, the conventional suburban model of low-density, automobile-centric development with fragmented streets cannot maintain high levels of accessibility within neighborhoods. This study offers an alternative, evidence-based suburban design model for post-pandemic cities. Quantitative examinations of case studies in Dubai and Abu Dhabi, along with illustrations of potential redesign options, show how suburbs can be made more accessible to pedestrian traffic.

The study provides a new approach to suburban studies that combines morphological mapping, network analysis, and quantified renewed scenarios for future suburban design. Morphological mapping and network analysis diagnose the accessibility levels in a variety of suburban samples. The redesigned or renewed suburban scenarios are then developed based on the lessons and quantified outcomes learned from the highly accessible suburban samples. This investigation is relevant for urban planning and design scholarship because it contributes to the evolving literature that depicts suburbs as a potent ground for innovation, rather than demonizing them. This approach or process of inquiry can be applied to urban areas worldwide to study the performance of built forms with the aim of retrofitting existing fabrics or redesigning new ones.

Keywords:

Suburbs; Urban Form; Accessibility; Post-Pandemic Cities; Future Cities

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T_03 MOBILITY (B) / 1185

Modelling Tailpipe Emissions: Assessing vulnerability of emissions with a planning perspective

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This study explores the exposure to vehicular emissions in relation to social vulnerability. It takes a disaggregate, activity-based modelling approach to estimate tailpipe emissions at the road network level. The vulnerability index was derived based on socioeconomic information from census tabulations. It is necessary to investigate the exposure of harmful emissions on vulnerable populations as they are often susceptible to chronic health impacts, creating environmental justice issues (Molchan et al., 2024). Emissions are not equally dispersed and may impact people who may not be emitting them. Therefore, this study estimates tailpipe emissions and a vulnerability index to develop an emissions vulnerability assessment for Halifax Regional Municipality (HRM) in Nova Scotia, Canada. The activity-based travel model was developed utilizing the 2022 Halifax Travel Activity Survey. The model consists of four segments: 1) Population synthesis, 2) Activity generation and scheduling, 3) Vehicle allocation and mobility assignment, and 4) Traffic and emission estimation. Greenhouse gas emission (GHG) is used as a proxy to understand exposure to vehicular emissions. The vulnerability index begins with a principal component analysis (PCA) to identify relative importance of socioeconomic attributes of individuals at the zonal level. In total, twelve attributes were considered in the development of a social vulnerability index (SoVI), focusing on four thematic areas: 1) Diversity and housing suitability, 2) Socioeconomic and mobility patterns, 3) Demography, and 4) Economic challenges. The resulting SoVI of different zones in HRM were overlayed with the vehicular emissions by utilising GIS analysis. It assesses emission vulnerabilities by classifying both vulnerability and emissions based on percentiles.

This paper identifies vulnerable areas to tailpipe emissions. The result of the SoVI shows that many of the lower income zones experience higher levels of emissions, particularly in the downtown areas. For instance, a Northern portion of Halifax exhibited the high score of 2.1. Interestingly, Halifax South end, which is adjacent to Halifax's North end, also showed a high score of 2.0, despite being considered a high-income area. In general, tailpipe emissions are highest in urban areas, followed by suburban and rural zones. Similarly, the variability of vulnerability index is highest in urban areas, while decreasing in suburban and rural zones. This correlation underscores the greater significance of vulnerability to tailpipe emissions in the urban zones within the cities of Halifax and Dartmouth.

This provides valuable insights to identify vulnerable populations that are exposed to tailpipe emissions. This study offers important policy guidelines including reduction of vehicular activity in the downtown core by diversifying public transportation. The study also reveals environmental justice issues in Canadian cities that require further climate action to reduce the impact of over-reliance on private vehicles. Such transport policies will help Canadian governments and organizations to reduce their tailpipe emission levels for vulnerable populations and aim to achieve net-zero by 2050.

Keywords:

activity-based model; tailpipe emissions; social vulnerability index; transportation policy

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T_03 MOBILITY (B) / 1242**Navigating Public Perceptions of Urban Mobility Transformations**

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Cities worldwide are embracing ambitious mobility transformation policies aimed at reshaping built environments to prioritize walkability, cyclability, and overall livability. These initiatives are part of a broader urban planning paradigm shift that seeks to reclaim space from cars and return it to pedestrians and cyclists. Policies such as 15-minute cities (Papadopoulos et al., 2023), Low-Traffic Neighborhoods (Aldred et al., 2021), and woonerfs (Cekrezi, 2022) exemplify this trend. By designing environments that reduce travel distances and support active transportation, these policies aim to address environmental challenges, enhance health outcomes, and foster social equity (Proffitt et al., 2019).

Despite their potential to create healthier, more equitable urban spaces, the success of these policies depends heavily on public acceptability. While their environmental and social benefits are well-documented—including reductions in energy consumption and emissions and enhanced transportation equity and justice—their acceptability remains underexplored. Nevertheless, understanding public perceptions is crucial, as resistance to these policies can lead to organized opposition, jeopardizing their implementation and sustainability (Marquet et al., 2024). Academic literature has so far found that the acceptability of these policies is influenced by the projection of future changes that will endure in the mobility habits of individuals. Rahman & Sciara, 2022 found that those policies that lead to forced and unwanted mobility changes to individuals can trigger resistance, and the opposite holds true -policies that align with citizen's desired behaviors garner more support-

This study focuses on the acceptability of Barcelona's key mobility transformation policies: Superblocks, School Streets, Bicycle Lanes, and Pedestrianizations. By examining multiple policies within a single urban context, this research provides a nuanced understanding of the dynamics underlying public acceptability and opposition. This approach is critical, as the literature has, until today, focused on analyzing the acceptability of single-issue policies, such as congestion charges, low-emission zones, or parking management.

The research employs a comprehensive survey targeting 2,000 Barcelona residents to investigate demographic, ideological, and experiential factors influencing public attitudes toward these policies. The survey examines variables such as perceived efficacy, distributional and procedural fairness, political trust, and projected impacts on personal mobility habits. Respondents' willingness to support policy extensions, their trust in local governance, and their views on the equity of policy outcomes are also analyzed.

This study's findings will help us test for the first time whether certain sociodemographic and ideological characteristics influence public support or resistance to urban mobility transformation policies. Additionally, we will be able to assess whether individual values and norms play any role in shaping public perceptions of these policies. By addressing these factors, the study seeks to help policymakers avoid costly trial-and-error approaches, ensuring the alignment of mobility transformation policies with public

needs and expectations.

Ultimately, this research highlights the importance of integrating public perceptions into the design and implementation of mobility policies, fostering inclusive and sustainable urban environments. It emphasizes the role of urban mobility transformations in addressing climate challenges, promoting equity, and ensuring resilience in urban systems. By advancing our understanding of public attitudes toward transformative urban planning, this work supports the development of just, safe, and accessible mobility systems critical to sustainable urban futures.

Keywords:

Urban transformations; Sustainable mobility; Public acceptability; Barcelona; Superblocks

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T_03 MOBILITY (B) / 1887

Sustainable mobility and Consolidated City. Urban Regeneration strategies for the Metropolitan City of Rome

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The critical role of cities in addressing the global climate crisis is increasingly acknowledged. The European Union (EU), one of the most urbanized regions globally, has placed urban issues at the core of its political agenda, in line with the UN Sustainable Development Goals (SDGs), as evidenced by numerous measures aimed at fostering sustainable development, such as the Leipzig charter (2007), The Urbana Agenda for the EU (2016) or the European Green Deal (2020). These international initiatives consistently identify mobility as a central issue for sustainable development, emphasizing both improved accessibility and reduced environmental impact. Confirming this awareness, the EU introduced a new strategic plan in 2009 at an inter-municipal scale, the Sustainable Urban Mobility Plan (SUMP) (COM 2009/490). This planning device, designed for a medium- to long-term implementation, aims to achieve social-economic and environmental sustainability objectives, highlighting the role of mobility in the context of the existing city as a tool to counter marginality.

This research examines urban regeneration by focusing on the strategic role of sustainable mobility within the consolidated city, defined as the urbanized territory shaped by 20th-century planning, characterized by a compact urban structure and limited public spaces and services (Garano, 2001). The significance of this portion of urbanized territory is underlined by its size, and the enormous building and housing density that characterizes it. In Italy, these strategic areas emerged during the rapid post-war growth period until the early 1980s, and now face challenges due to their original car-dependent development model. This issue is further exacerbated by the unique “genetic anomaly” of Italian cities, where industrial growth was not matched by the development of extensive rail networks (Campos Venuti, 2001).

The aim of this paper is to identify theoretical, methodological, and operational references for an innovative planning system which, through the implementation of public transport networks, can trigger regeneration processes within the consolidated city. A case study of Rome explores the interplay between the pilot project “15 Projects for the 15-Minute City,” inspired by Carlos Moreno’s model that prioritizes service accessibility and proximity (Moreno, 2024), and the mobility forecasts of the new metropolitan SUMP (approved December 2024). The latter renews and extends the ambitions of the current city’s regulatory planning (NPRG, 2008), seeking to enhance mass public transport offer through a ‘rail therapy’ identified as ‘the condition’ for implementing the city’s development strategies, based on a polycentric model (Marcelloni, 2003; Ricci, 2009).

The methodology is structured in three phases:

1. Contextualization: A diachronic analysis of the formation processes of the consolidated city in relation to mobility infrastructure development, alongside a review of the regulatory framework.
2. Case Study Analysis: An examination of Rome’s mobility plans and urban regeneration projects to inductively identify innovative strategies, tools, and guidelines for transforming the consolidated city, including synergies with other planning devices and resource transposition strategies.
3. Systematization: The development of a flexible framework that organizes the identified strategies into coherent modalities for governing sustainable mobility interventions.

The proposed framework aims to integrate planning instruments at different scales, within a strategic/structural planning system that envisions potential implementations with coherence-based guidelines and structural invariants of planning at different scales serving as a coherence framework for transformations in the existing city, capable of enabling access to different funding channels (Galuzzi and Vitillo, 2018).

Ultimately, the research underscores the central role of sustainable mobility in regenerating the consolidated city, arguing that mobility planning must form the backbone, within the broader conception of the Public City as a reference matrix for urban sustainability, of transformative processes aimed at rebalancing spatial inequalities (Oliva and Ricci, 2017).

Keywords:

Consolidated city; Sustainable mobility; Urban Regeneration; Urban Planning; 15-minute city

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T.03 MOBILITY (B) / 1318**Planning amidst Planetary Crisis: Rethinking Theory and Practice through Adaptive Transformations in Public Transit****Authors:** Yanyun MAO¹; Jian ZHUO²¹ *Urban Mobility Institute, Tongji University*² *Urban Mobility Institute & College of Architecture and Urban Planning, Tongji University***Corresponding Authors:** jian.zhuo@tongji.edu.cn, yanyunmao@tongji.edu.cn

The global crises of climate change, resource scarcity, and public health have profoundly reshaped the operational logic of urban spaces and the spatiotemporal patterns of transportation networks. Urban mobility systems must not only adhere to sustainability goals but also enhance resilience to uncertainty. In China, severe mismatches in the supply and demand of public transportation persist, as conventional planning methods fail to address dynamic demands and complex socio-spatial variables. Meanwhile, the rapid rise of diversified mobility options—such as shared mobility, electric vehicles, and autonomous technologies—has redefined the role of public transit within urban systems. This study reexamines the foundational role of public transportation within an adaptive planning framework, seeking to provide scientific insights to address supply-demand imbalances through theoretical innovation and methodological advancements.

This research addresses three core questions: What are the theoretical shifts required for adaptive planning under global crises? How can the key attributes of adaptive planning be characterized? What role does public transportation play in this framework? By conducting a systematic literature review, the study synthesizes the core concepts and developmental trajectories of adaptive planning, offering a context-specific theoretical definition that bridges Chinese and European planning perspectives.

Focusing on public buses as a case study, the research examines its evolving foundational role amid the proliferation of diversified mobility modes and investigates the structural causes of supply-demand mismatches. It integrates the dynamics of collaboration and competition among multiple transport modes into the planning process, expanding the boundaries of traditional transit planning paradigms. A representative Chinese city is selected for empirical analysis, employing a combination of quantitative models and qualitative methods to assess supply-demand matching and its influencing factors. The study develops a multi-dimensional evaluation system—including metrics for accessibility, equity, and resilience—to systematically assess the operational performance of public buses systems. The results inform the construction of an adaptive planning framework aimed at achieving dynamic supply-demand alignment and offering actionable decision-making support.

The findings reveal that traditional efficiency-driven planning paradigms are insufficient to address increasingly complex urban challenges under planetary crises. Public transportation remains irreplaceable as the backbone of urban mobility, yet it requires collaborative innovations in planning and operation to align with other mobility modes. Adaptive planning must move beyond static optimization, emphasizing dynamic responsiveness and multi-dimensional collaboration to bolster urban resilience against uncertainty. This study proposes a “resilience-oriented adaptive transit planning framework” centered on: (1) multi-level governance mechanisms to foster inter-modal coordination; (2) data-driven dynamic response systems to enhance service flexibility; and (3) equity-focused evaluation systems to ensure the fair distribution of transportation resources.

By embedding the principles of dynamic adjustment into supply-demand matching, this framework enhances system efficiency, user satisfaction, and resilience against both immediate disruptions and long-term trends. Theoretical advancements and empirical findings contribute to the global academic discourse on adaptive planning, offering a unified framework that integrates technological innovation, institutional reforms, and

social equity. These insights provide practical solutions for the sustainable development of ground public transit and the systemic optimization of urban mobility.

Adaptive planning plays a significant role in addressing complex urban issues and has become an important direction leading the theoretical transformation of global urban and transportation planning. Future research should explore the transformative impact in the context of digital innovation, climate change, and urban disparities between the Global North and South, extending its relevance beyond transportation to broader urban systems.

Keywords:

Adaptive Planning; Mobility Crisis; Public Transportation; Buses; Evaluation System; Sustainable Development

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T.03 MOBILITY (B) / 1279

Reimagining the Safe System: A Case for Equity in Road Safety

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Road violence is a global issue, with its devastating impacts felt at the individual, community and national levels. Around the world, road crashes claim over 1.3 million lives annually, causing injuries to millions more with widespread social disruption and massive public health costs. There is a marked inequity in the prevalence of road violence across modes, cohorts and places, disproportionately affecting low and middle income countries as well as children and people walking or riding, especially among old people, a demographic increasing in many parts of the world where populations are stabilising or falling.

Recognising the massive impact of road violence, policymakers around the globe have moved towards the Safe System approach, a holistic strategy aimed at designing transport systems to anticipate and accommodate human error, ensuring that car crashes do not result in severe injury or death. This approach challenges more traditional road safety strategies where some degree of death and injury is seen as an acceptable price to pay for the benefit of car-based mobility. Importantly, the Safe System approach places the emphasis on making the transport system safe for people using it, rather than on how people can use the system more safely.

While the Safe System approach represents a much-needed paradigm shift, it continues to grapple with a number of inherent contradictions, weaknesses and limitations. The varying success rates of Safe System approaches across regions and over time highlight

how these challenges manifest differently depending on local contexts and implementation strategies. For instance, while some countries have achieved significant reductions in road trauma over the past two decades, others, like Australia, are confronting growing challenges. In 2023, Australia experienced its deadliest year on the roads since 2016, with First Nations people, young and older individuals and pedestrians disproportionately affected. Despite this, the equity dimension of road safety including within the Safe System approach remains underexplored.

The approach is further hindered by its limited attention to feedback loops and context misfits, which often result in an inability to address the deeply entrenched social, cultural, economic, political and environmental forces that perpetuate the root cause of road trauma: car dependence. These ingrained forces create a self-reinforcing feedback loop that undermines efforts to effectively reduce road trauma. For example, the framing of Safe System approaches often narrows its focus to reducing harm within a car-dependent framework, implicitly endorsing the principle that ‘any amount of vehicle driving is acceptable as long as no one is killed or severely injured.’ This reveals a lack of genuine systems thinking, despite the use of the word “system” in its title. As a result, the systemic issues that drive car dependence remain unchallenged, undermining the potential for transformative change, including the achievement of a safe, healthy, sustainable and equitable transport system.

By providing a comparative examination of the language and methodologies used within the domains of shared responsibility, safer users and safer vehicles, the paper identifies key differences and similarities within the Safe System approach where it has been implemented and explores their implications for its success. Central to this discussion is the consideration of equity, which is vital for ensuring that road safety interventions are attentive to the existing inequalities and their underlying causes across different modes, cohorts and places.

Through a proposal of actionable strategies to improve the Safe System approach, this paper argues that embedding equity into both its methodologies and language is crucial for improving its effectiveness, not only in achieving Vision Zero but also in creating healthier, more equitable and environmentally sustainable transport systems and communities.

Keywords:

road safety; road violence; equity; safe system; vision zero

T_03 MOBILITY (B) / 1360

Study on Mobility Habit Transformations - Introducing a New Light Rail in the Helsinki Metropolitan Area

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For the last decades, the planning of our cities has been heavily centered around automobility. This focus has fostered a widespread reliance on private cars, resulting in numerous adverse consequences at both local and global scales. These include compromised safety, lowered physical and mental health, environmental damage, multi-leveled injustice, and the excessive use of space, time, and resources (e.g., Nieuwenhuijsen & Khreis, 2016; Miner et al., 2024).

Addressing these challenges requires a fundamental reshaping of urban systems to prioritize and enable public and active transportation (Gössling, 2016; Nieuwenhuijsen & Khreis, 2016; Miner et al., 2024). Hence, among other actions cities worldwide are investing in public transportation, with Light Rail Transit (LRT) often viewed as a promising solution for enhancing transit networks and serving as the backbone of sustainable urban mobility systems.

In 2023, a new LRT system started operating in the Helsinki metropolitan area, Finland. The new LRT enhances the transverse public transport connections and increases the reliability, capacity, and comfort of public transport, among other benefits.

Our study aims to assess the impacts of the new LRT in the Helsinki metropolitan case. We are particularly interested in the interplay of lifestyles and mobility behavior to understand how such public transport interventions impact different population groups. We also wish to see if the new LRT can decrease the car usage of the residents living in the vicinity of the new LRT.

To achieve these objectives, we employed randomly sampled Public Participation Geographic Information System (PPGIS) surveys conducted before and one year after the LRT started running. Through the survey, we collected data on participants' regular destinations, frequency of visits, travel modes, and preferences regarding mobility and neighborhood values, aiming to reveal the underlying lifestyles and mobility habits. We used comparative analysis to assess the changes in mobility over one year, and k-means clustering to identify three different resident profiles.

As a result, we found that the share of trips made by public transport increased in our study area following the LRT implementation. However, at the same time, car usage also increased in the area. Furthermore, we found one group that was especially prone to change their mobility behavior following the LRT intervention. This group, representing 43% of the participants, increased their public transport usage the most while reducing their car usage. Conversely, residents with car-centric lifestyles were the least likely to change their behavior in a more sustainable direction.

Our results suggest that more ambitious actions are needed for a large-scale sustainability transformation. These could include simultaneous push and pull methods to realize the synergetic benefits of transport interventions.

Our study provides an in-depth understanding of the effectiveness of LRT in altering urban mobility patterns and promoting sustainable transportation. By analyzing shifts in residents' mobility behaviors, the findings will offer insights for urban planners and policymakers to design more sustainable and efficient mobility systems.

Keywords:

Urban Mobility; Light Rail Transit (LRT); Mobility Behavior; Urban Lifestyles

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T.03 MOBILITY (B) / 50

Can pedestrianization trigger gentrification? Insights from

Barcelona's transformations

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In recent years, cities around the world have launched ambitious urban transformation programs aimed at enhancing pedestrian mobility and improving public spaces. These initiatives often reflect a broader movement towards creating more livable and sustainable urban environments. Barcelona, with her internationally acclaimed Superblock flagship program, is a great example of that. Pedestrian-friendly designs are celebrated for their potential to reduce air pollution, encourage healthier lifestyles, and foster community interactions. However, these projects are not without criticism, and one significant area of concern involves their social consequences. A recurring critique of these policies is their potential to drive up land prices, making certain neighborhoods more attractive to wealthier individuals and displacing vulnerable populations in a process known as gentrification.

While extensive research has examined the phenomenon of "green gentrification"; that is, the gentrification processes triggered by urban greening projects like parks and greenways, relatively little attention has been given to other forms of urban transformation. The social justice implications of pedestrianization schemes (urban interventions that convert vehicular streets into pedestrian-only zones) remain underexplored. Existing studies on the spatial determinants of housing prices suggest that walkability is linked to higher land values, which can inadvertently contribute to exclusionary processes. Yet, it is unclear whether smaller-scale interventions like pedestrianization alone are sufficient to drive significant demographic changes in urban areas.

This study seeks to address this gap by analyzing the sociodemographic impacts of pedestrianization in Barcelona. Specifically, it examines whether such projects have triggered gentrification-like changes in the social composition of affected neighborhoods. Using a self-elaborated database documenting pedestrianization projects in the city from 2012 to 2020, combined with fine-grained annual sociodemographic data, the research employs a Difference-in-Differences (DiD) analysis. This method compares changes in demographic indicators in pedestrianized areas with non-pedestrianized areas, isolating the effects of pedestrianization from broader urban trends.

The findings reveal significant trends that, though small now, are growing over time. Pedestrianized areas have attracted a disproportionate number of European and North American newcomers compared to what would be expected in the absence of intervention. They have also received a higher-than-expected influx of highly educated residents, and a reduction of the proportion of those with lower level of studies. Additionally, these areas have experienced an increase in residents aged 31–64, a demographic often associated with higher income levels. These shifts suggest that pedestrianization projects may contribute to changes in neighborhood composition, attracting new residents that are wealthier, more educated and come from more affluent countries.

The implications of these findings are significant for urban policymakers. Pedestrianization projects, while beneficial in driving modal shifts and improving quality of life, may inadvertently undermine goals of social equity and inclusion. If such initiatives disproportionately attract wealthier groups, they could indirectly raise housing prices and lead to the displacement of previous residents, exacerbating urban inequalities and raising an issue of urban justice. Policymakers need to be aware of these dynamics when implementing pedestrianization schemes and consider measures to mitigate potential adverse effects.

This research also highlights the relevance of small-scale urban transformations. While some bigger Superblock interventions were considered in the study, most of the interventions were smaller interventions spread across the city, leading to consider the significance of small-scale projects in driving broader sociodemographic shifts.

Designing policies that effectively address climate change pressures while guaranteeing the inclusion of vulnerable populations in urban life is a key challenge of contemporary urban planning. These results should not lead us to stop further pedestrianization schemes, but rather to consider which other policies need to be implemented along with them to ensure social justice.

Keywords:

pedestrianization; urban transformation; gentrification; sociodemographic change

T_03 MOBILITY (B) / 36

Shaping the Future of Mobility Culture: An Expert-Driven Policy Roadmap

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Daily mobility patterns vary across regions but share key similarities, shaped by spatial, social, economic, and cultural factors. Mobility can be seen as a “culture” in itself, and in Europe, this culture is currently undergoing significant evolution. The Horizon 2020 project REBALANCE, involving six participants from six European countries until 2022, sought to explore the values and culture of future mobility. The project’s goal was to encourage a paradigm shift in mobility policy, urging greater attention to social values in decision-making and alignment with the Sustainable Development Goals (SDGs).

REBALANCE initiated discussions about the foundations of current mobility policies. By reflecting on existing frameworks, it brought together a broad network of experts and stakeholders to explore new mobility cultures and policies. The objective was to converge on a sustainable, shared vision and create a roadmap for a new mobility paradigm. What set REBALANCE apart was its focus on engaging high-level interdisciplinary thinkers who have traditionally not been involved in transport research. Philosophers, sociologists, psychologists, geographers, and legal experts played a crucial role in challenging the assumptions underlying conventional mobility paradigms. In addition to this interdisciplinary engagement, the project involved a group of visionaries and 14 transport experts. A key outcome was the creation of a Manifesto for a New Mobility Culture.

The project aimed to significantly influence European public policies on mobility and transport. It examined the evolution of mobility culture, identifying emerging trends through expert insights. These trends were translated into future scenarios, distinguishing between desirable and probable trajectories. Through surveys across European countries and extensive input from experts and thinkers, REBALANCE articulated a vision for the future of mobility. This vision was formalized in a manifesto addressed to European policymakers, calling for integration into future public policies. Supported by a roadmap containing concrete actions, timelines, and policy guidance, the manifesto offered a plan to break free from outdated paradigms. Additionally, it underscored the importance of communication in shaping mobility culture, examined the public interest in mobility issues, and proposed new methods for evaluating mobility projects to better address the necessary changes.

This presentation will focus on the roadmap and guide for future European mobility policies. It will detail the methodology employed to translate the REBALANCE vision into the manifesto and, ultimately, into the roadmap and policy guide. An innovative workshop, inspired by the Delphi method, was conducted to bring together experts, including scientists, associations, and industry representatives, to achieve a high level of consensus at every stage of the process.

Keywords:

mobility culture; paradigm shift; mobility manifesto; future mobility scenarios; Roadmap

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T_03 MOBILITY (B) / 1634

Identification of Green Commuting Opportunities in Peri-Urban Town Clusters in Metropolitan Areas of Shanghai

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(1)Background: In the context of global entry into the post-growth era, climate change and resource constraints pose unprecedented challenges, necessitating a reevaluation of conventional growth-driven development. The rapid industrial suburbanization in metropolises has led to the expansion of residential, employment and public service functions, with Shanghai being a typical case. Especially, the peri-urban zones surrounding central district are areas where spatial development conflicts concentrate, both generating and attracting a large amount of commuting traffic. However, due to their location at the end of public transport network, there is a shortage of public transit supply, causing a mismatch in commuting demand and supply. This prompts more suburban residents to commute by private cars, against the green transformation of transportation and sustainable development. In Shanghai Master Plan (2017-2035), the "Town Clusters" mode is introduced to organize suburban space, streamline industrial layout and

reduce long-distance commuting, and is anticipated to offer novel solutions for optimizing commuting patterns in peri-urban areas.

(2)Content: This research endeavors to assess the opportunities of existing green commuting options in peri-urban town clusters, including bus and rail transit. We focus on five typical town clusters located in Shanghai peri-urban areas. Our study integrates job-housing relationships derived from mobile phone signaling data, along with multi-source data on road network configuration and public transportation network. By leveraging the route-planning capabilities of online map platforms, the average commuting time cost of different transportation modes are computed. Employing key metrics such as the Public Transit Commuting Feasibility (PTCF), Commuting Time Competence (CTC) and Commuting Mode Competence (CMC), the study evaluates the distribution patterns of green commuting opportunities levels within each town cluster under diverse time thresholds and spatial extents, thereby identifying areas with sub-optimal green commuting opportunities. By means of the Geographically Weighted Regression (GWR) approach from perspectives of commuting demand and supply, the study dissects the core determinants of green commuting opportunities in peri-urban town clusters and attempts to formulate optimization strategies accordingly.

(3)Findings: Results of green commuting opportunities identification: Temporally, on weekday morning peaks, the opportunities of green commuting is typically lower compared to evening peaks. Geographically, areas in close proximity to rail transit stations exhibit markedly higher green commuting opportunities. The central zones of town clusters, benefiting from dense public transportation routes, tend to offer higher green commuting opportunities than peripheral areas. Residential communities within 3 kilometers of large industrial parks also display relatively high green commuting opportunities. At different hierarchical levels of town clusters, those with higher levels of development and greater industrial and population agglomeration generally demonstrate better green commuting opportunities. Within town clusters, central towns with nodal characteristics enjoy higher green commuting opportunities than ordinary towns. Crucial influencing factors: In terms of commuting demand, commuting distance exerts a profound impact on green commuting opportunities. Our survey in the “Nanxiang-Jiangqiao Town Cluster” reveals that when the commuting distance exceeds 10 kilometers, the proportion of commuters choosing green options drops significantly. Additionally, the uneven spatial distribution of workplaces and residences also counts. Regarding commuting supply, the density of public transportation stations and the connectivity of routes are crucial factors. Areas with high-density stations and well-connected routes exhibit stronger green commuting opportunities. Optimization strategies: Simulation results indicate that augmenting public transportation routes and frequencies, optimizing bus route layouts, and enhancing the connectivity of public transportation stations can effectively boost the overall green commuting opportunities within peri-urban town clusters.

(4)Summary: This study broadens the scope of research on green commuting and explores the evaluation methodology for green commuting opportunities within the peri-urban town cluster model, furnishes policy recommendations for facilitating the green transformation of commuting modes in metropolitan suburban areas.

Keywords:

peri-urban areas; town cluster; green commuting opportunities; Shanghai

T_03 MOBILITY (B) / 1716

Local accessibility and mobility behaviour in large-scale housing estates: comparative results from a multi-country residents' survey

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Large-scale housing estates (LHEs) present a unique setting for the sustainable mobility transition we are trying to bring about. Largely built between the 1960s and 1990s, they were typically developed on the outskirts of cities at inexpensive locations following specific spatial configurations and urban design principles, such as the provision of open green space between apartment blocks and a functional large-scale transport infrastructure focused on cars and public transit, supplemented by car-free inner areas. Furthermore, they also implemented the idea that the neighbourhood should provide everyday services, like schools, neighbourhood centres, healthcare and essential shopping. Although the design principles and ideas of LHEs were similar across Europe, they have followed different development trajectories since their construction. For example, Western European countries have developed a negative critique of LHEs, while in Eastern European countries, living in a LHE is more conventional. In several European countries, growing socioeconomic disparities in urban society become increasingly visible in LHEs, following immigration, segregation, and marginalization processes.

Today, LHEs are home to more than 40 million people in Europe alone and present a complex socio-spatial setting in which the quality and provision of urban functions and amenities, active travel use, and liveability are generally under pressure. Considering the renewed interest in proximity-based planning approaches, symbolized by the 15-minute city concept, these areas present specific challenges and opportunities. Spatially, there is sufficient population density for providing a basic level of services and amenities, but over the years, and to different degrees, they have left these areas. Given the often-peripheral urban locations and spacious layout of these neighbourhoods, many residents have become dependent on the car, as the availability of public transport has come under strain and walking and cycling infrastructure has often been neglected. Socially, many LHEs have become multicultural environments with increasing levels of deprivation, ageing and loneliness. Altogether, the ingrained spatial features and the social practices of a vulnerable local population complicate a just, accepted, and sustainable mobility transition.

Despite this diagnosis, urban planning studies have not yet formed a comprehensive understanding of mobility options and practices in LHEs, and of the interventions and strategies that could improve active mobility and local accessibility. That is why, in the European research project 15minESTATES, we focus on LHEs across Europe, critically applying the 15-minute city concept. In five case study cities –Delft (NL), Halle (DE), Riga (LV), Budapest (HU) and Sofia (BG) –we look at spatial structures, transport options and behaviour, location of functions and amenities, and people's needs, perceptions and satisfaction in LHEs. The findings will provide input for a co-creative process with local stakeholders, supported by modelling, where we will try to find concrete solutions and strategies to promote active mobility and use of local functions and amenities.

In our paper we will present the first results of a residents'survey that was carried out in the project's five case study LHEs, giving insight into current transport behaviour and mobility practices, as well as active mobility barriers and specific needs regarding local services and amenities. Through a comparative analysis we analyse the similarities and differences between LHEs in different socio-political and cultural contexts and try to identify patterns that might apply to LHEs elsewhere. In combination with qualitative research and spatial analysis carried out in other parts of the research project, we aim to better understand the challenges for sustainable mobility transitions in this specific yet widespread neighbourhood type, which has not yet received the attention it deserves.

Keywords:

large-scale housing estates, 15-minute city, local accessibility, mobility behaviour, survey

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T_03 MOBILITY (B) / 1775**Suburbia or Dead End Street? Rethinking Mobility in Central Europe**

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Planetary crises of climate change, environmental degradation, and socio-economic inequalities are being accelerated by urbanisation patterns prioritising economic growth over ecological sustainability and social justice. A prominent example of such a phenomenon in the Czech Republic (and the whole Central Europe region) is suburbanisation, a long-ignored problem attributed to the idea of “free market growth.” Unlike integrated transport and land-use planning in Western Europe, the rapid post-socialist suburban growth in the Czech Republic is marked by spatial fragmentation and car dependency, deepening environmental and social concerns. This has reinforced socio-spatial inequalities, reduced access to essential services, and fostered unsustainable transport reliance. Rethinking suburban mobility strategies is urgently needed as urban areas aim for sustainable, just development models. In response, the Czech planning discourse started discussing accessibility-centred interventions to reduce car dependency and promote equitable mobility. These strategies are based on frameworks of 15-minute city, transit-oriented development (TOD), and low-traffic neighbourhoods. By integrating local amenities and enhancing public transport, planners hope to build resilient communities that reduce car reliance. However, these interventions need strong empirical support tailored to the unique socio-economic and spatial contexts of post-socialist cities. While international studies offer insights, their relevance to the Czech context is limited due to differing urban structures, policies, and economic conditions.

This paper contributes to addressing this gap by applying an advanced structural equation model (SEM) to analyse the relationship between built environment characteristics, socio-economic factors, and travel behaviour in suburban Prague. Specifically, the research examines the impact of local amenity accessibility on car dependency, measured through person miles travelled (PMT). Unlike conventional regression models, SEM captures the complex interdependencies between socioeconomic conditions, urban form, and mobility choices by incorporating latent variables and indirect effects. It offers a deeper understanding of mobility behaviours and their underlying structural relationships. The study includes a comprehensive set of amenities—such as educational facilities, healthcare services, retail, sports infrastructure, and community centres—while utilising geolocated travel diary data to provide detailed insights into individual mobility

patterns. Findings are further contextualised through case studies of selected suburban areas around Prague, assessing their implications for Czech planning practice.

The results reveal that socio-economic characteristics play a crucial role in shaping travel behaviour, often outweighing the direct influence of the built environment. Factors such as income levels, household composition, and employment status significantly determine mobility choices, including car dependency. This suggests that accessibility-centred interventions alone may have limited impact unless they are accompanied by policies addressing socio-economic inequalities. In particular, lower-income households often face constrained mobility options despite living in areas with high public transport accessibility. Therefore, strategies aiming to reduce car reliance must consider the broader socio-economic landscape to ensure that planning interventions effectively influence travel behaviour in post-socialist suburban contexts.

Keywords:

15 minute city; suburbia; centra europe; mobility; amenities

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T.03 MOBILITY (B) / 208

Urban equity and the spatial distribution of speed limits: “Fast” versus “slow” neighbourhoods?

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As evidenced by the popularity of proposals to implement city-wide traffic speed limits (typically 30 km/h or 20 mph), lowering urban speed limits is increasingly acknowledged as a key measure to foster inclusive streets, improve liveability and reduce the environmental impacts of motorised traffic (Yannis and Michelaraki 2024). By diminishing the “radical monopoly” of motorised traffic on urban streets, lowering speed limits may contribute to increase equity between transport modes and social groups (Illich 1974). However, little research has sought to assess street speed limits through the lens of urban

equity: existing research on urban speed limits tends to be rather technical and narrowly focused on their effects on traffic accidents and public health (Kravetz and Noland 2012; Cairns et al. 2015; Pilkington et al. 2018), rather than framed within broader conceptual debates related to urban equity and transport justice.

Responding to this research gap, the aim of the present paper is three-fold. Drawing upon existing reflections on the connection between transportation speed and socio-spatial justice (Illich 1974; Graham and Marvin 2001), at a theoretical level I seek to advance the idea that assessing the spatial distribution of street speed limits offers a novel and meaningful measure of urban equity. At a methodological level, I propose a method of extracting street speed limit information from OpenStreetMap data, and explore various indicators of speed limit distribution at a neighbourhood level. At an empirical level, finally, I assess the relationship between street speed limits and selected neighbourhood characteristics in Barcelona. Is the distribution of speed limits equitable between neighbourhoods, and to what extent do differences in speed limits between neighbourhoods reflect broader socio-spatial inequalities? In this respect, the present study seeks to contribute to the emerging body of literature assessing the spatial and social equity dimensions of traffic calming schemes (Aldred et al. 2021; Nello-Deakin 2024).

My analysis relies on publicly available street speed limit data from OpenStreetMap. To analyse and compare the distribution of street speeds limits between neighbourhoods, I extracted, cleaned and summarised speed limit information for all streets in Barcelona using the open software R, which I then used to calculate four proposed aggregate indicators of street speed limits at a neighbourhood level. To assess the extent to which the proposed speed limit indicators are related to key neighbourhood characteristics, I subsequently explored their relationship with selected neighbourhood level variables through bivariate correlation analysis.

My results show that average speed limits vary significantly between neighbourhoods, reflecting the existence of spatial inequities regarding the negative spatial externalities of automobility. Although my analysis shows that neighbourhoods with higher speed limits tend to have higher incomes and motorisation rates, it also draws attention to outlier neighbourhoods which combine high traffic speeds and low motorisation rates. From a distributive justice perspective, I argue that these outlier neighbourhoods can be thought of as being unfairly exposed to high traffic speeds which are mostly attributable to passing car traffic generated beyond the neighbourhood. Finally, I suggest that the proposed speed limit indicators could easily be replicated in other in other cities, enabling cross-city comparisons and facilitating the identification of leading cities in this domain, thereby providing a useful tool for research, advocacy and policy initiatives seeking to reduce urban traffic speed limits.

Keywords:

street speed limits; urban equity; neighbourhood characteristics; OpenStreetMap

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T_03 MOBILITY (B) / 253

Is SUMP a Panacea for Dynamic Cities? Bridging Ambition and Reality: A Case Study of Istanbul**Author:** Metin Senbil¹**Co-author:** Emine Yetiskul²¹ *Gazi University*² *Middle East Technical University***Corresponding Authors:** senbil@gazi.edu.tr, yetiskul@metu.edu.tr

Sustainable Urban Mobility Plans (SUMPs) have emerged as a key framework for addressing the transportation challenges of urban areas by emphasizing sustainability, inclusivity, and environmental responsibility. Developed within the European Commission's policy landscape, SUMPs aim to integrate public transport, active modes like walking and cycling, and land-use planning into a cohesive strategy that reduces greenhouse gas emissions and promotes equitable access to mobility. Despite their promise, SUMPs face critical challenges when applied to dynamic and rapidly expanding metropolises such as Istanbul, a city characterized by rapid population growth, increasing car ownership, and sprawling urban development (Rupprecht et al., 2019; Werland, 2020).

Istanbul's SUMP illustrates how a framework designed for stable urban environments struggles to adapt to the complexities of a fast-growing city. While the plan aspires to promote sustainable modes of transport, it inadequately addresses integration with land-use policies and urban design. The fragmented pedestrian and cycling infrastructure highlights a disconnect between planning and implementation, resulting in limited utility for active mobility initiatives. Similarly, the absence of robust measures to curb private car use, such as congestion pricing or low-emission zones, undermines efforts to reduce traffic congestion and environmental impact (Przybylowski, 2018; Spadaro and Pirlone, 2021).

Additionally, Istanbul's significant investments in rail transit expansion reveal a missed opportunity to integrate new infrastructure into a cohesive multimodal strategy. The lack of alignment between metro, tram, bus, and ferry systems exacerbates inefficiencies, limiting the potential benefits of these critical developments (Yaoundé SUMP Summary, 2019; Kiba-Janiak and Witkowski, 2019). The challenges faced by Istanbul emphasize the need for SUMPs to incorporate real-time data analytics and adaptive planning tools, ensuring that policies evolve with the city's rapid changes (Wołek, 2014; Rutka et al., 2024).

Central to overcoming these challenges is the need for institutional changes in Istanbul's administrative structure. The current framework, characterized by fragmented and distributed decision-making across multiple agencies, undermines the effectiveness of transportation planning. A restructured governance model that consolidates decision-making authority under a unified body is essential. This single, centralized institution should be tasked with integrating transportation and land-use planning, ensuring a holistic approach to urban mobility challenges. Without such institutional reforms, the successful implementation of SUMP initiatives will remain elusive, and the potential of these plans will be limited by inefficiencies and conflicting priorities across sectors.

Establishing stronger connections between transportation and land use is another critical institutional shift. Urban mobility cannot be effectively addressed in isolation; it requires close collaboration with urban design and development strategies. A governance framework that formalizes the relationship between these domains can enable more cohesive policies, facilitating the creation of mixed-use developments, transit-oriented projects, and pedestrian-friendly spaces. This alignment would not only enhance the feasibility of sustainable mobility solutions but also contribute to reducing commute times and improving overall quality of life.

This study proposes a reimagined SUMP framework for Istanbul, emphasizing land-use integration and transit-oriented development. Policies such as enhancing public spaces

for pedestrians, expanding non-motorized transport networks, and introducing innovative car-use restrictions are essential to fostering a sustainable mobility culture. Moreover, effective stakeholder engagement, including citizens, policymakers, and private entities, is crucial for implementing inclusive and responsive strategies (Lindenaua and Böhler-Baedeker, 2014; Andréi and Papuc, 2021). Istanbul's experience offers valuable lessons for cities facing similar challenges, underscoring the necessity of adapting SUMP to local contexts. By aligning long-term urban development goals with flexible, innovative mobility strategies, and implementing critical institutional changes, SUMP can transcend their current limitations, providing transformative solutions for the cities of tomorrow. This paper aims to contribute to propose a vision for advancing SUMP in rapidly changing urban contexts, offering a roadmap for sustainable and inclusive mobility planning.

Keywords:

SUMP; Istanbul; Sustainable Transport; Dynamic Cities; Mobility Planning

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T.03 MOBILITY (B) / 713

Opening closed practices to other ways of seeing: Transport and Urban Planning's imperative for self-reflection and re-invention

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To influence the formation of alternative trajectories for socially and environmentally just futures, transport and urban planners must challenge the status quo. To achieve this, they must actively facilitate a ‘cultural reform’ by bringing in new insights, knowledges, new narratives and new discourses with a commanding presence. However, the currently dominant ontologies, epistemologies, methodologies and tools of these disciplines are inadequate to open up alternative epistemic possibilities and imagine alternative pathways compatible with contemporary imperatives for equity, justice, health and wellbeing.

For transport and urban planners to achieve the cultural transformation required means seeing themselves and their disciplines differently. Rather than separate disciplines, with their individual objects and pre-occupations, they must see themselves as being not only mutually dependent but also part of the same processual entity. To enable this ontological shift entails these disciplines first to critically engage with their modes of being in the world and how they feed desires and outcomes contradictory to an equitable and climate just future.

What keeps sustainable transport and land use planning apart and how can they become genuinely integrated? While ‘integrated transport and land use planning’ is an easy phrase that has been repeated for decades, transformation begins with ‘being’ and to ‘become different’ requires seeing oneself and the world one is implicated in clearly. For instance, to what extent can we observe that meaningful change has occurred in terms of planning and building more equitable, sustainable, healthy urbanisms? Those small niches of celebrated progressive practice (we see you! We know who you are!) appear currently to be overwhelmed by a global regime of planet-destroying urbanism, cynical or perhaps just misguided at best.

In this paper, we advocate for an open-minded approach to counter-hegemonic alternatives. We argue that the framing of transport and urban planning and thus, planners - those with the agency to make change - is within a long-standing devious discursive space that is a powerful contributor constraining our self-reflective capacity and concomitantly, planners’ ability to facilitate the transition.

Acknowledging the principles of social constructionism, which assert that truth and knowledge are created and legitimised within different discourses and narratives, this position paper examines core aspects of the contemporary discursive landscape of transport and urban planning with a focus on Australia.

The settler colonial Australia’s urbanism represents a range of extremes, reflecting its ongoing struggle to address numerous contrasts and contradictions. A defining feature of this urbanism is the very high levels of automobility and the devious discourses that maintain the nation’s cultural and economic dependency upon it.

We explore some key practices shaped by these discourses and, in turn, how these practices help perpetuate their own discursive framing. In recognition of the narratives, values, assumptions and judgements that wield significant power in underpinning the discursive spaces of transport and urban planning, we illustrate how this discursive space coerces the urban and transport planning fields into operating as ‘closed practices’. By so doing, we aim to facilitate a critical discussion and encourage the self-reflection transport and urban planners urgently need to have. We conclude by describing some possible pathways for reorienting the transport and urban planning field toward embracing alternative epistemic perspectives and enabling long-overdue cultural reform.

Keywords:

paradigm change; equity; planetary health; transformation; sustainable urbanism

T_03 MOBILITY (B) / 881

Prosumers’ Adoption Behavior of Shared Parking Services: Implications for Sustainable Urban Planning

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Rapid urbanization has posed numerous challenges for major cities around the world, with a critical issue being the shortage of adequate parking spaces. As reliance on private vehicles has increased, the availability of parking spots has not kept pace. Consequently, drivers often spend significant time searching for parking, which leads to higher carbon emissions. To address this problem, the concept of shared parking services has emerged. Shared parking apps allow citizens to act as both providers, offering their unused parking spaces, and consumers, utilizing available spaces when needed. This dual engagement creates a new concept known as “prosumers.” Prosumers not only intend to share their parking spaces but also intend to use the spaces of others. However, current urban planning does not adequately reflect the behavioral intentions of prosumers, treating them as if they are the same. Recent research in behavioral economics indicates that prosumers may have different intentions when it comes to sharing their own parking spaces compared to using others’. Additionally, these intentions are influenced by various factors. Understanding these differences is essential for planning sustainable shared parking services. This study aims to investigate the behavioral intentions of prosumers regarding shared parking services. We conducted a web-based survey targeting prosumers who have actively participated in the service as both providers and consumers. To deeply understand prosumers’ intentions, we have developed model frameworks based on the extended theory of planned behavior, incorporating perceived risk theory. We hypothesize that socio-demographic variables and land use factors significantly affect these intentions. Our findings reveal a notable trend: prosumers exhibit a generally lower intention to share their parking spaces compared to their intention to utilize the parking spaces of others. Furthermore, our analysis indicates that various dimensions of perceived risk significantly influence prosumers’ behavioral intentions to either share their own parking spaces or to use those offered by others, but these effects manifest in distinct ways. For instance, perceived performance risk has emerged as the most significant factor affecting the intention to share parking spaces. This is particularly evident among older and female prosumers residing in city centers, who may have heightened concerns about the reliability, safety, and quality of the shared parking experience. Such concerns could stem from the potential for damage to their property or the apprehension about the security of sharing their spaces with strangers. On the other hand, perceived financial risk plays a crucial role in shaping prosumers’ intention to use the parking spaces offered by others. This is especially pronounced among low-income individuals living in neighborhoods where shared parking availability is limited. These individuals may be particularly sensitive to costs associated with parking, fearing that they could be overcharged or that the pricing might not align with their budgetary constraints. The financial considerations surrounding this risk factor can significantly deter them from utilizing shared parking services offered by their neighbors. Given these insights, we propose several actionable strategies that urban planners can implement to enhance the effectiveness and sustainability of shared parking services.

Keywords:

Shared Parking Services; Prosumers; Behavioral Adoption; Sustainable Cities

T_03 MOBILITY (B) / 1082

Perceived Barriers and Enablers to Using Transit: Understanding heterogeneity of perceptions across different groups of the population

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Improving public transit to attract new riders and retain existing ones has been seen as a major priority for many cities worldwide. This is to foster their abilities to move towards sustainable development by meeting their CO2 emissions reduction goals, while achieving a wide array of social, equity, and economic objectives. Cities strive to understand how users perceive different challenges, or barriers, to using these systems and their views of the needed interventions or solutions to improve such systems, or enablers. Several studies have indicated that perceived barriers could influence people's activity participation and well-being (Prayitno and Moos, 2022). Additionally, perceived aspects such as safety, comfort, and social interaction can play a significant role in passengers' travel choices (Trepáčová et al., 2021). These perceived barriers could also vary across different groups of users (Allen and Farber, 2018). While previous research has focused on understanding perceived barriers or enablers to using transit for specific groups (e.g., females and students), little has been done to investigate perceived barriers among different groups that can be engaged in the planning process. To address this gap, this research aims to examine the perceived barriers and enablers while understanding differences between different population groups. Two primary groups were identified: those with individual-related barriers and those who, despite not perceiving any personal barriers, perceive societal barriers. Furthermore, these two groups were broken down by gender, use of transit, and university status.

To achieve the aforementioned goals, the study uses data collected from a large online survey conducted in 2024, called the USask Mobility survey (1,600 respondents), to understand travel behaviors and perceptions of the University of Saskatchewan's population. The University of Saskatchewan is a major educational, community service, and employment center in the city of Saskatoon, Saskatchewan, Canada. In recent years, the commuting patterns of university students have received increased attention due to their large numbers and their potential for behavior transformation, as students tend to adopt new travel habits during this period of their lives (Cadima et al., 2020). A mixed methodology approach was utilized to analyze open-ended and Likert scale questions of perceived barriers and enablers collected from the survey. The initial results show significant disparities in barrier perceptions across different demographic groups, including gender, with females more likely to perceive individual-related barriers and males more likely to report society-related barriers. Nevertheless, regardless of the group, participants consistently identified transit route and system planning issues as the most common perceived barriers and enablers. This research underscores the importance of tailored transportation solutions to enhance transit use and users' retention. By understanding a wider array of perceived barriers and enablers, cities and transit agencies will be able to better direct their resources to improve different groups of users' experience while adjusting service aspects to address different groups of users' concerns, thus building a more inclusive system. In other words, the study offers cities important insights that can be used to foster the development of more equitable transit systems for diverse groups of users.

Keywords:

Perceived Barriers; Perceived Enablers; Public Transit; Gender; Transit use.

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T_03 MOBILITY (B) / 1098**Operationalising Mobility Justice in Urban Street Transformations: Insights from Five European Cities****Author:** Enrica Papa¹**Co-author:** Sabina Cioboata¹¹ *School of Architecture and Cities, University of Westminster***Corresponding Authors:** e.papa@westminster.ac.uk, s.cioboata5@westminster.ac.uk

Urban streets are critical spaces for addressing the intertwined challenges of mobility, equity, and sustainability. Far from being mere conduits for movement, streets are dynamic public spaces (Bertolini, 2020) where diverse mobilities and needs intersect, and where issues of justice and equity are contested. Drawing on Mimi Sheller's (2018) foundational theories of mobility justice, this research investigates the application of justice principles in urban transformation processes, focusing specifically on streets. Despite the theoretical significance of mobility justice, challenges remain with its exploration and operationalisation in practice (Verlinghieri 2024), particularly in the context of street transformations. What is more, seeing street transformations merely as socio-technical innovations can risk obscuring their aim of bringing together the different, often contradictory interests and needs of multiple actors –an intrinsically political exercise. This study aims to highlight how theories of justice—distributive, procedural, recognition, and epistemic—can offer a lens to better understand streets not just as technical infrastructures but as inherently political spaces where power, access, and identity are negotiated. A focus on street transformations also generates reflections on their potential to catalyse systemic change by addressing the inequities embedded in urban transport systems.

More specifically, this study examines how mobility justice can be operationalised in street transformation projects across five European cities: London (UK), Amsterdam (NL), Braga (PT), Kozani (GR), and Riga (LV). Conducted within the framework of Just Streets - an €11 million EU Horizon project involving 32 transdisciplinary partners - the research evaluates interventions such as street space reallocation/reclaiming (London Harley Street, Kozani, Riga), active mobility infrastructure improvements and tactical urbanism (Amsterdam) and school zones for child-friendly mobility (London Lambeth and Braga). These initiatives aim to prioritise marginalised groups, foster equitable access, and redefine streets as inclusive spaces for social interaction, environmental sustainability, and community well-being.

The research addresses two central questions:

1. What are the key dimensions of mobility justice, and how can they be systematically applied to guide street transformation processes?
2. What practical challenges arise in operationalising mobility justice within street transformation initiatives?

To answer these questions, the study adopts a multifaceted framework of mobility justice, integrating distributive justice (equitable resource allocation) (Pereira et al., 2017), procedural justice (participatory decision-making), recognition justice (acknowledging diverse mobilities) (Sheller, 2018), and epistemic justice (valuing non-expert knowledge) (Fricker, 2007). The research draws on policy analysis, case study reviews, stakeholder interviews, and site observations to explore how mobility justice principles are applied in planning practice and implementation processes.

Findings demonstrate that streets provide a unique opportunity to address systemic inequalities through tangible, localised and context-specific interventions. Some cases highlight the importance of participatory planning processes that empower marginalised voices, ensuring that transformations reflect community needs and priorities. Similarly, street changes that incorporate diverse knowledge systems

and acknowledge diverse mobility and social needs demonstrate not only greater effectiveness in achieving equitable outcomes but also greater community acceptance of transformations. Additionally, street space reallocation cases from the five cities highlight the potential for the equitable redistribution of street resources by prioritising space for street users who had been previously marginalised. The study also highlights a number of challenges with operationalising mobility justice in practice. These include reflections on the concept of justice itself being notably absent from city planning documents, the lack of methodological frameworks and metrics for evaluating justice-related outcomes of street transformations, and limited institutional capacities for community engagement, frequently resulting in superficial consultation processes.

Finally, the study provides important reflections on the potential of localised, justice-centred street interventions to help shift urban transport planning from efficiency-driven paradigms to those prioritising equity, care and accessibility.

Keywords:

mobility justice; street transformations; just transitions; active mobility; inclusion

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T_03 MOBILITY (B) / 964

The Flux of Urban Mobility and Social Discourse on Bus Usage: A Text Mining Approach to Global Public Perceptions of Bus Services in the Digital Age

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The rapid evolution of urban built environments has significantly enhanced the mobility of people, goods, and information. The integration of social and technological systems in urban transportation has created a complex urban framework, presenting substantial challenges to mobility planning and policymaking. Among various transportation modes, buses are particularly significant due to their wide coverage, large capacity, and mass user base, making them essential for addressing these challenges. However, with the rise of diverse transportation options in the digital era, a critical question arises: Is there still a need for buses? Or, more specifically, should buses continue to play a central role in the evolution of urban mobility?

Buses offer several advantages, including affordability, large capacity, and the ability to serve marginalized communities, providing equitable mobility services across urban areas. However, they face significant ridership losses due to the growing popularity of new, private-oriented modes of transport, such as ride-hailing services, carpooling, shared bicycles, and rail-based transport. While multimodal transportation systems offer many benefits, the role of buses in providing emergency transportation support and maintaining connectivity for communities beyond major corridors is invaluable. In a broader sense, buses remain the backbone of urban transportation systems, supporting the development of more advanced modes and acting as a “silent enabler” that underpins urban mobility, even in an era of emerging technologies like eVTOL.

Public dissatisfaction with buses has become a key obstacle to the coordinated development of multimodal transportation systems, hindering overall transportation efficiency. This study aims to identify public perceptions and sentiments toward buses using a user-centric approach. By analyzing global data across diverse cultural contexts, this research highlights both commonalities and differences in public attitudes, providing valuable insights into universal user demands and helping identify strategies to address declining ridership.

The research employs grounded theory from a transportation sociology perspective and uses “positive search” and “negative search” strategies to collect textual data related to bus usage from international social media platforms such as Twitter, Facebook, Instagram, and TikTok. Through axial coding, sentiment analysis, and principal component analysis, this study identifies global users’ emotional inclinations and value expectations regarding bus services. Additionally, the study integrates findings from field surveys conducted in China, providing a localized perspective to the global discourse, offering a comprehensive analysis and solution framework.

The findings reveal that commuter travel is the most dominant use case for buses, while tourism and leisure are the most desired areas for service expansion. Public concerns focus on service quality instability, poor station planning, and other key issues such as unreliable schedules, inadequate coverage, overcrowding, and uncertain travel times, all of which reduce user satisfaction.

Improving urban mobility requires a deeper understanding of specific user needs. This study represents an initial step in this process by identifying the reasons behind public dissatisfaction with buses. By examining the “transport society” within digital networks, we offer a nuanced understanding of regional differences in public complaints and appreciation for bus services. Based on these insights, we propose adaptive optimization strategies for bus planning and operations, providing a public perspective to support the development of multimodal transportation systems. Moreover, we offer urban planning recommendations to enhance transportation services and contribute to the efficient, safe, low-energy, and low-pollution operation of cities. These efforts aim to resolve urban challenges and promote sustainable urban development.

Keywords:

Urban Public Transportation; Public Perception; Textual Sentiment Analysis; Buses; Transportation Sociology

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T_03 MOBILITY (B) / 558**Car dependence dynamics between spatial and individual factors: a quantitative methodology addressing regional challenges in Lombardy (Italy)****Author:** Jaime Sierra Muñoz¹¹ *Politecnico di Milano***Corresponding Author:** jaime.sierra@polimi.it

Car dependence, a prevalent barrier to sustainable and inclusive mobility, emerges from complex interactions between spatial and individual determinants (Mattioli et al., 2016). While the process that relates both has always been challenging, reducing car pervasive impacts is a key aim for achieving a smarter, safer and fairer transport system. This makes the assessment of car dependence a critical issue, which is being addressed by this research as a part of a broader PhD project. This larger study develops a comprehensive framework for car dependence by systematically reviewing literature and constructing a large dataset of related indicator, enabling further numerical analysis. Within this context, the present study integrates spatial and individual insights, which are not often combined in academic approaches. It examines the results of an attitudes-and-perceptions survey categorized according to territorial car dependence levels emerging from spatial metrics. By means of a case study, this research focuses in Lombardy, Italy's most populated and richest region, characterized by a heterogeneous territorial structure.

The spatial analysis represents the first stage of the study and builds over literature-established metrics (Sierra Muñoz et al., 2024) to depict the phenomenon: from cause-and-effect indicators associations, bivariate classifications provide clusters of different car dependence levels across a regional context. These are aligned with different spatial settlement characteristics, with increasing car dependence from dense urban areas towards suburban and rural contexts. These spatial categories form the foundation for integrating individual-level insights in a second stage, which additionally categorize survey respondents based on their car dependence self-perception. Together, these spatial and subjective dimensions offer a comprehensive framework to examine attitudes and perceptions of car dependence across diverse territorial clusters.

The results highlight significant heterogeneity within and across different car dependence spatial clusters: around a quarter of respondents' self-perceived car dependence does not align with the spatial category of their residential area. The findings underscore the role of personal activities, particularly access to work in urban areas, as well as built environment perceptions and different attitudes towards use and impacts of the car. Surprisingly, respondents in suburban areas who do not feel dependent on cars often declare attachment to cars and less concern on their impacts. Conversely, their peers on rural clusters report higher car use together to dissatisfaction on its reliance. These findings illustrate how car dependence may enclose different meanings relating to space: from a practical necessity in some contexts to a deeper reliance on habitual or convenience-based car use, going further than simply feeling dependent.

The research challenges deterministic assumptions about car dependence based solely on socio-spatial factors. The nuanced interplay between spatial and personal dimensions of car dependence highlights the need for place-based approaches to studying the phenomenon. By recognizing the diverse drivers of car dependence in each context, tailored interventions can be developed to address the unique needs and rationales of each territory. For example, strategies for suburban areas might focus on reducing attachment to cars and overcoming its car-centered designs, while rural interventions might prioritize enhancing alternatives to reduce reliance.

This study contributes to broader discussions on reimagining mobility systems, providing deeper understanding of car dependence functioning across different territorial con-

texts. While car dependence sustains in a far-reaching and resilient automobility system (Urry, 2004), context-sensitive strategies represent an actionable way to mitigate it in a scalable manner. Integrating car dependence spatial and individual perspectives, as this research proposes, provides a way to bridge gaps and develop more accessible and fairer transport systems in the context of current mobility transitions.

Keywords:

car dependence; spatial assessment; attitudes; perceptions;

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T_03 MOBILITY (B) / 1028

The role of the car in a post car society

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The role of the car in a post car society

According to Ivan Illich in his book “Tools for Conviviality” (Illich 1973) each technical invention has its liberating effects, however, if not carefully managed, turns men into slaves of the same invention. The car is one of his favourite examples.

The original purpose of cars was (1) Leisure trips to the countryside for wealthy urbanites, and 2) supporting living /working in rural areas for farmers. In the 1950's a democratization of the car led to industrial production for a market instead of selected customers. Since then, instead of leisure trips or selective functional trips in industrialized countries the car has been used for ubiquitous, utilitarian trips like commuting and shopping, leading to the ‘cycle of car dependency’.

Although worldwide car use and ownership are rising, many governments currently are trying to shape conditions for a so called mobility transition, away from the car. However, the current ‘system of automobility’, as described by Urry, (Urry 2004) is proving extremely resilient to change. This system is not sustainable, as it needs mass production of private (e) cars, damaging the environment on macro level, and destroying the urban fabric on micro level.

In this discussion paper, we explore if and how rethinking the role of the car, starting from its original qualities, can help unlock this situation.

Key questions are: What are the essential liberating qualities of the car? Can these be again put centre stage? And: Can they be sustainable?

Our findings show that, in line with the original purposes:

- 1) A first unique quality of automobility is the possibility of leisure or social trips over longer distances to peripheral locations. This is liberating in a positive way.
- 2) A second unique quality is the possibility of functional trips to locations and/or times beyond walking/cycling/public transport range, but also special purpose such as trips carrying bulky goods, trips carrying people not able to walk/cycle/ride public transport

etc.

In the first category trips are mostly incidental. As incidental use is appropriate for sharing or renting, one feature of a sustainable automobility of the future could be the availability of renting systems for e-cars, for leisure or special trips. Renting instead of owning leads to more sustainability, as the demand for new produced private cars would drop dramatically.

In the second category trips are either incidental or daily. If people depend on the daily use of the car, renting is not very likely. However, as these daily trips are mostly individual, and covering relatively short distances, the present-day car is oversized and overpowered for this purpose. Downsizing of the car is possible. Variants of the microcar could fill this gap, leading to more sustainability, as the production and use of microcars seems to be less damaging for the environment and for the urban fabric.

The paper concludes that in a post car society the car could play two positive and sustainable roles: A rental system for leisure purposes and special functional trips, and, in a downsized form, for the societal participation of those who are daily dependent on the use of a car. The paper ends with some reflections how policy could create the conditions for such a transition.

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Keywords:

mobility; sustainability; transition

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T_03 MOBILITY (B) / 247

Plugging into green mobility: public perceptions and barriers to V2G adoption

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The global transition towards sustainable transportation systems is essential for mitigating the environmental and societal impacts of climate change. As a cornerstone of efforts to decarbonize the transport sector, electric vehicles (EVs) hold substantial potential to reduce greenhouse gas emissions and improve urban air quality, addressing critical global challenges. However, achieving widespread adoption of EVs is not without challenges, as unequal social and spatial access to these technologies remains a significant barrier in many regions. Vehicle-to-grid (V2G) technology represents a transformative innovation in this context, offering the potential to align individual mobility needs with broader sustainability goals. Despite its promise, the successful implementation of V2G depends heavily on public acceptance. Current research on V2G is predominantly technical, focusing on energy systems, grid integration, and battery performance. However, public perceptions and acceptance of V2G remain rather underexplored. This knowledge gap presents a significant challenge, as public awareness, understanding, and acceptance are critical to driving adoption. Furthermore, existing studies on public perceptions of EVs and V2G are fragmented, employing diverse methodologies and often yielding inconsistent findings.

This study aims to conduct a systematic review of the existing literature on public perceptions and acceptance of EVs and V2G technology. By synthesising and critically analysing the current body of research, the study seeks to provide an updated and comprehensive understanding of the factors influencing public acceptance of V2G. A systematic search was conducted across the Scopus and Web of Science databases, following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Manuscripts were screened using predefined inclusion criteria, and duplicates were managed with Rayyan software. Data extraction and coding were performed using MAXQDA, with its AI Assist functionality supporting thematic analysis.

The review included 17 manuscripts published between 2018 and 2024, with Europe, particularly the Nordic countries, leading contributions in this domain. Most studies focused on the benefits and challenges of V2G adoption, while motivations for its use received comparatively less attention. Private vehicle users, both EV and non-EV owners, were the most studied population group, with limited attention paid to institutional stakeholders and experts. Survey-based methods, particularly declared preference surveys, were the predominant data collection instruments, with sample sizes ranging from 306 participants at the local level to 5067 at the national level.

Findings show that V2G adoption is shaped by a combination of technical, economic, and behavioural factors. Key barriers include concerns about battery degradation, the limited range of EVs, and system complexity. These challenges are further compounded by spatial disparities, with urban residents prioritising infrastructure availability and rural residents focusing on range reliability. Trust in V2G technology also emerges as a critical issue, undermined by concerns over data security. Nevertheless, financial incentives such as subsidies and discounts, alongside strong personal commitments to sustainability, were identified as key drivers of acceptance and adoption.

These results highlight the critical need for evidence-based public policies that integrate technological innovation with public engagement and equity considerations. By addressing spatial and social disparities, policymakers can create conditions conducive to V2G adoption, fostering a more inclusive and sustainable energy transition. Additionally, this study provides a valuable foundation for future research and policy development, supporting the alignment of V2G technology with the needs of diverse communities and advancing global efforts to combat climate change.

Keywords:

Sustainable Mobility; Electric Vehicles; V2G; Citizens Perceptions

T_03 MOBILITY (B) / 1148

Do car-restrictive policies shape elections? The electoral impact of implementing low-traffic zones.

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Car-restrictive policy measures such as low-traffic zones and car-free streets are increasingly implemented as cities seek to address challenges related to congestion, air pollution and climate change (Da Schio et al. 2023). While these measures aim to create more sustainable and livable urban environments, their implementation often sparks intense public and political debate. Transport stands out as a pervasive and pressing conflict in local politics (Paterson, 2007), with citizens and other sectors of society often actively resisting car-restrictive policies (Marquet et al. 2024a). This resistance contributes to a strong reluctance among policymakers to implement measures curbing car use (Unruh, 2000).

Lanzendorf et al. (2023) assert that the challenge lies not only in devising effective measures but also in garnering stronger public acceptance for the introduction of car-restrictive policies. Consequently, 'the public' becomes an increasingly influential and active participant in the ongoing debate. While the public tends to accept pull measures more easily (for instance, dedicated bicycle infrastructure and increased public transport provision), politically, push measures are much more challenging to implement. Hence, public acceptance often plays a pivotal role in determining the success of these policies, and if these can even be implemented in the first place.

The introduction of such policies can influence public opinion and, subsequently, electoral outcomes. Political parties advocating circulation measures may face backlash from segments of the electorate opposed to the changes, while others may gain support for their commitment to traffic safety and urban well-being. These dynamics raise questions about the interplay between public acceptance, policy outcomes, and political accountability.

Against this backdrop, this paper aims to contribute to the emerging work (e.g. Marquet et al. 2024b) questioning the electoral impacts of implemented car-restrictive measures. By analyzing two cities in Belgium (Ghent and Leuven) where low-traffic zones were recently adopted, we examine the electoral performance of the Greens, the political party most strongly associated with it. As such, we seek to understand whether such policies contribute to electoral gains or losses. By means of election results at the level of statistical wards, combined with a set of socio-economic characteristics, car ownership and built environment characteristics, we analyse to what extent the Green party has gained or lost at the municipal elections of October 2024. We hypothesize that higher car ownership and use is associated with lower votes for the Greens. Higher bicycle ownership, higher education level and age is expected to positively affect a vote for the Green party. In the paper, we test whether the Green party received more or fewer votes than would be expected based on the selected variables. By comparing the observed electoral results with the predictions derived from the statistical model, we assess if the adoption of low-traffic zones influences voter behaviour beyond what socio-economic and other relevant variables would suggest.

Keywords:

car-restrictive policy; public acceptance; election; case study

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Why public transport policies work or not? A meta-analysis based on the Behaviour Change Wheel model

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Public transportation promotion policies are vital for reducing carbon emissions, improving public health, and fostering sustainable urban development. However, assessing their effectiveness is challenging due to inconsistent research findings and methodologies stemming from varied classification criteria (Hrelja et al., 2020). Additionally, although meta-analysis has been established as an effective method for evaluating policy outcomes (Gurevitch et al., 2018; Semenescu et al., 2020), existing meta-analyses often fail to explain why certain policies are more effective, primarily due to a lack of theoretical frameworks underlying these policies. This uncertainty can lead to the misallocation of financial resources, diminished public trust in policy initiatives, and the persistence of inefficient urban growth patterns. There is an urgent need for a clear, unified framework to standardize evaluations of public transport policies, enabling more consistent research and deeper insights.

To address the research gap, our study pioneers the use of the Behaviour Change Wheel (BCW) model to analyze public transport policies. Originally developed for public health and environmental protection, the BCW enhances policy design by systematically integrating factors that drive individual behavior change (Michie et al., 2011). This framework breaks down policies into three layers: policy, intervention strategy, and the Capability-Opportunity-Motivation-Behaviour (COM-B) model. Under the BCW model, the intervention strategies layer encompasses targeted actions that directly influence behaviors, while the COM-B layer identifies and addresses the key factors that drive or impede these behaviors.

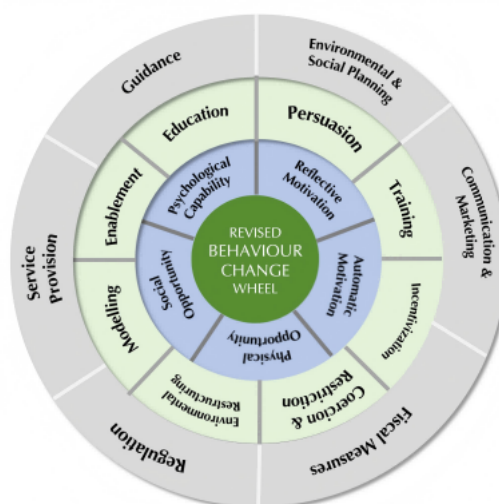


Figure 1: Fig.1 Revised BCW model for the Evaluation of Public Transport Policies

Fig.1 Revised BCW model for the Evaluation of Public Transport Policies

The existing body of our study has extensively evaluated the impact of public transportation promotion policies using the BCW model. The policy layer categorizes public transport policies into six types: 1) Guidance; 2) Environmental and social planning; 3) Service provision; 4) Fiscal; 5) Communication and marketing; 6) Regulations, which are further

broken down into specific intervention strategies and individuals' capabilities, opportunities, and motivations within the model's deeper layers. To provide a deeper understanding of policy effectiveness, this study conducted a meta-analysis within the BCW framework, synthesizing data from 24 high-quality studies across 16 countries with over 5.59 million data points. We systematically coded each policy in those studies into the BCW model's three layers and performed stratified subgroup analyses to investigate the causal effects and mechanisms of six policy categories in promoting transit adoption.

The key findings are as follows:

1. The overall effect size of public transport policies is 0.5165. Within the policy layer, only guidance policies surpass this average; in the intervention strategies layer, incentivization, coercion & restrictions, modelling, and enablement demonstrate effect sizes above the average; within the COM-B layer, social opportunity and automatic motivation show effect sizes that exceed the mean.

2. Guidance policies are the most effective in promoting public transit adoption (n=12, d=0.881), **including incentivization, education, and coercion & restriction interventions.** They work well because they enhance reflective motivation (n=7, d=0.3418), automatic motivation (n=5, d=0.9034), and physical opportunities (n=5, d=0.4102), providing strong support for behavioral change.

3. Environmental and social planning policies are least effective policies (n=17, d=0.2093), **including environmental restructuring interventions.** These measures mainly improve physical opportunities through environmental changes (n=16, d=0.4102), but their limited impact on motivation makes it harder to sustain long-term behavior change.

4. Service provision policies provide substantial long-term benefits (n=21, long term d= 0.5285), **which combine environmental restructuring and enablement interventions.** These approaches strengthen automatic and reflective motivation (n=7, long term d= 0.6998; n=11, long term d=0.4148) and physical opportunities (n=17, long term d=0.438), leading to both immediate behavior changes and sustained public transit adoption.

Keywords:

Meta-analysis; Behavior Change Wheel; Public transportation; Policy; Behavioral intervention

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T.03 MOBILITY (B) / 823

From a linear infrastructure to a logistic operational landscape: the BreBeMi Motorway in Bergamo plateau

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Over the past decades, rural areas have experienced significant transformations driven by changing consumption patterns and lifestyles. These shifts have led to new urbanization forms, rendering the traditional urban-rural distinction less relevant. Among other dynamics, scholars in geography and urban studies pointed out the evolution of peri-urban spaces as “operational landscapes” (Brenner & Schmid, 2013, 2014). These areas are crucial in contemporary urban systems, because they are essential facilities, and they allow resource extraction, waste management, and logistics.

Logistics, in particular, has undergone profound changes since the 1980s, spurred by industrial decentralization and globalization. These changes have redefined global production systems, reducing the importance of localized production in favour of globally connected logistics nodes (Tadini, 2013). This shift facilitates the global flow of goods (Cabodi, 2001) and has led to the clustering of logistics functions. Such clusters often create logistics landscapes. These landscapes can be classified into three types based on their proximity to production sites (first mile facilities), markets (last mile hubs), or global flow infrastructures (platforms).

The expansion of logistics landscapes, particularly in suburban areas, has introduced large-scale facilities that integrate production and distribution based on transport conditions. However, this growth raises environmental concerns, including soil sealing and increased traffic pollution, resulting in significant landscape transformations. Therefore, this evolution is not just a multiplication of functional elements but an active agent of reshaping landscapes (Armondi et al., 2024) and with the research author would like to grounding this issue.

This paper examines land-use transformations along motorway corridors resulting from enhanced accessibility. These transformations arise due to improved mobility and increased land value when new linear infrastructures are established in rural areas. The analysis addresses three research questions:

1. Does the infrastructure contribute to the transformation of rural/agrarian spaces into accessible linear systems?
2. How do corridors evolve over time under new territorial pressures?
3. How the shaping of an operational landscape differs from a merely juxtaposition or sprawl of logistic functions?

The study aims to increase awareness of the role and impact of logistics functions in urban studies, contributing to innovative approaches in territorial governance at local and regional levels. It seeks to move beyond traditional methods focused on traffic analysis and soil consumption, incorporating social and spatial dimensions into the evaluation of logistics. Recent researches (among others: Paris et al, 2024) suggests that logistics platforms can drive territorial transformation and development of fixed capital in peri-urban and rural areas. However, mitigating the negative effects of uncontrolled logistics expansion, such as sprawl, is essential to achieving these benefits.

The research centers on the A35 BreBeMi motorway in the southern Province of Bergamo, Italy. This area, characterized by a rural, low-density plateau, has seen the development of several logistics platforms in recent years. After the inauguration in 2015, the area has become a hub for logistics, with multiple new facilities concentrated within 265 km². This growth aligns with increased attention to environmental and landscape concerns and shifts in urban planning paradigms toward sustainable land management.

This research is part of the project “SEW Line: Socio-Ecological Way for a Holistic Mobility Infrastructure Planning in Periurban and Rural Landscapes” developed by the University of Padua, Bergamo and Roma Sapienza within the research program PRIN2022 PNRR M4C2 funded by European Union –NextGeneration EU (DD MUR n. 1409 del 14/09/2022).

Keywords:

logistics; landscapes; mobility infrastructures

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T_03 MOBILITY (B) / 106

“I travel because I want to be well”: How daily travel contributes to older adults’quality of life in Canada

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Remaining independent, active, healthy, and mobile is essential for older adults’quality of life (Hooyman & Kiyak, 2010). However, older people’s ability to maintain their well-being as they age relies on a range of material and social factors (Hooyman & Kiyak, 2010). Research and practice have long focused on developing and implementing quality of life indicators with the goal of centering well-being in decision making (Abou-Zeid, 2009; De Vos et al., 2013; Ettema et al., 2011; Nordbakke & Schwanen, 2014). Tools and methods evaluating people’s subjective well-being have become increasingly popular in the past decades (e.g., Diener et al. (1985); Diener et al. (2010)), and travel is explored as one of the many dimensions that make up this evaluation of well-being (De Vos et al., 2013). This study uses the Aging in Place Survey to examine the factors influencing older adults’evaluation of the contribution of daily travel on their quality of life in Canada using a mixed-methods approach. The Aging in Place survey is an online bilingual survey conducted by the Transportation Research at McGill (TRAM) group. The survey gathers information on the travel needs and experiences of older adults (65 years and older) across six metropolitan regions in Canada, including Toronto, Montréal, Vancouver, Halifax, Victoria, and Saskatoon. Multiple recruitment strategies were employed to ensure a large

and representative sample as proposed by Dillman et al. (2014). Flyers were distributed at senior and community centers, the survey was advertised on social media and using senior center mailing lists, team members gave newspaper and radio interviews, and additional respondent recruitment was done through Léger, a market research and analytics company specialized in public opinion surveys. Data collection was completed in Winter 2023. The ordered probit model (N = 2,342) for agreement with daily travel contributing positively to their quality of life shows that agreement was higher among older adults who use public transit frequently, enjoy travelling independently, live in walkable areas, and are satisfied with their lives and physical health. In-depth interviews (N = 56) corroborate these quantitative findings and reveal additional considerations such as the importance of walking for mental and physical health, as well as the lasting impacts of the COVID-19 pandemic on older adults' travel-related quality of life. In addition to supportive physical and social environments, ensuring adequate transport options are available for their essential needs, leisure activities and the simple pleasure of travelling is key in enhancing older adults' quality of life now and as they age. The findings improve our grasp of older adults' conceptualization of their travel's impact on their quality of life. Though many of the quantitative and qualitative results echo each other, the thematic analysis adds important nuance to the probit model findings and uncovers new dimensions of older adults' daily travel and associated well-being, supporting the value of using mixed methods to address complex concepts. The results of this study could be of interest to policy makers and community leaders wanting to address the well-being of older adults.

Keywords:

Quality of life, daily travel, older adults, well-being

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T_03 MOBILITY (B) / 1877

Can On-Demand Transit Systems provide equitable public mobility services? A comparative study in two continents

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Sustainable mobility is intrinsically linked to the concept of spatial justice, which refers to the equitable distribution of resources, services, and access, often considered a fundamental human right (Soja 2010). Transport justice is vital to spatial justice, focusing on designing and developing equitable transport systems (Martens 2017). To attain sustainable mobility and transport justice, intensive work on new and innovative mobility solutions is ongoing worldwide. On-demand transit has shown great promise for improving flexibility and accessibility in public transport (Alonso-Gonzalez 2018). Today, on-demand solutions are a key component of future public mobility, where digital applications and seamless digital interfaces contribute to new opportunities for providing on-demand transit. Research, however, argues that there is often a lack of evaluation and follow-up of different initiatives and mobility solutions conducted in various contexts (Berg 2017, Stjernborg and Nilsson 2018). While on-demand transit is proven to increase transit accessibility significantly, its impact on transit equity and equality has been rarely addressed (Hwang, et al. 2024). This study aims to examine, compare, and learn from two On-Demand Transit solutions deployed in different urban and rural contexts on two continents: MARTA Reach in Atlanta and Plusresa in the region of Skåne in southern Sweden.

MARTA Reach was a six-month pilot of an On-Demand Multimodal Public Transit System (ODMTS) in Atlanta that began on March 1, 2022. The aim was to improve accessibility to jobs, healthcare, and healthy food while fostering an equitable and accessible transit system. MARTA Reach combined on-demand vehicles to serve the first/last miles, with high-frequency rail or bus routes to transport commuters on dense, congested corridors. Funded by an NSF CIVIC grant, MARTA Reach was a collaboration between researchers at Georgia Tech and the Metropolitan Atlanta Transit Authority (MARTA). MARTA operated the pilot by arranging for the shuttle fleet and drivers. The researchers at Georgia Tech developed the software technology and the user applications and maintained the backend server. The pilot program was deployed in four zones within Atlanta having distinct demographic characteristics to understand how the benefits of ODTMS would reach a diverse group of transit users.

Plusresa, which started in March 2021 in the region of Skåne, was conceived to provide public transportation for people living in rural areas. Skåne is the southernmost Swedish county, whose county town is Malmö, which is also the third largest city in Sweden. In 2021, Skåne had about 1.4 million inhabitants, with a population density of 124 inhabitants per square kilometer. The population is unevenly distributed, with the largest proportion living in the south-western part of Skåne. North-eastern Skåne, which is the focus of this study, is often noted for its natural resources and sparser habitation geography. The objective of Plusresa was to connect rural areas with major traffic routes with a focus on commuting for work and study, as well as leisure travel for a functional everyday life.

By taking advantage of experiences and reflections on the two solutions, this study aims to contribute to knowledge and strengthen the conditions for innovation within sustainable mobility. The evaluation will particularly focus on issues such as its impact on transit equity and equality, its potential for reducing social and spatial inequalities, and an assess how the needs and preferences of actual users were met. Methods include collection and analysis of documents and other material, interviews with stakeholders and other key persons involved in the two initiatives, and site visits.

Keywords:

On-Demand; equity; transit; sustainability

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T_03 MOBILITY (B) / 1882

The elephant in the room or how to live on Planet A in a post-car age

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Car-oriented planning has not only shaped the built environment but has also profoundly influenced **societal norms**, normalising driving as the default mode of transportation. This pervasive narrative has led to well-documented consequences: sprawling effect, landscape fragmentation caused by urban infrastructure and transport network expansions, social isolation, limited public transport access, road rage, soil consumption, resource degradation, spatial **injustice**, a reinforced consumerist culture, air and noise pollution, and increased contributions to climate change, to cite but a few. The **market** and the powerful lobby of the automotive industry fuelled this narrative, inducing demand for car ownership and prioritising individual and spatially segregated mobility — car users could be considered as “flows of faceless ghostly machines”- rather than active participants in the urban fabric. The automotive sector’s scale fosters state-industry-labour **cooperation**, promoting stability but risking to prioritise industrial and economic stability over transformative mobility policies.

This article explores how to challenge this entrenched narrative in the current political and socio-economic environment, shifting towards more equitable planning paradigms. Since the 1920s-30s, driving and car ubiquity in everyday life for potentially anyone on Earth led to complete car accessibility, higher speeds, longer distances, mobility-oriented planning and comfort over community, walkability and liveability. Yet, this mobility model is neither socially necessary nor inevitable, even if it has often seemed impossible to disrupt. Additionally, the car is not defined merely by its physical properties but by the broader systems of provision and the categories that enable and reinforce its use. These **systems of frames** create specific affordances that shape choices. This is particularly evident in parking policies, for instance, which have often been reactive and operational—addressing issues only when they arise in specific locations —rather than being integrated into a systemic transformation of the urban environment. Since the last century, concepts, theories, and models of human-oriented planning have been developed, leading to the consolidation of measures such as planning standards, pedestrianisation of downtowns, walking and cycling networks, the institutionalisation of the concept of piazza, Limited Traffic Zones (LTZs), regulations on noise and air pollution, and parking management strategies aimed at discouraging car use and gain revenues for maintenance or investment in other transport sectors. Governance improvements facilitated compact urban development, echoing the naturally pedestrian-friendly environments of pre-car historic cities.

However, the growth curve of global car ownership has not yet plateaued; road networks are still expanding, although ownership of internal combustion engine (ICE) vehicles is declining. New spatial challenges, particularly for charging infrastructure, are required by the increasing adoption of electric vehicles (EVs) —battery electric vehicles (BEVs), plug-in hybrid electric vehicles (PHEVs), and hybrid electric vehicles (HEVs) - and all these types have different needs. Sustainable Urban Mobility Plans (SUMP) are adapting to promote walking, cycling, and public transport, but “**path dependence**” continues to reproduce problems originally associated with ICEVs, now translated to EVs. For instance, while EVs eliminate tailpipe emissions, they do not fully address non-exhaust pollutants, and the additional weight of battery packs exacerbates emissions (PM2.5) from tyre and brake wear, an issue that remains largely unregulated. Additionally, governments are offering incentives, e.g. tax breaks, free parking, and LTZ exemptions, increasing their accessibility and maintaining the persistent mono-functionality of roads and streets as car-dominated spaces.

This research contributes to planning discourse by emphasising the critical role of **narratives** in shaping the built environment, moving beyond the rigid notion of physical determinism. It proposes an approach to challenging deeply ingrained assumptions and fostering more equitable systems by shifting societal norms and values. The final section presents **holistic solutions** integrating land-use planning with long-term mobility strategies, supported by robust regulatory frameworks and proactive public engagement.

Keywords:

car dependence; frames; systems thinking; path dependence

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T_03 MOBILITY (B) / 493

Interpretative challenges of car-dependency in peri-urban contexts. An experimental approach and policy implications

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In recent years, the transition towards sustainable and inclusive urban mobility models has emerged as a crucial challenge, especially in territories where car use is deeply rooted to the point of evolving into a dependency. Urban agendas and policy have long sought to rethink the role of private vehicular mobility in daily commutes against such dependency, moving beyond an approach solely based on traffic regulation and infrastructure development. Notably, concepts such as “accessibility by proximity” (Levine et al, 2019), often linked to the X-minute city model, emphasize alternative mobility options, intermodality, and infomobility platforms as pivotal in reducing reliance on private vehicles.

Despite these efforts, a weakness lies in the limited ability of such policies to reshape consolidated habits and mobility practices, particularly in highly car-dependent social and spatial contexts. Among those, peri-urban and low-density areas emerge as territories where car dependency often stems from necessity rather than choice, driven by factors such as insufficient public transport, limited shared mobility options, and dispersed services. Effective interventions against car dependency in these areas require innovative solutions addressing both choice and necessity-driven car use, rooted in a comprehensive understanding of the underlying determinants of car dependency.

However, investigating car dependency involves recognizing it not merely as frequent car use but as a process (Goodwin, 1995) wherein car usage reshapes spatial-temporal practices while generating new ones. This dynamic nature necessitates integrated qualitative and quantitative approaches to examine its determinants, outcomes, and related behaviors. While substantial research has been conducted (e.g., Sierra Muñoz et al., 2024; Fransen & Boussauw, 2022; Baehler & Rérat, 2020), much of it relies on quantitative metrics, overlooking the contextual, multidimensional, and processual aspects of car dependency.

Assuming that car dependency is not merely ‘a combination of high car use, high provision for automobiles, and scattered low-density use’ (Newman and Kenworthy, 1989, p. 124), this paper emphasizes the need to examine this phenomenon by recognizing which practices are enabled by automobile use, in which spatial contexts and under which socio-spatial conditions (Mattioli et al., 2016), which subjective and objective perceptions are related to car use (Jeekel, 2013) and which conditions related to market distortions may reinforce car dependency (Litman, 2014).

The following key research questions emerge: how can the processual features of car dependency in peri-urban areas, shaped by socio-spatial factors, individual habits, and preferences, be effectively addressed? What integrated and scalable approaches can be employed to analyze car dependency’s multidimensional characteristics in peri-urban contexts? How can this analysis inform innovative policies to promote non-car dependent mobility?

These questions are investigated in an Italian research project - RECAP (<https://www.dastu.polimi.it/prin-recap/>). The study, outlined in this paper, presents a transferable mixed-method approach to analyze car dependency determinants, outcomes and practices. The approach is tested in the Bassa Pianura Bergamasca (North Italy), a peri-urban area in Northern Italy marked by high car use due to settlement dispersion following large infrastructural and land use-related transformations. The results of the quantitative analysis of car dependency at the territorial scale combined with an accessibility assessment to daily services, reveal the diversity of situations within the same context, as well as correlations between settlement density, mixed-use development, service location, transportation availability. Building on these insights, the study conducts qualitative investigations at the local scale, involving stakeholders sharing their situated knowledge to discuss the feasibility of contextualized measures to promote intermodality and complementarity between private cars and other mobility options. This integrated methodology presented in the paper enhances understanding of the reasons behind car dependency in specific settlement conditions, offering a replicable framework to inform the design of targeted policy measures towards less car-dependent mobility in peri-urban areas.

Keywords:

Car dependency; Peri-urban areas; Mobility policy

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T_03 MOBILITY (B) / 1251**Queer Mobilities: Experiences of Liveability in Barcelona and Implications for Urban Planning**

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Planning liveable cities involves acknowledging that experiences in the public space are shaped by oppressions and privileges, such as those associated with gender and sexuality. By adopting a feminist and queer perspective, we investigate how sexual diversity affects mobility and, consequently, the access to the city and the well-being of LGBTIQ+ people. Central to this work is the participatory process involving 22 non-binary people and lesbian and bisexual women living in Barcelona.

Through in-depth interviews with people from the LGBTIQ+ community, we asked participants how they feel when walking through the city and what should change for them to feel better. In addition, interviewees drew a ReliefMap, a tool that captures their emotions in different routes and how these feelings intertwine with their unique combination of identities (gender, sexuality, racialisation and age).

Results reveal the emotional journeys of navigating the city as queer, shaped by intersecting oppressions -misogyny, lesbophobia, transphobia or racism- that influence their sense of safety and belonging. Despite experiences of disorientation and fear, participants also identified moments of joy and liberation, particularly when 'straight' paths were disregarded. Their insights suggest concrete pathways to 'queer' cities in order to

build places of greater comfort, visibility and care.

This study, focused on queer wayfinding and place-making, emphasizes the importance of participatory decision-making processes in urban planning. We contribute to the field by understanding of how LGBTIQ+ people navigate cities, often by uncovering new paths and senses of belonging, and propose directions to make their lives more live-able.

Keywords:

Active mobility; LGTBIQ+; intersectionality; urban planning

T_03 MOBILITY (B) / 1212

Exploring children's active commuting to school and associated social inequalities

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Driven mainly by the international decline in walking rates and the recognised health benefits of social and physical activity, research into children's active commuting to and from school has expanded rapidly in recent years. However, the role of parents' backgrounds, socioeconomic conditions, and perceptions of the neighbourhood environment in determining children's active commuting to and from school is not fully understood. We aim to summarise research on determinants and health consequences of children's active commuting to school. We used mixed methods in a sequential approach, starting with an online survey and then interviews with school directors and workshops with parents. The results emphasise the importance of previous cultural and personal experiences, parents' expectations, and their day-to-day lives. Recent social changes, such as housing access, declining birth rates, safety perceptions and increasing after-school activities, may change parental attitudes towards their children's mode of school travel over time. To improve walking to and from school, we believe that new co-creative approaches involving children and parents, stakeholders from health, urban planning and schools are needed to overcome these tendencies and prevent future inequalities.

Keywords:

inclusive mobility; active commuting to school; walkability; parental perceptions

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<https://doi.org/10.1016/j.jth.2020.100837>

T_03 MOBILITY (B) / 1738

Spatial and social justice “on the street” and “beyond the streets”: reflections on Barcelona’s superblocks

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In the context of multiple and overlapping crises at a global level (e.g., ecological and climate change, socioeconomic crises, pandemics, wars), urban space has emerged as a place for experimentation with processes of transformation of city models, of how to live in and move through the city. Many cities have undertaken mobility-related experiments to promote a transition that, by limiting the use of cars in certain areas or neighborhoods, serve to free up and recover public spaces, allocating them to more diversified uses (walking, cycling, etc.) and activities (crossing, passing through, but also meeting and socializing).

Since 2016, Barcelona has also embarked on this path and the municipal government, through the super blocks model (superilles in Catalan, supermanzanas in Spanish), has developed and gradually expanded an experiment of tactical urbanism aimed at reducing traffic in certain neighborhoods of the city by creating zones with preferential pedestrian use. The explicit aim of the project is to recover public space and improve the air quality and health of the population. The super-blocks experiment, which started in the Poble Nou neighborhood and over the years has evolved and been extended to other areas of the city, has triggered opposing reactions and has been the subject of political and recently even legal struggles.

Starting as a theoretical premise from the debates and literatures on spatial justice the right to the city and the concepts of just streets, and considering the super blocks model as an experiment, also political, of constructing a model of mobility and of experiencing public space in a different way, this paper aims to investigate two issues:

First, it analyses the impact “on the street”, of the different versions and practical developments of the superblock model in terms of distributive justice intended as redesigning street spaces to serve all users –walkers, cyclists, public transport, and drivers.

Second, looking “beyond the streets”, it considers the possible side effects of the superblock model with particular attention on housing precarization and gentrification of the areas involved, and on the city as a whole. Through this twofold analysis we suggest that the experiments to build/develop more “just streets” –as the superblocks in Barcelona –should not consider “just the streets” and look beyond the streets to prevent the risks of rising housing costs –and therefore housing precarity –and gentrification.

Keywords:

Just Streets; Superblocks; Gentrification; Housing Precarity; Barcelona

T_03 MOBILITY (B) / 1423

The social impacts of urban sustainable mobility policies, case study of the East Bristol Liveable Neighbourhood (EBLN)

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I am a third-year PhD student at the Centre for Sustainable Planning and Environments, University of the West of England (UWE), currently in the writing-up phase of my research.

This analysis sits at the intersection of mobility justice (Sheller, 2018)- which interrogates who gains or loses mobility privileges- and urban social justice (Marcuse et al., 2009), exposing the processes that exacerbate urban social exclusion under the guise of sustainability.

Using the Capability Approach (CA) (Nussbaum, 2011; Nussbaum and Sen, 1993; Sen, 1984, 1985, 1990, 1993) as a foundational theory, this research links the theoretical debate of the just transition with its empirical application in urban sustainable mobility. Empirically, it frames accessibility as a key capability (Vecchio and Martens, 2021) to look for mobility marginality-the condition of being unable to transform intermediary actions (i.e. transport policies) to individual benefits thus being at the margins of mobility.

As a case study, it examines the social impacts of the East Bristol Liveable Neighborhood (EBLN), an urban mobility scheme aimed at traffic reduction, air quality and driving emissions.

Through the analysis of approx. 85 documents, a Stakeholder Engagement phase and a substantial body of Primary Data generated through a year-long weekly Participant Observation exercise while volunteering at the neighbourhood's Community Centre and the Thematic Analysis of 30 semi-structured interviews (tot. n= 41) with different actors involved, the research contributes to the understanding of social justice in mitigation policies by giving voice to people directly involved and impacted by it, especially socially and economically vulnerable residents. The study creates a narrative of mobility marginality by assessing how the policy impacts different groups of people based on their resources, personal circumstances and consequent accessibility levels defined as the increased/diminished opportunity set available to individuals to achieve their desired functionings.

These findings raise urgent questions relevant to just transition and policymaking, such as the importance of place in decarbonization strategies, the issue of adaptive preferences and mobile commoning as a future sustainable urban transport strategy.

Keywords:

just transition; capability approach; accessibility; urban mobility justice; mobility marginality

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T_03 MOBILITY (B) / 824**Measuring inequalities in accessibility: how does destination choice matter?****Author:** Adam Radzinski¹¹ *Adam Mickiewicz University, Poznań***Corresponding Author:** adam.radzinski@amu.edu.pl

Measuring inequalities in accessibility is a common subject in transport research. Yet, the question of how the choice of destinations affects the results is seldom asked. The paper addresses this issue by providing an overview of existing literature and comparing accessibility to five categories of destinations typically considered in such analyses: education, jobs, healthcare, retail, and green areas. Four Polish second-tier cities — Kraków, Wrocław, Poznań, and Gdańsk — are used as case studies. For each category of destinations, accessibility scores are calculated taking into account three sustainable modes of transport: walking, cycling, and public transport. The scores are then compared to population distributions, and indicators of spatial autocorrelation are used to identify areas of insufficient accessibility. Results suggest that the degree of equity in accessibility distribution varies across categories of destinations. The share of vulnerable residents in low accessibility clusters was higher for retail and green areas than for education, jobs, and healthcare. While the results also vary across the investigated cities, it may be concluded that accessibility was more equitable for some destinations whose distribution relies more on the public sector (i.e., education) than for primarily market-driven destinations (i.e., retail). The proposed method can be useful in identifying areas of socio-economic vulnerability that require improvements in accessibility.

Keywords:

accessibility; equity; sustainable mobility; urban planning; Poland

T_03 MOBILITY (B) / 342**Contextual Behavioural Factors into Active Transport Infrastructure****Author:** Sara Haider¹¹ *University of Sydney***Corresponding Author:** s.haider@sydney.edu.au

Active travel, including walking and cycling for transport, supports healthy, sustainable, and equitable societies. With growing populations, climate crises, and health concerns, active travel aligns with four United Nations Sustainable Development Goals: climate change, health, sustainable cities, and sustainable transport. In car-centric nations, authorities are investing in active transport infrastructure to encourage active travel. Despite these efforts, car usage in much of the developed world remains dominant.

Active travel behavior is shaped by utilitarian, psychological, and social factors, which compete with cars' perceived advantages such as time efficiency, comfort, safety, security, and societal norms. To encourage active travel effectively, infrastructure planning

and design is required to respond to the diverse travel needs and desires of individuals through infrastructure that prioritises context-specific behavioural factors aligned with individual attitudes and behaviours towards active travel.

This research examined how key behavioural drivers influence active travel across varying contexts, focusing on utilitarian factors (time, cost, distance), psychological factors (safety, comfort, security), and social factors (influence of social norms). Understanding these influential drivers helps identify active transport infrastructure attributes that best support behavioural values across different contexts.

Context including demographic and cultural characteristics as well as features of the natural and built environment, were found to affect individual active travel behaviours.

The research is conducted through a statewide survey distributed in New South Wales, Australia—a region characterised by diverse contexts such as remote low-density and highly dense urban areas with demographic diversity. The survey was distributed to 2000 participants with a representative sample split from regional and metropolitan geographical spread, gathered data on active travel patterns, attitudes, infrastructure awareness, user experiences, and preferences for infrastructure to promote uptake. The questionnaire was framed by the behavioural factors of utilitarian, psychological, and social factors that underpin active travel behaviour.

The findings highlighted relationships between contextual environments and active travel behaviour, revealing that different infrastructure solutions are effective depending on the area context. The development of a framework that integrates these contextual behaviour factors into active transport infrastructure design will facilitate place-based infrastructure strategies that optimize active travel adoption, fostering healthier, more sustainable, and equitable communities.

Keywords:

Active Transport; Behaviour; Infrastructure; Urban Planning

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T_03 MOBILITY (B) / 1374

Determinants of individual mobility behaviour: how to influence the modal split of commuting in the Vienna city region

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Sustainable transport is an elementary part of all climate change mitigation strategies. As one of the most prominent examples of climate-neutral efforts, the Green Deal of the European Commission explicitly strives for efficient, safe and environmentally friendly transport and mobility systems, in order to reach the goals of the Paris Agreement 2015. In that context, a research cooperation between the Austrian chamber of labour (AK Wien) and the Vienna University of Technology (TU Wien) was established in order to explore the individual choice of transport modes for daily commuting in the Vienna city region and to provide insights into the determinants and driving forces of the given modal split. On the theoretical base of current literature on mobility behaviour, a big survey

of more than 2000 commuters was set out to assess not only the actual choice of transport mode, but also requirements, limitations and reasons for these individual decisions. The results provide an interesting insight into the role of socio-economic characteristics (e.g. age, sex, education, branch of profession), local conditions (e.g. density, transport infrastructure) and the quality of transportation services (travel costs and efforts) on the decision-making of commuters, how to get to their place of work. Furthermore, the data were used to implement a complex statistical model (Bayesian Structured Additive Regression), which aims at identifying the explanatory variables of the modal split in commuter traffic. For that purpose, realistic travel times of actual commuter relations in 3 transport modes considered (car, public transport, active mobility) had to be calculated by means of a GIS-based multimodal routing system. In that way, it was possible to provide a satisfying empirical base for assessing the influence of different travel times on the individual choice of the preferred transport mode.

Both the empirical analysis and the model results indicate several interesting insights in actual mobility behaviour of people on their way to work. These results can easily be transferred into recommendations for sustainable, energy-saving and climate-friendly transport policies, which could potentially be applied not only in the Vienna region, but also in other metropolitan areas.

Keywords:

modal split; commuter traffic; transport modes

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T_03 MOBILITY (B) / 574

Modeling Access Ergonomics to Daily Life Resources using Sustainable Modes within the Eurométropole de Strasbourg

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Since the 1980s, many cities in Europe, including the Eurométropole de Strasbourg, have implemented policies to reduce transportation and mobility related negative impacts, especially those caused by individual cars. In the Eurométropole de Strasbourg, measures have been introduced to limit car use while promoting sustainable transport. This

includes developing public transportation, enhancing shared and active modes (walking, cycling) usage, and urban planning focused on a “proximity metropolis” model to support sustainable mobility.

Furthermore, the Eurométropole de Strasbourg has restricted motorized mobility, particularly internal combustion engine vehicles, by creating a Low Emission Zone covering its 33 municipalities. The city also supports energy transition, encouraging the adoption of electric vehicles including electric bikes through purchase subsidies.

The central question is how well the Eurométropole de Strasbourg enables its residents to access essential daily-life resources, efficiently, comfortably, and at low cost (financial cost, effort, risk, emissions, energy and time) while using sustainable transport modes. To address this, *spatial ergonomics* (Saint-Gérard, 2002) which studies the capacity for a territory to fulfil the needs of its inhabitants at least costs, and especially its subdomain *access ergonomics* (Hached, 2019) which provides an approach through mobility, offer a relevant analytical framework. This approach assesses accessibility while focusing on its conditions not only regarding travel duration but also considering daily-life resources and infrastructure quality (facilities, safety, comfort, environment) adapted to each transport mode.

The hypothesis is that a high-quality environment helps to promotes sustainable transport, especially for active modes. Mobility behaviors, including route choices, are influenced by safety, comfort, and environmental factors (Piombini, 2013). Access ergonomics integrates these factors into a synthetic access ergonomics score composed of several sub-indicators to identify socio-spatial inequalities in accessing daily resources.

Previous studies (Saint-Gérard et al., 2021) showed significant variability in access across the Eurométropole de Strasbourg; however, they did not consider emerging mobility forms, such as electric vehicles and micromobility. The rise of micromobility and intermodality requires adaptation of these analyses.

Activity-based models are used for evaluating accessibility through a trip completion rate by measuring the proportion of the trips below a certain threshold (Somranath et al., 2025). This approach however does not consider key parts of access ergonomics (safety and convenience of trips).

Our study aims to improve realism and precision in evaluating *access ergonomics*. A new methodology has been developed to overcome limitations from previous works. Multi-agent modeling is used to simulate mobility behaviors based on detailed socio-spatial profiles, considering diverse socio-economic and demographic data at a fine scale (200 × 200 m). These profiles are fed to a geographic information system to assess access conditions using various transport modes (active, shared, motorized, intermodal).

Trips are analyzed within activity chains, where each activity (work, leisure, services) can be interconnected. The model also considers resource availability and transport service schedules, identifying potential inconsistencies that impact *access ergonomics*.

The study relies on open geographic and statistical data covering the Eurométropole de Strasbourg. The synthetic population is generated using eqasim (Hörl and Balac, 2021), and user profiles are adjusted based on socio-demographic data and mobility surveys.

The goal is also to develop a tool which will generate an *access ergonomics* score for each inhabited grid square, providing a detailed and comprehensive view of socio-spatial inequalities. The synthetic score will be broken down into sub-indicators (travel time, safety, comfort, etc.) and transport modes, enabling comparison across the territory. These results will help to identify actions for improving *access ergonomics* and for reducing inequalities.

In further studies, the developed tool will be improved by considering the aspect of energy transition, especially to take its consequences into account on the *access ergonomics*.

Keywords:

access ergonomics; sustainable mobility; multi-agent models; socio-spatial inequalities; decision support

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T_03 MOBILITY (B) / 1572

Urban mobility lifestyles: exploring definitions, metrics, and emerging research directions

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The importance of lifestyle in predicting individual and groups of individuals' behaviours has been widely recognized across various fields, including transport studies, urban planning, and public health. Research on mobility lifestyles aims to inform interventions and policies that promote sustainable and health-conscious transportation choices in cities. Lifestyles shape mobility and transportation routines, influencing physical activity levels and the prevalence of certain health conditions. However, despite its significance, there is no formally agreed-upon definition, theoretical framework, or standardized methodology for measuring mobility lifestyles or policies/interventions that can encourage more sustainable/healthy lifestyles.

This study conducts a systematic literature review to examine the evolution of mobility lifestyle research, identifying key trends in definitions, measurement approaches, and research themes. The review highlights a shift from traditional transport mode choice analysis to a more holistic approach integrating underlying sociocultural, behavioural and psychological dimensions. Additionally, there is growing recognition of how mobility lifestyles intersect with broader issues of social equity and environmental justice including individual, social, and environmental barriers. Methodologically, studies have moved beyond simple segmentation approaches with sociodemographic data to include environmental and travel attitudes and residential neighbourhood preferences, the role of constraints, and big data analytics (to identify activity patterns). Despite these advancements, challenges remain in establishing a unified conceptual framework and integrating measurement techniques across different fields. This review identifies critical gaps in mobility lifestyle research and conceptualisation and calls for more interdisciplinary approaches that integrate environmental psychology, environmental justice,

advancements in mobility data analytics, and co-creative approaches is research and policy/intervention design to understand lifestyle and foster equitable and sustainable urban mobility transitions.

Keywords:

lifestyle, behaviour change, travel behaviour, mobility transitions, environmental psychology, justice

T_03 MOBILITY (B) / 1796

Assessing the Integration of Spatial and Strategic Plans in Sustainable Urban Mobility Planning: Insights from SUMP İzmir

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Sustainable Urban Mobility Planning (SUMP) is a comprehensive, data-driven approach aimed at improving urban transport systems through stakeholder engagement, evidence-based decision-making, and strategic scenario development. In Türkiye, SUMP projects initiated in cities of İzmir, Ankara, Kocaeli, and İstanbul, which not only included new modeling approaches, but also a thorough legislative investigation. İzmir SUMP projects stands out due to its pioneering activity-based modeling approach, and a detailed examination of policy documents and planning instruments to ensure a strong analytical foundation. This study, conducted as a part of the “SUMP İzmir Project”, evaluates the coherence between İzmir’s spatial and strategic plans and its sustainable urban mobility objectives, using the CIVITAS intervention areas as an assessment framework.

The methodology involves a detailed content analysis of the policies, and spatial and strategic plans that form the basis of İzmir’s sustainable urban mobility planning. These plans were evaluated for their alignment with 12 CIVITAS intervention areas, including active mobility, public transport, demand management, smart mobility, logistics, and environmental sustainability, as well as İzmir-specific priorities such as coastal planning and port integration. The results are presented in tables and schemes.

The findings reveal significant gaps in İzmir’s spatial planning concerning sustainable urban mobility. The findings from spatial plans can be summarized as:

- The 1/100,000 Environmental Regulation Plan (2014) acknowledges the connection between transport and urban expansion but lacks a structured approach to demand management and spatial planning that supports sustainable mobility.
- The 1/25,000 Metropolitan Environmental Plan (2012) was developed based on the Transportation Master Plan (2009) but fails to incorporate key aspects such as inclusive planning, active mobility, demand management, and urban space management. A limitation of this study is the lack of access to plans at the 1/1000 and 1/5,000 scales.
- Due to the existing planning paradigm, these numerous plans do not cover CIVITAS intervention areas as comprehensively as higher-level plans.

On the other hand, İzmir’s strategic planning efforts show stronger commitments to sustainable mobility. The findings are;

- The IMM Strategic Plan (2020-2024) promotes clean energy vehicles, cycling infrastructure, and public transport integration.

- The İzmir Green City Action Plan (GCAP, 2020) focuses on low-emission transport, sustainable logistics, and energy efficiency, while the İzmir Transportation Master Plan (TMP 2030, 2015) emphasizes rail network expansion and reduced car dependency.
 - Supporting action plans such as the Bicycle and Pedestrian Action Plan (2018), Parking Action Plan (2019), and Marine Transport Integration Plan (2019) reinforce multimodal transport solutions.
 - The İzmir Logistics Plan (LOPI, 2022) and the Sustainable Logistics Plan for the Historic City Center (2030) contribute to freight and last-mile delivery strategies.
- Additionally, climate-focused policies, including the İzmir Sustainable Energy and Climate Action Plan and the Climate Change Resilient Cities Framework (2019), provide long-term sustainability, and climate adaptation measures.

Even with these advancements, numerous challenges continue to exist:

- Many strategic plans function independently, resulting in fragmented implementation.
- Furthermore, there is a disconnect between national regulations promoting sustainable mobility and local implementation efforts.
- Public engagement mechanisms need further enhancement to better balance citizen participation with varying mobility needs.

In conclusion, İzmir's urban mobility framework reflects a strong policy commitment to sustainability; however, spatial planning remains misaligned with strategic transport objectives.

The study concludes with recommendations that may also contribute to the development of the SUMP methodology:

- Enhanced policy coordination is needed to align spatial planning with transport strategies effectively.
- Existing land-use and spatial plans at lower levels, along with population projections, are necessary to accurately capture current and future socio-demographic and spatial dynamics.
- The adoption of decision-support systems should be prioritized to inform policy and planning.

Keywords:

SUMP; Spatial Planning; Strategic Planning; CIVITAS; İzmir

T.03 MOBILITY (0) / 801

Planning for Play-Friendly City: Global Narratives and Local Interpretations in the Context of Istanbul

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The concept of a “play-friendly city” has emerged as a significant focus within contemporary urban planning and policy discourse, reflecting an increasing recognition of the pivotal role of play in fostering children’s development and overall well-being. While the promotion of spaces that encourage play and physical activity for children has gained broad global endorsement, the practical realization of play-friendly cities calls for a holistic approach, attentive to the specificities of local contexts, needs, and resource constraints. This paper investigates the global frameworks and narratives that guide cities in enhancing play and recreation opportunities for children. It analyzes key principles, shared objectives, and conceptual approaches, while also examining the diverse ways

these ideas are interpreted and applied across local contexts. The study puts an emphasis on the specific needs and conditions of different cities in the planning of playful urban environments.

The first section of the paper explores the theoretical and practical dimensions of planning for children and play. Child-focused urban planning entails the intentional integration of environments that foster physical activity, social engagement, creativity, and cognitive growth. Such efforts extend beyond the creation of parks and playgrounds to encompass a holistic, multifaceted approach that incorporates local services, fosters community cohesion, and strengthens the relationship between citizens and public spaces. The overarching goal of planning for play-friendly cities is to cultivate urban communities that prioritize children's needs, ensuring access to spaces conducive to healthy development, encompassing both structured and unstructured play, and supporting physical and mental well-being. However, achieving this vision requires cities to navigate the complexities of their unique socio-economic, cultural, environmental, and political conditions.

The second section addresses the global narratives and policy frameworks that direct the development of child-friendly urban environments. Specifically, the analysis highlights international policy frameworks that emphasize children's rights in urban contexts, with a particular focus on the right to play as a fundamental necessity. These frameworks advocate for urban spaces that enhance children's growth, safety, and well-being. Furthermore, the paper examines how different cities interpret and adapt global narratives of play to meet the specific needs of their populations. By analyzing local play plans, this section identifies common objectives, strategies, and actions, offering insights into the shared and context-specific approaches adopted by cities striving to become play-friendly.

The final section focuses on Istanbul's efforts to position itself as a "playable city", presenting an evaluative case study of the city's initiatives to implement a play-focused urban planning framework. The analysis highlights the commonalities and divergences between Istanbul's strategies and those employed by other cities, while examining the distinct socio-cultural and spatial characteristics that shape Istanbul's approach to planning for play. By situating Istanbul's experience within the broader discourse on play-friendly cities, this section underscores the interplay between global ideals and localized practices.

This paper, paralleled within an ongoing doctoral research, offers a comprehensive analysis of planning for play-friendly cities. By synthesizing insights from global narratives and local practices, it provides a deeper understanding of how urban environments can be planned, designed and managed to support the development of children, promote inclusive, vibrant, and sustainable urban spaces and communities. The study lays the groundwork for future research aimed at developing a decision-making model to assist local governments and communities in their efforts to create play-friendly cities.

Keywords:

play-friendly city; urban development; local adaptation; strategic planning; decision-making

T_03 MOBILITY (0) / 235

Optimisation of non-motorised facilities in urban fringe sheltered housing areas: Transport Accessibility and Equity Enhancement Based on Supply and Demand Analysis

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As affordable housing expands to the urban fringe, remote locations and inadequate public transport support make it difficult for residents to travel. With long commuting

distances and sparse station distribution, non-motorised vehicles have become the main means of connecting to the metro or bus due to their economy and flexibility. However, the existing parking facilities are not planned to meet the demand, and the imbalance between supply and demand limits the travelling efficiency and quality of life, and increases the inequality in the distribution of transport resources.

The study focuses on the optimisation of transport accessibility and non-motorised facilities in urban fringe sheltered housing areas, exploring the reasons for the imbalance between the supply and demand of facilities and proposing optimisation strategies. Selecting Xi'an City's guaranteed housing projects as the research object, the study collects 473 valid samples by using a combination of resident travel surveys, typical case analysis and supply-demand relationship research methods, and analyses the residents' travel behaviours in combination with a Logit model. The study found that the non-motorised demand in the sheltered housing area is significantly higher than in other areas due to commuting distance and household income, with an average demand of 1.8 times the existing capacity. However, the construction of non-motorised parking facilities is lagging behind, making it difficult to meet the actual demand; at the same time, the utilisation rate of motorised parking spaces is less than 70%, and some of the resources remain idle for a long period of time, further exacerbating the inequity in the distribution of transport resources. This imbalance between supply and demand reveals the travelling preferences of low-income groups that are more inclined to rely on non-motorised vehicles and their intrinsic connection with the living radius.

To address these issues, the study proposes an optimisation strategy with the dual objectives of 'livability and equity': first, dynamically adjusting the number and layout of non-motorised parking facilities, with a focus on covering high-demand areas around public transport stations; second, introducing an intelligent management system to improve the efficiency of facility utilisation and management accuracy; third, strengthening the construction of public transport in remote areas to shorten residents' commuting time; and third, strengthening the development of public transport in remote areas to improve residents' living conditions. Third, strengthening the construction of public transport in remote areas to shorten the commuting time of residents; fourth, promoting policy support to transform some unused motor vehicle parking spaces into non-motorised parking facilities, and promoting the fair distribution of transport resources.

This study provides theoretical support and practical guidance for the planning of non-motorised facilities in urban fringe sheltered housing areas, and promotes the enhancement of transport equity and livability. The research results also provide a reference for housing and transport planning in other urban fringe areas, and have high promotion value. By optimising non-motorised facilities, this study provides feasible policy recommendations for achieving more equitable and livable urban fringe communities.

Keywords:

Secure housing, Urban fringe, Non-motorised facilities, Transport equity

T_03 MOBILITY (0) / 1245

The Sustainability of Proximity: A Literature Review of the 15-Minute City

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The 15-minute city concept, pioneered by Carlos Moreno, aims to revolutionize urban sustainability by reducing dependency on private vehicles and promoting public transport, active and shared mobility. This paper evaluates the concept's effectiveness in reducing GHG emissions, improving air quality, and decreasing urban sprawl. Further,

it examines the concept's impact on social inclusion for children, students, the elderly, disabled, and non-drivers, and explores the model's implementation dynamics across diverse urban contexts. A systematic literature review was employed, analysing 55 relevant publications sourced from Scopus and Science Direct, using the PRISMA protocol. The papers were published between 2020 to 2024. The review highlighted reduction in CO2 emissions and vehicular usage in cities like Paris and Barcelona, attributing these reductions to enhanced cycling infrastructure, public transport networks, and strategic urban restructuring. The concept also addresses social equity by providing equitable access to services, though challenges such as the risk of gentrification of marginalised populations were noted. Furthermore, the integration of public and shared mobility solutions showed promising results in reducing car dependency and promoting sustainable urban living. However, the review identified specific gaps in the literature, including the long-term sustainability of emission reductions, socio-economic impacts of gentrification, effectiveness of shared mobility within the model, less research in resource constrained settings and the role of urban cargo transport within the 15-minute city framework. These gaps necessitate further research to understand the model's successful adaptation and implementation across diverse urban contexts. This paper serves as a reference for urban planners, policymakers, and researchers, offering evidence-based strategies and policy recommendations to advance sustainable urban development through the 15-minute city concept.

Keywords:

15-minute cities; sustainable mobility; environmental sustainability; social inclusion

T_03 MOBILITY (0) / 1333

Sustainable Mobility in Coastal Regions: Challenges and Solutions from the MERCIE Project

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The mobility crisis highlights the need to transition toward environmentally sustainable and socially equitable transportation systems. Over the past century, car-centric environments (Urry, 2004) perpetuated the illusion of accessibility while contributing to urban sprawl, resource consumption, and soil depletion. Dependency on automobiles exacerbates pollution while widening social inequalities (Sheller, 2018). Although it is recognized as a systemic problem, its impact on urban form remains a critical concern for planners (Boussauw et al. 2023).

Coastal and city-port regions, where global and local flows interact (Hein et al., 2023) face unique challenges that further complicate mobility systems. Water and land transport's interplay is often poorly integrated, while territorial morphologies heighten climate and hydrogeological risks (IPCC, 2021). These areas suffer from ecological vulnerabilities: biodiversity loss, water pollution, high-density residential and tourist settlements pressure. These factors contribute to heightened air pollution, unequal access to services, and degraded public spaces.

To address these challenges, the MERCIE project—Eco-Sustainable Models for Collaborative, Integrated, and Inclusive Urban Regeneration of the Land-Sea System—aims to foster sustainable mobility in coastal areas. Coordinated by the Department of

Architecture (DiARC) of the “Federico II” University of Naples and funded by the iNEST Innovation Ecosystem (NEXTGenerationEU), MERCIE identifies three goals: protect and restore biodiversity and ecosystems, ensure equitable access to territorial resources, and improve quality of life for all.

To achieve these goals, it develops a Collaborative Spatial Decision Support System (C-SDSS) demo, to facilitate decision-making processes for local authorities and public entities, supporting the sustainable transformation of territories through targeted interventions. By leveraging quanti-qualitative spatial data (citizen-science approach), the platform enables users to co-design scenarios, exploring impacts of different decisions on mobility and land-sea interface regeneration (Geertman et al., 2013). Quantitative data are derived from spatial analyses, official databases, mapping, and statistical surveys on modal share, user flows and travel times. Qualitative data, meanwhile, are developed using psychometric constructs to assess factors such as attitudes toward active mobility, the influence of perceived risk on transport choices, and the role of heritage in shaping mobility patterns. These qualitative insights are further enriched through co-exploration activities in Urban Living Lab (ULL) workshops (JPI Urban Europe, 2015), also with the involvement of local public administrations and transport management. Then, a co-design phase ensures that diverse stakeholder perspectives are integrated into the decision-making process.

MERCIE focuses on the case study of Campi Flegrei, the coastal western part of the Metropolitan Area of Naples, South Italy. This area presents a compelling case study due to its rich natural and cultural heritage, its exposure to environmental risks (most recently the bradyseism crisis which came to worldwide attention), and its dense urbanization. Campi Flegrei features a variety of hydrographical systems (sea, lakes, rivers), as well as diverse coastal typologies. It also serves as a nexus of multiple transport modes: public and private systems, railways, and waterborne routes to the islands of Ischia and Procida. The region's complexity makes it ideal for testing the methodology and exploring its potential for sustainable mobility planning.

This paper presents the preliminary findings of MERCIE and discusses the challenges associated with transferring the proposed methodology to other coastal areas. While the case study highlights the potential of the C-SDSS to address complex mobility issues in sustainable and inclusive manner, its broader applicability will be useful in knowledge and technological transfer to account for the unique characteristics of different coastal regions, after due validation and site-specific adaptation.

By addressing mobility through an integrated, collaborative, and mixed data-driven approach, the MERCIE project underscores the transformative potential of sustainable transportation systems in coastal regions to support multi-stakeholders' decision making processes.

Keywords:

decision-making, land-sea system, citizen science

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T_03 MOBILITY (0) / 1816

Big Data Analysis of Pedestrian traffic in Boulevards vs. Other City Streets

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Boulevards are widely recognized as urban features that encourage pedestrian movement due to their walkable design. However, despite their perceived role as pedestrian corridors, empirical evidence supporting this notion through actual pedestrian count data remains scarce. This study addresses this gap by leveraging mobile app-derived pedestrian data collected over time in Tel Aviv, Israel. The research examines pedestrian volumes in boulevards compared to other streets, considering temporal variations. The analysis is conducted at multiple spatial scales: city-wide analysis, neighbourhood-level analysis, and a detailed street-segment evaluation. Findings indicate that, at the city-scale, boulevards experience higher pedestrian volumes on weekdays, while weekend patterns show no significant differences across most seasons. The temporal role of boulevards within their immediate context varies; some consistently function as major pedestrian pathways within their neighbourhood, whereas others do so only during specific times, such as seasonal or weekly variations. In contrast, certain boulevards exhibit pedestrian volumes similar to or lower than adjacent streets. An examination of street attributes in boulevards with positive vs. negative association with walking compared to other streets reveals that physical characteristic and network centrality measures have a stronger association with street-level pedestrian volumes than land-use configurations. The study's insights highlight boulevards' dynamic role and the need for urban planning strategies adapted to local conditions and scales.

Keywords:

boulevards; walking; pedestrian movement; mobile-app data; tempo-spatial analysis

T_03 MOBILITY (0) / 855

Proxies for walkable urban design - three case studies in Lodz, Poland

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The ongoing debate on urban walkability features three primary perspectives (Forsyth, 2015). The first approach focuses on critical conditions of pedestrian environments, including accessibility and connectivity (Alfonzo, 2005; Moudon et al., 2006; Ewing & Cervero, 2010), traversability (Dovey & Pafka, 2020), compactness, safety (Buehler & Pucher, 2017; Lo, 2009) and inviting environment (Southworth, 2005; Moudon et al., 2006). The second group of research focuses on walkability goals, which are health, liveable and social environment or resilience. The third approach, particularly relevant to urban design purposes, aims to define proxies for normative design applications. The characteristics and scale of the environment, along with the research objectives and analytical methods, determine the specific features that researchers choose. Various contextual factors make establishing a universal standard for design attributes that facilitate walkability impossible. The actual collection of features enabling walking depends on the type of environment. The characteristic sets usually differ for central city areas, surrounding residential multifamily estates, and peri-urban areas.

In the current study, we aim to compare the discrepant conditions to define sets of features specific to the three types of urban contexts. To do this, we conduct in-depth analyses of walkability in three neighbourhoods in Łódź, Poland: central mix-use urban location, peripheral multifamily residential and peri-urban historical village.

Keywords:

walkability, public space, urban design

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T_03 MOBILITY (O) / 503

Evaluation and Optimization of Public Service Facility Accessibility in Planning Future Community Living Circles: A Case Study of Yangpu District, Shanghai, China

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Contemporary urban development is gradually shifting from “incremental expansion” to a high-quality development model characterized by “stock optimization” and “people-centered” approaches. The concept of the “Future Community Living Circle” has garnered widespread attention, focusing on meeting residents’ diverse and personalized daily needs and enhancing life satisfaction through the meticulous provision of public service facilities. However, traditional residential planning based on the “per thousand population” metric often exhibits issues such as single functionality, facility shortages, and extensive spatial layouts. As urban social spatial differentiation and social segregation intensify, the quantity and quality of community public service provision struggle to meet residents’ demands for equity and satisfaction, notably reflected in significant disparities in accessibility.

Against this backdrop, the evaluation and optimization of public service accessibility for “Future Community Living Circles” have become critical topics. Internationally, the concept of accessibility encompasses rights accessibility, opportunity accessibility, spatial accessibility, and usage accessibility, with research expanding from “health care accessibility” to “social public service accessibility.” Methodologically, studies frequently employ the Two-Step Floating Catchment Area (2SFCA) method, questionnaire-based satis-

faction surveys, and the 5A framework, alongside the rise of interdisciplinary research that emphasizes the integrated planning of facility layouts from regional, spatial, and people-centered perspectives. However, existing research predominantly focuses on the quantitative supply of public service facilities and the measurement of accessibility, insufficiently exploring whether facility configurations align with residents' daily activity trajectories and travel habits, as well as lacking classification studies on the differentiated needs of various population groups (e.g., different age groups, social strata). Consequently, when assessing whether public service provision accurately meets residents' needs, it is challenging to comprehensively represent the fairness of public service facilities across different groups in terms of activity timing, travel modes, and usage preferences.

Addressing these gaps, this study takes Yangpu District in Shanghai, China, as a case study to evaluate and optimize the accessibility of public service facilities within the "Future Community Living Circle" framework. Incorporating a "place-based and people-centered" research perspective, the study utilizes Mobile Signaling Data, Points of Interest (POI) data, and survey data to construct a comprehensive, multidimensional accessibility analysis framework encompassing the entire "supply-service-feedback" process. In designing the evaluation indicator system, this research considers the usability dimension—whether the number of facilities matches the population size of different age groups—and the accessibility dimension—whether facility layouts facilitate convenient travel for various age groups. Additionally, the adaptability dimension incorporates the alignment with spatiotemporal behavioral characteristics and residents' satisfaction. Based on these dimensions, the study synthesizes the accessibility levels of each research unit, aiming to precisely assess the alignment between public service provision and the needs of residents across different age groups and to propose optimization strategies.

The findings reveal that, from a "people-centered" perspective, different age groups exhibit significant variations in facility needs, manifested in aspects such as facility operation and maintenance, types, and functionalities. From a "place-based" perspective, uneven spatial distribution of facilities leads to disparities in quantity, location, and quality. Integrating the comprehensive accessibility analysis, this study establishes an "identify-optimize-enhance" system to recognize different regional types and propose targeted optimization strategies. These strategies aim to precisely match public service facilities with residents' needs, enhance overall accessibility, and promote the high-quality development of "Future Community Living Circles."

Keywords:

Public Service Accessibility;Future Community Living Circles;High-Quality Urban Development;People-Centered Planning

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T_03 MOBILITY (0) / 501

Multiple intra- and inter-city rail-based services in India

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The study investigates how do the multiple modes of intra- and inter-city rail-based services (in India) take safety, green, cleanliness, and inclusivity of public transports into consideration through its planning and design and to what extent these objectives are met. Technical, financial and institutional perspectives are considered. The study also asks how these modes contribute to public health (air pollution, contagious disease), climate change (mitigation, adaptation and resilience), pandemics (social distance, hygiene) and other disasters.

The indicators are as follows including the hard and soft infrastructures, in terms of planning, implementation and maintenance:

- Safety: Speed control, Injury, Crash, sexual safety for women, Safety inside the vehicles and at the stations
- Green: Cleaner form of fuel including the use of renewable energy
- Cleanliness: Pandemic driven factors like social distance, hygiene, both inside the vehicles and at the stations
- Inclusivity: SDG5 and SDG11, for all genders, age groups, including people with special needs, taking individual need into consideration.

Multiple public transport modes that are taken into consideration are Intra-city metro rail, Electric intercity rail (e.g. Shatabdi Express- poor peoples' infrastructure), Semi high-speed rail (HSR) (e.g. Vande Bharat), Double decker rail, Delhi-Meerut Regional Rapid Transit System (Namo Bharat), and Hydrogen train (1200 HP). The study will use methods such as document analysis, semi-structured interviews, media report analysis and survey. In Design guidelines/ Document analysis, one report from each type; supported by semi-structured interviews with designer and/or planners, with construction companies and operators on procurement side, with users on benefits reaped side. In media report analysis, recent media reports will be studied on each type for a period of six months (considering these are very new kind of projects mostly under construction). If possible, some surveys will be carried out amongst users.

T_03 MOBILITY (0) / 420

Exploring Functional Configuration in European Station Areas Based on Multi-Scale Accessibility Quantification

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With the rapid development of global transportation infrastructure, station areas have become critical nodes in multi-scale transportation networks. However, research on the impact of multi-scale accessibility on functional configuration and development intensity in station areas remains insufficient. This study employs multi-centrality analysis to quantify the positional characteristics of station areas within regional railways, metropolitan railways, urban transit, and urban road networks. Using the Vlinder Model illustrates the hierarchical node-place characteristics of 18 European station areas. Regression analysis is conducted to reveal the mechanisms by which multi-scale accessibility features influence the functional configuration and development intensity of station areas. The findings indicate that macro-accessibility represented by regional rail networks has the most significant impact on functional configuration, while micro-accessibility represented by urban road networks has the greatest influence on development intensity. This research provides new theoretical insights and empirical support for the planning and development of station areas.

Keywords:

Station areas; multi-scale accessibility; multi-centrality analysis; node-place model

T_03 MOBILITY (0) / 502

An Exploration of Route Synergy between Attractions in Xi'an's Main Urban Area Based on the Node-Place Model

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The People's Republic of China is currently experiencing a period of high-quality, intensive urban development. It is imperative that the relationship between the transport value and tourism value of routes between attractions is given full consideration in order to ensure the efficient use of tourism resources. Xi'an, the capital city with the longest history, the largest number of dynasties, and the greatest influence in Chinese history, possesses a very high historical and cultural status and rich cultural heritage, and attracts a large number of domestic and foreign tourists to and from the city every year. This paper selects 120 public transport link routes between 15 attractions of the 4A standard in the primary urban area of Xi'an City as the object of study. It employs six indicators: attraction density, featured shop density, and the number of travelogues published on travel platforms concerning visitor experience on the ArcGIS platform. It also employs road network density, bus and metro station density, density, and density of time-consuming public transport between attractions of road connectivity to carry out the analysis of the least resistance, and quantifies them after the Max-min standardised processing, the establishment of node-place model and further analysis of the correlation between the traffic value of the line between the attractions and the tourism value of the attractions, to evaluate the development status of each line. The results of the study demonstrate a phenomenon of non-synergistic development of each route, with the traffic and tourism development of the scenic spot divided into four states: balance, subordination, pressure and imbalance, with the number ratio of 8:1:1:5. For each of these states, the study puts forward a corresponding set of differentiated development strategies. In the case of the 'balance' state, the strategy is to maintain the coordinated development of the same increase and decrease in value. In the 'subordination' state, the strategy is to improve the traffic and tourism facilities. In the 'pressure' state, the strategy is to optimise the balance between traffic diversion and tourism carrying capacity. In the 'imbalance' state, the strategy is to optimise the value structure of the scenic spot. The overarching aim of the study is to integrate transport and tourism facilities in the city. The study provides a foundation for integrating the city's development in transport and tourism, and for enhancing the organisation of public transport between scenic areas.

Keywords:

Node-place model; least resistance model; visitor demand; bus routes; synergy

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Track 4 | GOVERNANCE

T_04 GOVERNANCE (A) / 1456

Hydraulic and regional planification in the Tigris and Euphrates basin : a complicated process facing geopolitical constraints

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The basin of these two rivers, tributary to the Persian Gulf through the Shatt el-Arab, is one of the three large fluvial systems along the « arid diagonal » of the Ancient World, between those of Nile and Indus. They all allowed massive transfer of water towards arid plains and thus, together with China, the development of the oldest states. After a quite long and eventful history, this hydrographic basin has been divided between four states by the treaty of Lausanne (1922) : Turkey, Iran, Syria and Iraq, soon after the discovery of oil-fields.

As Turkey and Iran control all the upstream mountainous part of the basin, they could seem to have a dominant position, but the renewal of hydraulic structures has begun downstream, firstly by regulation dams in Lower Iraq (Hindiya on Euphrates 1918, Kut on Tigris in 1939). Then every country has developed its own multipurpose regional planification, such as the Dez Irrigation Project promoted by the Shâh of Iran inspired by the example of Tennessee Valley Authority, or the Tabqa dam built on Mid-Euphrates course by Hafez el-Assad with the help of USSR. The latter included a geopolitical objective : the government tried to transfer the inhabitants of flooded villages towards new settlements along the north-east frontier in order to create an « Arabian belt » between Kurdish populations on both sides of it, with a limited result.

The most ambitious project was then set by Turkey on the upstream course of both rivers since 1977, the South-East Anatoly Project (Güneydoğu Anadolu Projesi = GAP) : a program of 22 dams would allow the irrigation of 1 800 000 ha, the electrification of settlements and industries, the development of major regional cities and a better integration of Kurdish population, just at the time when the revolt of the Workers' Party of Kurdistan (PKK) began. This program included also many preventive archaeological excavations.

The four governments have thus led almost independently their own hydraulic and regional planification programs, in spite of a few attempts to coordination, such as the 1980 Turkey-Iraq protocol of cooperation, extended to Syria in 1983. The latter used different means of pression to obtain in 1987 a minimum flow of 500 m³/s. during the filling of the Atatürk reservoir dam. Another protocol shared the water received from Turkey : 42 % for Syria and 58 % for Iraq.

A last episode brought a severe alteration to perspectives of cooperation : the proclamation of an « Islamic State in Iraq and Levant », alias Daesh, in april 2013 and the auto-proclamation of Abu Bakr al-Baghdadi as Caliph in june 2014 in Mossul, creating thus a « Caliphate of the two Rivers » between its metropolis Mossul on Tigris and its capital in Raqqa on Euphrates. It was gradually recovered until 2019, but the fall of Bashar el-Assad in december 2024 has left a situation of instability threatening all the planification processes in this region.

T_04 GOVERNANCE (A) / 341

Cross-Scale Transactions and Multi-Level Governance on Spatial Gains of Commons: A Comparative Study from Türkiye

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Crises and conflicts at different spatial scales have some planetary consequences. Interventions on commons spaces (state or private sector) have increased with the acceleration of privatization policies in 2008, and debates on the commons theory have re-entered the agenda. The struggles on the commons offer a new perspective of space and a new ontology of politicization in the creation of this new path as an alternative. Constructing alternative multi-scale governance models can be a solution for spatial conflicts and crises emerging from planetary urbanisation (Brenner and Schmid, 2014). Therefore the most important pathway to create innovative solutions for spatial crisis is representing roles of different actors at different scales on the processes of spatial and political gains achieved through social movements. This study examines the multilevel governance and (upward and downward) scaling of on the commons (urban, systems and natural) by comparing different cases from Türkiye after 2008 crisis and afterward. Therefore, firstly a media search was carried out between 2008 and 2023 in digital newspaper archives. Different perspectives (liberal, right-wing, left-wing) were included in scanning newspapers and keywords such as “protest, struggle, urban movement and environmental action” and synonyms like “resistance, action, activism” were searched for defining our cases. As a consequence, the scans have led to several successful and influential movements that have shaped public sentiment. These include: Validebağ Grove; Kazdağları; Çeşme Tourism Project; Gerze Thermal Power Plant; Düzce Hope Houses Cooperative; Alpu Coal Thermal Power Plant; and BÜKOOP Consumer Cooperative’s Co-operative Movement for the spatiality of food. In total, 125 in-depth interviews were conducted with locals, experts (planners, lawyers, academics, architects, doctors, engineers), NGOs (local, national, regional, global) and local governments involved in and supporting these movements between 24 April and 28 May 2024. The data were analysed by using an interpretive approach.

Findings on our cases have shown that the movements are firstly initiated by local level actors, then by national actors supporting throughout the spatial gain process. At the local scale, local people, local NGOs, and local governments (such as provincial-district municipalities and village-neighborhood heads) are typically considered the primary drivers of social struggle. At the national level, the support of professional chambers and national NGOs are particularly prevalent. An exception, the social movement in Kazdağları emerged from a regional actor’s opposition to long-standing mining activities in the region, underscoring a distinctive down-ward scaling with local NGO’s and up-ward scaling with Global NGO’s as a case for multi-level scaling. In instances where local government support was found to be robust, such as in Gerze and Alpu, success was attained more expeditiously. While up-ward scaling was observed in these areas, gains were also made, and the presence of global actors during and post-gains underscores the interplay between up-ward and down-ward scaling across multiple levels. The achievements in the cases of Validebağ, BÜKOOP, Düzce, and Çeşme show a more bottom-up scaling. Considering the views of the actors in these spaces where gains have been made, it has been determined that the interaction between different levels of scales is much higher today, and therefore shows a need for multi-level forms of governance. The main success factor of these movements, which created a new alternative to planetary urbanization processes, is that they reclaimed and shared space through cross-scale interactions and multi-level governance.

Keywords:

Multi-level Governance, scaling, cross-scale interaction, commons

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T_04 GOVERNANCE (A) / 358

Transnational Knowledge Flow: Evidence from Chinese Planning Scholars’ Involvement in International Conferences

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The transnational flow of planning knowledge has gradually become a research hotspot since the late 20th century against the trends of the globalization of planning and EU integration. Various interdisciplinary terms have been used to describe this phenomenon, such as “cross-national learning” and “policy mobilization” in politics study, and “knowledge flow” in management study. Some findings focus on the actors and their activities involved in the transnational knowledge flow. It is specifically highlighted that planning scholars, as the main actors and most direct participants, often disseminate their planning knowledge through academic activities like conferences, lectures, exhibitions, and competitions.

There has been an increase in terms of the number of scholars and the degree of involvement in international academic activities among Chinese planning scholars since China proposed the “Belt and Road” initiative in 2013. Attending international conferences is one of the key academic activities that effectively promotes the transnational planning knowledge flow. Against this backdrop, our research examines Chinese planning scholars’ involvement in international conferences, aiming at exploring the content and influential factors of transnational knowledge flow. Employing data crawling and natural language processing techniques, we collect and analyze two types of data. 1) A mandatory requirement was released by the Chinese Ministry of Education at the end of 2015, entitled “Information Disclosure on Temporary Official Overseas Trips”, which stipulated that an official announcement should be released online on each international academic activity made by Chinese scholars. In terms of this requirement, we search the websites of universities with urban planning programs to gather data on scholars’ attendance in international conferences. 2) We search for keywords in the Web of Science, specifically the Conference Proceedings Citation Index, to collect international conference papers published by Chinese planning scholars between 2016 and 2024.

Based on the data above, our research explores the content of knowledge dissemination, its regional distribution trends, and the influential factors during scholars’ involvement in conferences. The data analysis shows that Chinese scholars disseminate planning knowledge on many topics or issues, including natural resource management, rural governance, regional development planning, digital city construction, and cultural heritage preservation, among others. Furthermore, the transnational knowledge flow has clear regional characteristics: neighboring countries in the Asia-Pacific region are the primary areas for knowledge dissemination, followed by the United States and Northwestern Europe as the secondary regions. In addition, factors such as planning formulation, changes in national development strategies, shifts in academic trends, and economic changes have all impacted the transnational knowledge flow. Our research also reveals that although there has been some progress in the transnational flow of Chinese planning knowledge, it still faces numerous challenges, including cultural differences, language barriers, and policy differences between different countries. The findings offer useful insights for European scholars studying planning policies and practices related to European knowledge spillover and EU integration.

Keywords:

knowledge flow; planning knowledge; actors; academic activities

T_04 GOVERNANCE (A) / 1576

Enhancing Resilience in Agrucultural Water Management: A Social Network Analysis Approach to Identify Leverage Points for Climate Adaptation

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Climate change poses major challenges to water management and agricultural sectors across Europe. Floods, drought and water pollution require the development of resilient governance structures. In the framework of the FARMWISE project, funded by the Horizon Europe programme, this study aims to analyze the resilience of actor networks within eight European case studies (CS) —Italy, Poland, Spain, the Netherlands, Finland, Sweden, United Kingdom and Ukraine —in the realms of water management and agriculture. The primary objective of this research is to identify leverage points within each network that can be targeted to strengthen their resilience against the adverse effects of climate change.

To do so, this research integrates Social Network Analysis (SNA), Leverage Points (LP), and resilience theory to comprehensively examine network dynamics. SNA serves as the methodological foundation, enabling the mapping and quantification of relationships within actor networks through techniques such as centrality measures, cohesion analysis, and cluster identification. These methods reveal structural attributes that either enhance or impede network resilience. Resilience theory is applied to evaluate the networks' capacity to absorb shocks, maintain functionality, and transform in response to environmental stresses. Additionally, the concept of LP, inspired by systems thinking and Donella Meadows' framework, is utilized to pinpoint specific nodes or relationships within the network that are strategically important for boosting resilience. These LP represent areas where targeted interventions can significantly improve the network's ability to adapt and recover from climate-induced disturbances. The interplay between SNA, LP, and resilience theory allows for a holistic analysis, identifying both structural weaknesses and critical areas for strategic enhancement to strengthen overall network resilience.

The methodology used for the research, encompasses both quantitative and qualitative approaches to ensure a robust analysis of network resilience. To achieve the research objectives, a digital tool was developed, in collaboration with TU Darmstadt. This tool, named COSMIC - Collaborative Stakeholder Mapping of Interactions and Collaborations - facilitates the visual mapping of actor networks through a structured survey, enabling the collection of essential data required for Social Network Analysis (SNA). The digital tool allows for the systematic identification and visualization of interactions among stakeholders, providing a comprehensive overview of each network's structure and dynamics. In addition to the quantitative mapping, qualitative data collection methods are employed to enrich the analysis. To do so, interviews have been conducted with the leaders of each CS to gain in-depth insights into the functioning of their respective CS stakeholder's networks. These interviews aimed to validate the information and provided context to the quantitative findings. Furthermore, focus groups with various stakeholders have been organized to validate and triangulate the information obtained from the surveys and interviews. This participatory approach (1) ensures the accuracy and reliability of the COSMIC tool and the identified LP, (2) validates whether the sample is sufficiently representative of each territorial agrosystem and (3) fosters a collaborative environment where stakeholders can already actively contribute to the strengthening of their networks.

The research is a work in progress, but the expected outcomes include detailed maps of actor networks within the selected European CS, highlighting structural characteristics that influence their resilience. The study aims to offer actionable recommendations for policymakers and practitioners seeking to fortify these networks against the impacts of climate change. The developed digital tool represents a scalable and replicable approach that can be applied to other regions and sectors, promoting informed governance strategies that enhance network resilience.

Keywords:

Climate Resilience, Social Network Analysis, Leverage Points, Water Management, Governance

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Industrial Transformation and Upgrading of Small Towns and Regional Collaborative Development: A Case Study of Zhili Town, China

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Research on industrial transformation and collaborative development in small towns has garnered increasing attention against the backdrop of Chinese-style modernization. However, most existing literature focuses on medium- and large-sized cities or the transformation of traditional rural areas, lacking a systematic investigation of industrial evolution and collaborative approaches in small towns confronted with global crises and regional imbalances. Currently, the Chinese government places high importance on coordinated regional development and optimizing urbanization's spatial resources. Small towns, with potential advantages in accommodating industrial spillovers, absorbing labor mobility, and reshaping space innovatively, warrant further study on their transformation processes and pathways.

The rise and spillover of the children's clothing industry in Zhili Town, Huzhou City, China, provides a typical case for examining how small towns achieve economic growth through industrial upgrading, relocation, and regional collaboration. This study focuses on several scientific issues: (1) the processes of industrial clustering and relocation in small towns; (2) the roles of government and collaborative mechanisms among multiple stakeholders; (3) labor market disparities and social sustainability; and (4) the outcomes of coordinated regional development.

Using Zhili Town and its primary relocation recipients as the core case, the research was conducted at two levels. First, based on spatial distribution data of the children's clothing industry, local statistical yearbooks, and policy documents, it systematically analyzes the scale, land-use patterns, and economic contributions of the industry's progression from early clustering to subsequent spillover, identifying drivers of upgrading and relocation pathways. Second, through interviews, surveys, and roundtable discussions with multiple stakeholders, the study delves into the interactions and negotiations among governments, enterprises, village communities, and migrant labor groups during the relocation process, summarizing the socio-economic attributes and governance structures underpinning the industry's transformation.

The study findings indicate the following:

- (1) Under early market reforms and government policy support, Zhili's children's clothing industry rapidly clustered and relied heavily on a non-local labor force. As fire safety issues and spatial carrying-capacity pressures intensified, the local government implemented a "replacement of old, introduction of new" strategy and promoted industrial park development, creating an effective context for upgrading local industrial structures.
- (2) Relocated industries primarily moved to less developed regions, forming a cross-regional division of labor known as "front shop, back factory." Although this injected capital and technology into inland areas—boosting employment—it also increased reliance on coastal markets and investments, highlighting the need for more comprehensive supportive policies at the local level.
- (3) Mechanisms of labor commodification and decommodification differ across regions,

leading to varying outcomes for migrant workers concerning welfare, income, and flexible employment needs, thus posing new challenges for social services and governance capacities in small towns.

(4) Local governments act as comprehensive coordinators for spatial planning and industrial policy. By enhancing quality inspection centers, encouraging digital trade and brand-building, and establishing cross-regional cooperation platforms, they seek to cultivate the industrial vitality of small towns within urbanization processes and reinforce social equity and sustainability.

This research qualitatively explores how small towns can achieve balanced and high-quality regional growth through industrial transformation and collaborative relocation amid global crises and regional inequalities. Its conclusions deepen the understanding of small towns' socio-economic resilience and spatial restructuring in the "post-growth" era, offering practical policy guidance on planning, industrial cooperation, and labor governance. They also provide significant insights for the global study of innovative small-town development and regional collaboration.

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Keywords:

Small Town; Industrial Transformation; Regional Collaborative Development; Labor Market Disparities

T_04 GOVERNANCE (A) / 1105

Territorial Governance across borders -the Example of the Greater Region

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Spatial planning, understood as "measures [taken] to develop models of a desirable, ideal state of the space and to create the conditions for its realization" (Turowski, 2005, p. 894) traditionally stops at the national border, its scope of action and the competences of spatial planners are legally bound to a nation state and its planning system. However, more and more cross-border functional soft spaces have developed across national borders. Furthermore, exercising political decisions with territorial implications in the vicinity of national borders often influences the neighbouring country's territory. Cross-border cooperation and territorial cohesion are actively promoted and supported by the European Union (EU) (e.g., by financial incentives offered by the Interreg programme). To contribute to the EU's objectives and be more efficient it is necessary to apply a place-based approach of territorial governance as defined by Van Well and Schmitt (2015, 211f.) to functional places that span across national borders. The increasing need to harmonize and coordinate spatial development in border areas is particularly relevant

against the backdrop of increasing interdependencies in the above mentioned cross-border functional areas. Several cross-border regions, e.g., the Greater Region SaarLorLux +, have attempted to supplement and coordinate national policies and programmes of neighbouring countries with cross-border spatial development concepts to contribute to a more efficient spatial development (cf. Bechtold et al., 2020). Cross-border cooperation in the domain of spatial development encompasses a multitude of stakeholders and institutions from various policy sectors and territorial specificities. A complex and ambitious project –even more so than a similar process within a single nation state –it needs to be coordinated through territorial governance. Thus, this difficult task is both time-consuming and costly (Caesar and Pallagst, 2018, p. 24; Nienaber, 2018, p. 175). It is likely that different national planning cultures clash during the coordination and development of policy processes (cf. Caesar and Evrard, 2020). In addition to explicit elements, like individual spatial planning systems and legal regulations, planning cultures comprise many implicit elements such as societal values that are difficult to grasp and address but strongly influence spatial planning practice and territorial governance across borders.

This contribution highlights territorial governance in the context of cross-border spatial development. Firstly, the concept of territorial governance is contextualised in the cross-border setting based on scientific literature. Particularly, the European Union's (EU) conceptual understanding of functional areas, cross-border interdependencies and the place-based approach are illuminating the need for spatial planning and territorial governance across-borders. This is accompanied by examples from the Greater Region SaarLorLux +. This cross-border region, also known as Großregion/ Grande Région encompasses territories of France, Belgium and Germany as well as the country of Luxembourg. Secondly, the authors dig deeper into the reasons for and characteristics of territorial governance when applied in a cross-border context. These remarks are proved with examples of the Greater Region that started its coordination attempts several years ago and recently finalized a spatial development concept. The last section concludes with a definition of territorial governance across borders and discusses its significance and challenges to come up with ideas to overcome them at the end.

Keywords:

Governance; planning culture; cross-border spatial development; Greater Region

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A protocol to research climate adaptive governance systems for infrastructure and equity

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Purpose:

This presentation presents a protocol, ideas and framework to advance knowledge and research about how built and social infrastructure has co-benefits for climate change and health equity. The focus is to identify the systemic conditions that support best practice governance behind planning and delivery of climate adaptive infrastructure to enable equity.

Background

There are urgent and critical gaps in knowledge about how to create institutional change necessary for developing climate-focused policies and programs that generate positive health and equity impacts (Haines et al., 2020, Heenan et al., 2023). The 2023 Intergovernmental Panel on Climate Change (IPCC) report confirms with 'high confidence' that climate change is impacting 'human health, livelihoods, and key infrastructure' and these 'impacts are concentrated amongst the economically and socially marginalised' (IPCC, 2023). The research protocol presented responds directly to IPCC's recommendations to focus on local institutional responses to the climate crisis (IPCC, 2023). Equity requires a focus on climate justice and institutional transformation.

Innovation in the context of international advances

Infrastructure for climate adaptation and equity requires connections across sectors (Harris et al., 2020), and integration across planning, measurement and evaluation (Giles-Corti et al., 2021, Australian Council of Social Services, 2022). Climate action is nested in a multi-scaled complex system, with each level influencing another. The IPCC recommends, with 'very high confidence' that effective climate mitigation and adaptation combine government, civil society, and the private sector, prioritising risk reduction, equity and justice, integrating decision-making processes, finance and technology, and actions across governance levels, sectors, and timeframes (IPCC, 2023). 'Governance' dynamics are at the centre of institutional effectiveness (Sharma-Wallace et al., 2018). However, our prior research has revealed the tendency for policy sectors to work in separate sectoral silos that limits effective collaboration and holistic approaches necessary to address equity and risks institutional policy inertia that obstructs, rather than supports, action (Morrison and Van Den Nouwelant, 2020, Harris et al., 2020, Harris et al., 2022, Harris, 2022). From this scholarship we present a novel institutionally focused framework.

Methodology

The research advances knowledge about the working dynamics of complex systems involved in policy change mixing new institutionalism, realism, qualitative comparative analysis and systems analysis methodology. The protocol responds to recent scholarship (Byrne and Callaghan, 2022) connecting realist analysis with systems approaches to understand and explain the conditions and mechanisms involved in complex and messy interventions (Shearn et al., 2017, Fletcher et al., 2016, Koorts et al., 2021), including equity across different localities and population sub-groups (Fletcher et al., 2016). Our

previous research has demonstrated the validity of mixing realism and institutional approaches to investigate policy systems (Harris, 2022). Here we add participatory systems mapping to facilitate local policy action (Penn and Barbrook-Johnson, 2019).

Research design

The protocol has five phases. First builds evidence of multiple case studies (Yin, 2012). Second compares cases broadly for their similarities and identify the essential cross case findings, using Qualitative Comparative Analysis (Sager and Andereggen, 2012). Third uses these findings to develop a cross-case systems map. Fourth uses participatory systems design to build context specific systems responses to that evidence, based on the additional experience of local experts and policy makers. Fifth, across the research, is critical realist analysis using relevant theoretical insights to explain the data and provide a narrative explaining the systems maps.

The protocol provides future researchers with a comprehensive suite of methods and approaches to compare multiple case studies of climate adaptive governance and systems change in the face of the climate crisis.

Keywords:

Governance; institutions; policy; practice; infrastructure; equity

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Territorial Transitions and Governance in Alpine Regions: The Case of Valtellina within the EUSALP Framework

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This contribution stems from a collaboration in academic research, focusing on the potentialities and contradictions of governance frameworks and planning strategies in shaping the ecological and digital transitions driven by the current European Strategy for the Alpine Region (EUSALP). The study is conducted through a research-by-design approach that led us to adopt an empirical methodology applied to the pilot territory of the Valtellina mountain region, in the North of Italy.

Valtellina exemplifies the duality of Alpine territories: its exceptional productive and environmental resources contrast with vulnerabilities from climate change, socio-economic inequalities, and trans-scalar anthropic pressures. The research investigates how new forms of production, energy reorganization, and tourism diversification can integrate into coherent territorial planning scenarios. Participatory mapping of territorial dynamics and the involvement of local stakeholders reveal processes aligning with EUSALP's cohesion, sustainability, and innovation goals (EU Strategy for the Alpine Region, 2023). Flexible and inclusive governance mechanisms capable of navigating tensions between informal "soft spaces" of collaboration and formal "hard" institutional structures are highlighted as critical. Moreover, cross-border governance arrangements that transcend administrative and sectoral silos are emphasized as tools for fostering generative conflict and institutional learning.

The methodology adopts a trans-scalar, interdisciplinary, and place-based approach, actively engaging local communities, cultural associations, and territorial administrations. Results demonstrate that local actors and community-based practices catalyze the conditions needed to implement EU territorial transition objectives (espon, 2018). At the same time, university-led initiatives provide critical support in defining place-based strategies for economic innovation and socio-spatial regeneration. Policy narratives promoting social justice, renewable energy, and digitalization emerge as pivotal for rethinking governance in Valtellina and beyond, offering a spatial approach to support these transitions.

The study also integrates insights from EUSALP, emphasizing the dual role of universities in fostering public action to refine and detail territorial transition strategies while implementing place-based innovation initiatives. In this context, the concept of antifragility takes on particular importance, highlighting how vulnerabilities can be transformed into opportunities through transboundary collaborations in spatial regeneration scenarios (Modica, 2019; Modica, Solero, 2022). Mapping Valtellina's material and intangible networks contributes to a trans-scalar territorial framework that supports cohesion policies and facilitates their local implementation.

Territorial innovation ecosystems are central to the research, which identifies hubs capable of integrating public administrations, associations, enterprises, schools, and universities. These hubs connect productive activities, research initiatives, and material and digital services. Positioned within a cross-border spatial framework, they promote sustainable, resilient, and anti-fragile regional development. Key assets, such as the Milan-Tirano railway, transversal public transport networks, the Adda River's green and blue corridor, and hydropower infrastructure, are leveraged to enhance these hubs' effectiveness.

Building on recommendations from the Joint Paper on Spatial Planning (JPSP) within the AlpGov2 framework, the research underscores the importance of sustainable resource management and climate resilience (EU Strategy for the Alpine Region, 2022). It advocates for multifunctional green, blue, and transport infrastructure networks, aligning with broader European objectives such as the Territorial Agenda 2030 and the EU Green Deal (European Commission, 2024). Valtellina emerges as a pilot area for cross-border spatial planning and integrated governance models, offering lessons that can be transferred to other EUSALP regions.

Ultimately, the study outlines how cross-border spatial planning and design approaches can embed trans-scalar governance into European cohesion and transition policies. By positioning Alpine regions as laboratories for addressing complex contemporary challenges (Perlik, 2019), the research aims to develop a transferable, replicable model to tackle governance issues in fragile mountain areas. These efforts are rooted in trans-scalar scenarios of socio-spatial regeneration that respond to the multifaceted crises affecting these territories.

Keywords:

EU policymaking; transboundary planning; cohesion; Alpine region governance; Research-by-Design approach

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Reinventing Cities in Madrid: the life and death of a Parisian model of municipal land allocation?

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Reinventing Cities (RC) is a planning and design competition organized by the C40, a global city network of knowledge exchange and policy support for climate adaptation. RC is one of the network's operational tools, through which cities sell sites deemed under-utilized, so that projects tackling C40's ten climate challenges can emerge. These projects must be led by interdisciplinary consortia, including designers, specialized environmental consultancies and developer-investors. RC thus echoes other municipal practices of land allocation for "green" or "innovative" real estate projects in Europe (Bulkeley & Kern, 2006; Candel & Paulsson, 2023; Gerber, 2016; Tambach & Visscher, 2012). RC is a version of Réinventer Paris, launched in 2014, and rapidly exported expanded rapidly thanks to Parisian Mayor Hidalgo's policy boosterism (McCann, 2013). The competition offers market-based solutions to social and environmental problems, utilizing the very high demand of public land to leverage real estate actors into changing their practices. This model sparked controversy in France, with criticism of the role given to private actors in decision-making regarding urban development projects and in urban service provision (Béhar et al., 2018).

Through RC, this model of land allocation travels to very diverse contexts, from an urban, social, economic and politically point of view. Madrid is a particularly intriguing example. The city participated in RC during Ahora Madrid's term at the helm of the City. This 'new municipalist' coalition, led by Manuela Carmena (2015-2019), held office in the aftermath of austerity responses to the subprime and Eurozone crises. Carmona's program included the fight against property speculation, the development of affordable housing and the democratization of urban policies (Janoschka & Mota, 2021). Thus, in Madrid, RC is part of a political fight against a speculative and extensive model of urbanization and against austerity policies (Davies & Blanco, 2017). In a constrained context where Carmena's office had few levers for implementing its ambitious electoral program (Janoschka & Mota, 2021), RC arguably appeared to be a credible tool for countering the speculative logics that had hitherto dominated, given the municipality's enthusiastic participation. Indeed, Madrid took part in the first two editions of Reinventing Cities in 2017 and 2019, and to date remains the second city –after Milan –with the largest amount of

sites proposed across the three editions of Reinventing Cities.

This apparent paradox –a tool travelling from a context where it uses speculative urban development as a lever for “sustainable” real estate to a context where it fights speculation –is the starting point of this presentation. I will begin by placing RC in the broader context of Madrid’s urban policies of recent decades, as a way to explain the adoption of RC by Carmona’s government. The remainder of the presentation will provide an empirical analysis of the “effectiveness” of RC in Madrid. Firstly, I will analyse the motivations of public and private actors involved. Secondly, I will document the evolution of winning projects, as well as the reasons behind abandoned projects or difficult implementation. Finally, I will broaden the scope from mere project implementation to an investigation of the potential traces left behind by the competition, be it within the municipal technos-structure or among the winning group members. The point here is to investigate whether RC contributes to transforming professional practices and the internal organization of urban stakeholders, as the CIUPs in the Paris region have done (Gomes and Pérès, 2022). The circulation of best practice in sustainable urban planning and real estate models might also be found there, beyond the scope of winning consortia and projects.

Keywords:

planning competitions; urban regeneration; Madrid; Reinventing Cities

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Introducing a Method for Measuring the Geographic Boundaries and Advantageous Potential Functions of the Wuhan-Xianning Cross-Border Urban Cooperation Zone ——An Investigation of an Emerging Regional Unit in the Adjacent Areas Between Chinese Cities

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With the rollout of China's national strategy promoting metropolitan area integration, a plethora of urban planning practices spanning administrative boundaries are flourishing across the country, sparking considerable academic interest in a novel type of intercity adjacent regional unit—which we designate as “cross-border urban cooperation zones.” The main contribution of this paper lies in addressing the gap in existing literature regarding methodologies for delineating the geographical scope and boundaries of cross-border urban cooperation zones and forecasting their potential advantageous functions. Using Wuhan, the largest metropolis in central China, and its neighboring city of Xianning as a case study, the research leverages land-use data, corporate data, socio-economic data, mobile phone signaling data, and transportation data. By employing social network analysis, GIS spatial analysis and spatial statistics, as well as landscape pattern index methods, the paper not only devises a “four-dimensional, three-step” framework for identifying the geographical scope and boundaries of cross-border urban cooperation zones but also formulates a calculation method for assessing their potential advantageous functions, rooted in potential indicators, evaluation matrices, and advantage indices. Through these methodologies, the study successfully outlines a 384.8 square kilometer Wuhan-Xianning cross-border cooperation zone, analyzes the divergent land-use growth patterns and population dynamics on either side of the administrative boundary, portrays the natural environmental features of a major lake straddling the two cities, unveils the spatial distribution of manufacturing zones, residential areas, cultural and tourism spaces, and agricultural/forestry lands within the cooperation zone, and highlights the road and railway infrastructure of the cross-border cooperation zone situated at a pivotal node of a regional transportation corridor. Additionally, the paper forecasts the region's most promising future functions in terms of ecological landscape, technological innovation, and healthcare and wellness services. Consequently, the paper conceives a comprehensive spatial planning blueprint for the sustainable development of the region, emphasizing the pivotal roles of ecological connectivity, clustering of scientific research and industries, and the enhancement of healthcare and sports facilities. The research findings will be partially incorporated into the implementation of the upcoming version of Wuhan metropolitan area's territorial spatial planning.

Keywords:

Cross-Border Urban Cooperation Zones; Advantageous Potential Functions; Spatial Integration Planning

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Resources as Mediators: A Case Study of Neighbourhood Conflict in Dingshan, Nanjing

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Chinese metropolises have concealed numerous conflicts during the era of rapid urbanization, highlighting an urgent necessity to resolve these issues in the context of new-type urbanization. This study focuses on a neighbourhood conflict over a road within Dingshan. Residents of a gated community consider this road to be their internal segment and intend to erect a gate to restrict access. Conversely, this road serves as a vital route for external residents, who regard it as public space, asserting their right to pass through. The conflict between the two sides has persisted for nearly three decades since the establishment of the gated community, triggering multiple group confrontations and even violent clashes.

After the mass production of urban space, a bottom-up regeneration process emerges during its utilization, with the dominant actors shifting from governments and real estate developers to urban residents. The spatial competition and neighbourhood conflict are intense forms of urban regeneration, in which the characteristics of space transcend

mere commodities, as described by the theory of spatial production, and become symbolic representations of rights. Therefore, the 'capital' narrative used to explain spatial production proves inadequate in the context of spatial regeneration. This study employs Giddens's structuration theory to analyse the situation, pointing out that resources, as mediators of structure and agency, encompass various forms beyond capital, including knowledge and the body, and examines these dynamics within the neighbourhood conflict of Dingshan.

In the initial phase since the 1990s, after the construction of the road, the property rights remained ambiguous. However, residents from both within and outside the community reached an informal consensus that the road would be shared, permitting pedestrian and bicycle access, while without clarifying whether cars were allowed. Over the next decades, the increasing volume of vehicles and people contributed to the gradual accumulation of contradictions.

From 2017 to 2020, residents within the community took an initiative action to establish an owners committee, replaced the property management company with strict regulations, closed the gate, and reinforced the physical boundaries using communal funds. During this period, residents outside the community attempted to pass through by disputing and fighting, resulting in the intermittent opening and closing of the gate.

From 2020 to 2022, during the COVID-19 pandemic, the government officially decided to close the community gate. In light of public health concerns, residents both inside and outside the community temporarily agreed to this measure. After the pandemic, the Municipal Planning Bureau clarified that the road was publicly owned. Consequently, the accessibility of the road led to a conflict between external residents advocating for social justice and internal residents defending their property rights, resulting in a violent confrontation. The incident prompted intervention from higher-level government authorities, who deployed armed police to calm the situation and stationed a police car at the gate, preventing its closure and car access. Subsequently, both sides have largely accepted this resolution imposed by the higher authorities, and the police car remains in place to this day.

Throughout the case, both groups of residents utilized various resources, including capital, knowledge, and the body resources, to engage in the conflict. This situation illuminated the tensions between national and local governance, as well as among different levels and branches of government. The government's actions, which involved the downward distribution of knowledge resources and the upward reclamation of physical (violent) resources, significantly influenced the conflict dynamics. Additionally, this case reveals issues such as the ambiguity in land rights confirmation and regulation, the evasion of institutional responsibility, and inadequate information release.

The materials and data for this study are derived from the author's ethnographic research conducted over the past three years.

Keywords:

Neighbourhood conflict; urban regeneration; space competition; structure, agency and resource

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An Overview of Urban Policymaking through Institutionalisation for Development of the Cities in Turkey

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Institutions enable organised and collective efforts to address common concerns and achieve social goals (Dovers, 2001). Institutional innovations can occur at various scales when the context in which people and decision-makers operate changes and impose new constraints on them. Climate Change and environmental challenges are today the main drivers of institutional change at all levels (Hamdouch & Zuideau, 2010). The impact and struggle of urban policies on these changes create new forms of urban man-

agement, and policies are constantly discussed and updated (Rotmans et al., 2000). Institutional capacity adequacy is a necessary condition not only for crisis management but also for all stages of urban development today, with institutional capability and governance being substantial factors in the development of cities. For relevant institutions, cross-sectoral integrated thinking, flexibility of resources, clarity and transparency constitute strong institutionalised capacity (OECD, 2016). Integrated, comprehensive and flexible management of social, cultural, demographic and environmental changes cannot be possible without updating management patterns and policies. Policy actors have different political and technical capacities to select and reorganise new instruments within existing institutional arrangements (Mukherjee et al., 2021). Changing political and structural conditions can lead to different policy effects of the same institutional arrangements. The design of policies and their provisions under specific circumstances significantly impacts the patterns, processes, and outcomes of incremental and endogenous policy change in the actual policymaking (Ahn, 2024). Economic developments and production processes in the world are usually reflected in urban areas, and related environmental, social and institutional processes accelerate the change in urban areas. Ensuring urban economic sustainability and developing efficient interventions for all developments are at the centre of urban policies. This can only be achieved through institutionalisation. Institutionalisation ensures effective use of resources by providing a transparent and systematic control cycle. It can be achieved and sustained by developing institutional capacities, fostering collaborations, creating and utilizing new funding sources, and adopting flexible management models. This study aims to emphasise the importance of institutionalisation in contemporary urban policies and related implementation tools. In the case of Turkey, in addition to the institutions and legal regulations responsible for making urban policies, institutionalisation and institutional transformation efforts are discussed through institutional capacities, funding sources, collaborations and awareness. Within the purpose of the study, the main questions are: Are the capacities of local governments, which have endeavoured to update their policies and institutions as a reflection of urban politics in recent years, sufficient to create the order they envisage, make and implement policies? Which implementation and legal tools are used in urban development to reflect policies on the city? Central and local institutions within the legal hierarchy in urban practices are examined concerning the subject. The institutional change efforts of local governments have been evaluated through interviews with urban planning agencies, most of which have been established in the last few months, and municipal unions and their approaches and policies have been put forward about urban politics and institutionalisation. It can be said that organisations with strong institutional capacity are capable of carrying out the most effective and innovative practices. Individual skills seem to be effective in this regard. Collaboration and institutionalisation awareness are open to discussion. It is a necessity for policymakers to update their agendas, understand the developments, and work towards developing innovative policies by overcoming legal constraints. Local governments' efforts for urban policymaking should updated on the axis of institutionalisation, away from the shadow of populist urban politics. Efficient institutional capacity includes human and intellectual capital, awareness, collaborations, innovative, flexible and horizontal management models.

Keywords:

urban policymaking; institutionalisation; institutional capacity; Turkey

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T_04 GOVERNANCE (A) / 257**Typologies and Dynamics of Urban Growth Projects in Ethiopia: A Discursive Analysis****Author:** Han Gao¹¹ *Southeast University***Corresponding Author:** gaohanseu@outlook.com

Ethiopia is one of the fastest-growing economies and urbanizing countries in sub-Saharan Africa. The rapid expansion of existing urban areas and the significant increase in the number of new towns highlight the remarkable trends in Ethiopia's urban growth. This urbanization process is accompanied by large-scale urban projects aimed at promoting long-term urbanization and modernization in the country. The objective of this study is to identify the typologies of Ethiopia's urban growth projects and analyze the dynamics underlying these projects through a discursive approach.

First, the study synthesizes existing research on emerging towns to outline a "toolbox" for facilitating urban spatial growth in the Global South. Second, it examines Ethiopia's urban growth typologies by tracing urban policy documents and urbanization actions. Third, through comparative analysis, the study situates urban growth projects within broader political-economic processes and historical contexts to analyze the dynamic mechanisms driving these projects.

The study identifies three main types of urban growth projects that Ethiopia has consistently implemented, spanning both the EPRDF and the current Prosperity Party administrations: (1) New City Development Driven by Place-Based Spatial Policies: These projects adhere to the logic of spatialized economic policies, creating new growth poles with statutory legitimacy. Specific examples include tourism-oriented eco-cities, urbanization strategies integrated with industrial parks, and satellite cities. (2) Large-Scale Urban Renewal Initiatives: These projects focus on upgrading existing urban centers through substantial investments in infrastructure and commercial projects, thereby reshaping the conditions for urban capitalization. Representative cases include recent corridor development plans in major cities. (3) Reconfiguration of Spatial Governance Areas: This involves reorganizing unstable administrative boundaries to redefine the strategic rules governing political and economic activities. Examples include Shager City surrounding Addis Ababa and multiple economic zone initiatives.

Furthermore, through discursive analysis, this study compares these three types of policies using both diachronic and synchronic approaches to explore their discursive contexts, spatial practices, and power relations, as well as the similarities and differences among the projects. The findings reveal the following: (1) All three types of projects respond to Ethiopia's historical-geographical conditions, particularly issues related to ethnicity and land tenure, reflecting paradigms of urban spatial production and reproduction informed by Global North experiences. (2) The continuity of authoritarian governance ensures the knowledge production and implementation of diverse urban growth projects, reinforcing their top-down and state-driven nature. (3) Despite the continuity of the three types of urban projects, their underlying developmental logics have evolved across political-economic periods. Specifically, there has been a shift from the developmentalist, rural-urban equalization logic of the EPRDF era to the scalar reorganization and entrepreneurial urbanism of the Prosperity Party period.

Keywords:

Urban Growth Projects; Political-Economic Dynamics; Spatial Governance

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The cautious revival of national spatial planning: lessons from the Netherlands

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Abstract

In various European member states, there has been a call for enhancing national spatial planning (Yang et al., 2024; Breach, 2024). The housing crisis is an essential driver behind these calls (ESPON, 2024), but not the only one. Protecting essential ecosystem services, promoting renewable energy, climate adaptation and, lately, reserving space for military use have also been cited as reasons for introducing or enhancing national planning. Conversely, the lack of national planning is often blamed for urban sprawl and/or the uncontrolled proliferation of datacenters and logistical facilities.

Dutch national spatial planning was long heralded as a European forerunner. However, this reputation gradually declined after the turn of the century. In the era of neoliberalism, the Dutch planning system was subjected to far-reaching decentralisation and deregulation (Roodbol-Mekkes, van der Valk and Altes, 2012; Zonneveld and Evers, 2014). In the past decade, subsequent national administrations have asserted the intention to 'reclaim control' to tackle the country's major spatial challenges.

In this paper, recent attempts at a comeback of national spatial planning in the Netherlands are assessed against theoretical and historical notions about the success and failure of national spatial planning strategies. The paper claims that the effectiveness of Dutch national spatial planning can only be understood in the institutional context in which it was developed and executed. For the institutional analysis and the analysis of the emerging strategy, we draw on Ostrom's IAD-framework, the concept of policy arrangements (Arts et al. 2006) and the concept of planning doctrine (Faludi and Van der Valk, 1994).

The renationalization of spatial planning –by means of the 2020 National Environment and Spatial Strategy (NOVI) –is occurring under entirely different circumstances than when it was denationalised around 2000 (Evers, 2024). The legacy of decentralisation, rise of populism, consolidated power of commercial actors are all factors to be reckoned with. The case offers insight into the relationship between institutional conditions and the success- and fail factors of national strategic planning. As such forces are present elsewhere in Europe, and Dutch national planning's history is generally seen as exceptional, the Dutch case can be seen as an extreme case to learn from in different contexts.

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Keywords:

National spatial planning, Institutional analysis, network governance

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Ethnographies of Institutional Learning within Social Innovation Encounters: the case of Turin (Italy)

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The contribution addresses questions of institutional learning within planning policies, proposing Social Innovation (SI) as a conceptual companion to investigate the region of Piedmont in Northern Italy. The term is extensively used and extremely hyped (Vigar *et al.*, 2020). Yet, the project urges to examine the socio and spatial distribution of emerging inequalities and disadvantage patterns. It focuses on the importance of spatial infrastructures in addressing these issues with a local, pragmatic, and civic answer.

Given this framework, the research investigates what institutions could learn from these social practices of cooperation by implementing analysed experiences in planning tools and policies. Thus, the public administrations could have a pivotal role in stabilising community-based activations, which may, otherwise, lose their *momentum* and effectiveness.

The paper focuses on the peculiar regional case with a specific zoom on the metropolitan area of Turin. During an initial mapping phase, the metropolitan context has shown a high-intensity concentration of civic activities, which partly sustain themselves thanks to philanthropic operations of private foundations and bank institutions and *ad hoc alliances* with public bodies. The analysed activities fall under a definition of SI that enhances territorial development and a general social value through everyday actions for the territory and its local communities. SI is always localised and grounded in a specific context, making the concept decline in its operative actions. In-depth interviews with emblematic actors carrying out these local activities have confirmed a first hypothesis: the Turin case works thanks to an endured cooperation fostered in twenty years of conciliated collaboration between strategic visions and “real-world projects” (Ponzini and Santangelo, 2018).

The research explores how these SI realities exist, work and sustain themselves by placing their operations in the broader network of formal and informal relations with different actors they have established throughout the years. Research shows that a wide and heterogeneous net is already established within the Turin territory and that, thanks to its recognition, the Municipality increasingly involves these emergent actors in its public strategies, generally proposing a collaborative cooperation model. Therefore, this contribution proposes focusing on the drifts during these encounters.

By shifting the question to ‘how and if public Institutions learn from SI projects?’ the research addresses the Social Innovation discourses towards enabling learning patterns that could be test ground for similar local realities and thus endure civic initiatives and let them become stabilised within normative planning frameworks. To do so, partial results from an ongoing institutional ethnography will be discussed. The role of ethnography affects the research on the epistemological and methodological levels since it will ground the research in the middle of things by proposing to exceed an *a priori* definition of Social Innovation. By drawing on STS (Science and Technology Studies) methods, the proposal aims to shift knowledge production *in media res* and grounds the research in practice. The ongoing institutional ethnography intersects social innovation practices with policy instruments that specifically address and form the issues. This grounded perspective would facilitate assessing how and if institutions learn from the practices. Moreover, the research inquires to what extent the processes of stabilisation of SI practices within planning tools are welcomed or not, becoming governmental tools. Combined with the previous collection of data retrieved from the mapping, the micro-social perspective given by the ethnographic account will thus sharpen the reconfiguration of social and planning innovation landscapes.

This contribution is part of the broader research project RESISTING - Reconnecting Social Innovation with Institutions in Urban Planning, funded under the National Research Program of National Interest (PRIN NRRP 2022), within Italy’s National Recovery and Resilience Plan. RESISTING studies three different Italian regional contexts.

Keywords:

Social Innovation, Institutional Learning, Ethnography, Turin

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Regional planning for no net land take: Designing strategic planning processes in peri-urban Austria

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Reducing land take is indispensable for climate protection, biodiversity, flood prevention and food security. Land take –understood as the conversion of land to artificial surfaces –is a pressing issue in the peri-urban areas, where agricultural land and housing developments meet and pressure for land reallocation is particularly high. This dissertation project explores the role of peri-urban regions in achieving soil protection goals and highlights the need for integrated strategic plans. It examines their potentials to foster soil conservation and socio-spatial transformation. This research focus on the process level: How can strategic planning processes be designed to reduce land take and encourage social-spatial transformations in peri-urban regions?

Austria has an extraordinarily high rate of land take, consuming approximately 11 hectares per day. The increasing scarcity of high-quality soils highlights the urgency of immediate action. Environmental organisations and renowned experts advocate for a 'no net land take target'. This means land take should not exceed 'reverse land take'—the conversion of artificial surfaces back into (semi-)natural land (ESPON, 2024). Land take is especially high in peri-urban regions, where land policy instruments are applied less frequently and less effectively. Structural deficits, such as fragmented competencies and the lack of quantitative targets, hinder the implementation of sustainable and just land policies. Addressing these challenges, scientists and planners need to engage also with (and improve) existing instruments and processes.

Sustainable land policy requires coordination across all planning levels, instruments and stakeholders. Regional planning bridges national objectives and local land-use planning and coordinates intermunicipal planning actions. In this context, integrated strategic plans —such as regional programs and concepts —are gaining importance by the coordination of regulatory measures and actions for the transformation of the existing fabric. As soil protection is an ongoing regional responsibility, planning concepts need to be long-term oriented, robust in their objectives and flexible in their implementation. Using planning culture (Othengrafen, 2014) as an analytical framework, this research examines three strategic planning processes and their impact on land consumption:

1. The “Regional programme Pongau”(2024) is a formal instrument that sets spatial regulations for municipalities while integrating a regional strategy for bioeconomy and circular economy.
2. The “Regional guideline for the region of Mödling”(2023) was developed through a communicative planning process and evolved into a legally binding regional program.
3. The “Action program for activating vacant properties and town recovery”for the region of Strudengau Nord (2024) prepared a regional strategy to support funding instruments for building revitalization and brownfield redevelopment.

These cases illustrate different approaches to soil protection and spatial transformation at a regional level. They vary in their combination of development impulses and regulatory determinations. Each case is innovative in showing a different way towards implementation of methods and also in its process organization. Given that each region is unique, with its own set of potentials and challenges, planning processes need to be tailored accordingly. Designing planning processes must be taken as a creative task. By comparing these cases, this research aims to identify key learnings for developing task-specific strategic planning processes that contribute to no net land take.

Keywords:

No net land take; Regional planning; Peri-urban; just land use

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Metropolitan Governance for Just Retrofit-Led Regeneration: A Comparative Analysis of London and Barcelona

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Metropolises are increasingly spaces of stark inequalities, characterized by significant disparities in access to resources, housing, and opportunities. While traditional academic literature highlights the positive impacts of the metropolitan scale in fostering economic growth through agglomeration effects (Scott & Storper, 2015; Glaeser, 2011), recent scholarship identifies a critical gap: the lack or weakness of redistributive governance mechanisms in metropolitan areas as a major driver of growing urban inequalities (Brenner, 2019; Moore-Cherry et al., 2021). These inequalities are particularly pronounced in housing, where access to adequate and affordable living conditions remains a pressing challenge (Rolnik, 2019).

This study argues that the redistributive capacity of metropolitan entities is significantly influenced by their governance structures. Specifically, the balance between metropolitan leadership and municipal autonomy, alongside the interplay between public and private actors, determines the potential for addressing inequalities through urban policies and initiatives. To explore these dynamics, a comparative analysis of two prominent metropolitan regions—Barcelona and London—was conducted. These cities offer distinct governance models and policy frameworks, providing valuable insights into how metropolitan governance can advance a more just approach to housing retrofits and regeneration.

The analysis focuses on the scope of metropolitan plans and policies in promoting equitable housing retrofits, particularly through the lenses of redistributive justice and sustainability. Housing retrofits—upgrading existing residential buildings to improve energy efficiency, affordability, and livability—represent a critical intersection of environmental, social, and economic goals (Sovacool, 2021). Using qualitative methods, including policy document analysis and interviews with key stakeholders, the study examines how governance structures in Barcelona and London enable or constrain the pursuit of ambitious and redistributive retrofit agendas.

Findings reveal that metropolitan governments play a pivotal role in supporting municipal administrative units within their jurisdiction by acting as coordinators that provide technical and financial resources while setting broader strategic priorities. Both Barcelona and London demonstrate the capacity of metropolitan entities to establish ambitious retrofit policies addressing housing inequalities. However, key differences between the two cases underscore how governance dimensions shape policy outcomes.

In Barcelona, the metropolitan governance model, while claiming municipal subsidiarity (Blanco et al., 2019), operates through a high degree of centralization in decision-making and implementation, advancing overarching redistributive goals in practice. Con-

versely, London's governance model emphasizes metropolitan leadership while relying on strong municipal subsidiarity for policy implementation. Additionally, the role and responsibility of non-government actors in retrofit implementation vary significantly, with London granting a more substantial role to private entities. These differences highlight tensions between subsidiarity and metropolitan authority, the recalibration of municipal needs, and the negotiation of roles between public and private sectors in delivering housing retrofits (Perry & Harding, 2002).

The study concludes that metropolitan governance is crucial for setting equitable housing agendas. However, its effectiveness hinges on balancing local and metropolitan priorities, fostering inclusive partnerships, and addressing structural power dynamics. Understanding these governance dimensions is essential for designing metropolitan policies that reduce inequalities and promote sustainable urban development.

Keywords:

metropolis; metropolitan governance; housing retrofit; redistribution; metropolitan inequalities

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Governing tactical urbanism. Innovation in decision making processes and planning approaches in the case of Genoa, Italy.

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In recent decades, an increasing number of cities worldwide have incorporated tactical urbanism into their urban planning strategies challenging traditional governance schemes and well-established planning approaches.

Some local administrations have developed structured tactical urban planning programs, defining criteria and priorities for implementing tactical experiments through a comprehensive, citywide approach. Otherwise, others have implemented individual

transformations isolated one from another. The different interpretations of tactical urbanism vary according to the needs and objectives: it can be employed as a demonstration tool by the citizens, as a response to an urgent need, or as a test bed for structural transformations that the administration may implement.

This contribution explores the experience of Genoa, an Italian city currently experimenting with tactical urbanism through a first pilot test. This initiative is intended as the starting point for developing an urban-scale strategy aimed at scaling similar interventions across different neighbourhoods citywide.

The pilot project involved the municipal administration in collaboration with the Departments of Urban Planning and Design of Politecnico di Milano as scientific consultants to support the whole decision-making process: from the selection of the suitable areas, thanks to a qualitative-quantitative study conducted by the university, to the design and implementation of the interventions through a participatory process involving residents and local stakeholders.

The combination of interdisciplinary expertise was crucial in addressing the project's various phases. This collaboration facilitated inputs such as accessibility analysis, interviews, design, participation. The process required a continuous trade-off between the findings of qualitative-quantitative research, the aspirations of the population, and the technical, economic and administrative feasibility of the proposed interventions as assessed by the municipal administration.

The incremental nature of the process provided a learning-by-doing opportunity for the actors involved in its implementation, particularly the municipal administration, which for the first time is facing a dynamic, uncertain planning process characterised by an innovative *modus operandi*: a more rapid, shared and participatory planning process, both in the identification of the areas on which to intervene and in the definition of the entities of the transformations. Adjustments, and thus changes, were necessary during the project, both in terms of the tools and methods utilized and the process.

This paper will present the experience conducted, discussing its process, adjustments and implications for the project. Some limitations and strengths will emerge: a flexible timeline that underwent continuous adjustments due to political changes, the involvement and turnover of different referents within the municipality; a slow, but constant dialogue between various levels of the administration (municipality and town hall); a continuous interaction between different expertise within the administration (involvement of several directorates) and the university.

In the context of an administrative apparatus confronted with an experimental scenario, these elements, far from being of minor significance, have facilitated the conceptualisation of suitable recalibrations and adjustments to the adopted approach. These reflections are fundamental in enabling the administration to adopt a working method applicable in other contexts and to develop an urban strategy.

Keywords:

tactical urbanism; decision-making process; local participatory governance; actors; institutions;

T_04 GOVERNANCE (A) / 1238

City-to-City Learning for a Climate-Neutral Future: Insights from the NetZeroCities Twinning Learning Programme

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With cities facing complex and systemic challenges, city-to-city (C2C) collaborations are increasingly recognised as an effective mechanism for municipal capacity building and transfer of knowledge and practices (Moodley, 2020). C2C exchanges have become a widely occurring phenomenon facilitated by city networks, funding programmes, and projects. It is positioned as a form of peer learning –an organised yet dynamic process between municipalities for mutual learning among cities that face similar challenges (Hoetjes, 2009; Enseñado, 2024). Despite the popularity of different C2C learning programmes, there is still limited understanding of how the learning takes place, its impact, and the experiences of the participating city practitioners (Haupt et al., 2020; Moodley, 2020). Therefore, using the example of the NetZeroCities Twinning Learning Programme, this study explores the process, forms, outcomes, and enabling conditions of C2C learning, supporting replication and knowledge transfer among cities striving to achieve climate neutrality.

NetZeroCities is a platform supporting the EU Mission: Climate-Neutral and Smart Cities. This platform is designed to help European cities build capabilities and ways of working to advance systemic change through innovation, including piloting (i.e. Pilot Cities Programme) and C2C learning (i.e. Twinning Learning Programme) programmes. While the Pilot Cities Programme enables the testing and implementation of innovative approaches for rapid decarbonisation through single-city or multi-city Pilot Activities, the Twinning Learning Programme makes it possible for other cities to learn from Pilot Cities. This Learning Programme is an expert-facilitated C2C learning programme pairing Pilot Activities with selected Twin Cities and enabling a structured mutual learning experience. This study explores Cohort 1 of the NetZeroCities Twinning Learning Programme, which takes place from September 2023 until May 2025 and involves 37 Twin Cities paired with 25 Pilot Activities (implemented in 53 Pilot Cities). It analyses (1) the overall structure and outcomes of the Programme and (2) three in-depth case studies (Pilot and Twin pairings) involving 8 cities from 7 countries. The study employs a primarily qualitative approach combining analysis of Twinning Learning Programme (Cohort 1) documentation and participants' feedback (from cities and facilitators), direct observations during C2C learning facilitation and process documentation, and analysis of the Programme outputs and deliverables.

The preliminary results show mixed outcomes. On the one hand, cities are satisfied with the Twinning Learning Programme and actively share knowledge and practices, especially during face-to-face interactions. On the other hand, the Programme is designed with a greater focus on Twin Cities, enabling structured and result-driven learning from the Pilot Cities while facilitating largely interest-driven learning from Twin Cities. Therefore, it limits the depth of mutual learning that is additionally impacted by the prior matching of cities (alignment of learning interests, climate ambitions and portfolio of actions, and contextual factors). Furthermore, the in-depth cases show that depending on the learning interests, cities engage in different forms of learning; for example, some cities emphasise technical learning while others primarily pursue conceptual or social learning. The participating cities also show different levels of preparedness to activate and engage with their local ecosystem during the Twinning Learning Programme, which is crucial for ensuring learning and knowledge transfer on institutional and societal levels and creating organisational memory. Finally, follow-up research will allow to assess the sustainability of established C2C collaborations and the longer-term impact of the Programme.

Keywords:

city-to-city learning; twinning; climate neutrality; capacity building; peer learning

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T_04 GOVERNANCE (A) / 628**Are You a Stakeholder or a Streekholder? Formal and informal planning in the Flemish-Dutch Delta****Author:** Alankrita Sarkar¹¹ *Delft University of Technology***Corresponding Author:** a.sarkar-4@tudelft.nl

Grenspark Groot Saeftinghe (Borderpark Saeftinghe) is a transboundary region located within the Flemish-Dutch Delta, a significant river delta shaped by the Rhine, Meuse, and Scheldt rivers. The territory of Flemish-Dutch Delta spans provinces in the Netherlands and Belgium, including Antwerp, East Flanders, West Flanders, Zeeland, North Brabant, and South Holland. As a region of strategic importance, it hosts major international ports such as Rotterdam and Antwerp, serving as a critical gateway to Europe's hinterland. Saeftinghe exemplifies the challenges and opportunities inherent in transnational governance and spatial planning. The region faces increasing environmental pressures, such as sea-level rise and pollution from port activities, which threaten its ecological and socio-cultural resilience. As one of the largest tidal areas in western Europe, Saeftinghe holds an importance in the European level as well. Thus, the value of this region has been recognised historically from an economic, ecological, political viewpoint. Situated within the environmentally sensitive estuary, this region exemplifies greater challenges with sea level rise and extensive pollution from the port activities. Despite these hurdles, it creates opportunities for experimentation in the dialogues, both the local and transnational levels.

Since the Flemish-Dutch Long-Term Vision for the Scheldt estuary was established in 2001, cross-border planning initiatives have sought to address these challenges through multi-level collaboration. Central to these efforts is the INTERREG project Grenspark Groot Saeftinghe (GGS), initiated in 2016, which brings together 11 key organizations, including the Port of Antwerp-Bruges, EGTS Linieland van Waas and Hulst, and governmental authorities from both Dutch and Flemish territories. In addition to formal stakeholders, local citizen groups, referred to as "streekholders" (a term coined by Grenspark Groot Saeftinghe - GGS), have played an active role in preserving the region's socio-cultural identity. These grassroots initiatives have complemented formal governance structures, creating a dynamic interplay of interests, power dynamics, and collaborative efforts. The GGS framework highlights the complexities of navigating such diverse and, at times, conflicting objectives to achieve a sustainable future for this region.

This paper explores governance and planning at two interlinked scales: the Saeftinghe region and the broader Flemish-Dutch Delta. By examining how governance frameworks integrate both formal and informal actors, the study sheds light on the interscalar dynamics that underpin sustainable spatial planning in transnational contexts. Particular attention is paid to the intricate relationships among stakeholders, including governmental bodies, port authorities, environmental organizations, and streekholders. The analysis highlights how these actors navigate the tensions between environmental conservation, economic development, and social cohesion, ultimately shaping the region's trajectory.

Saeftinghe's experience offers valuable insights into the challenges of coordinating cross-border planning, managing competing interests, and fostering resilience in transboundary territories. Navigating through these conflicting interests and power dynamics, this article delves into the intricate web of relationships among the

streekholders and stakeholders to understand the interplay between nature-port-society in Saeftinghe and the impact of it in the Flemish-Dutch Delta. This study contributes to the broader discourse on interscalar governance and cross-border planning by illustrating how the interplay of nature, port, and society in the Flemish-Dutch Delta provides a pilot case for sustainable methodologies and strategies. It aims to find the potential of multi-level and collaborative governance frameworks in addressing the complexities of transnational territories.

Keywords:

Transnational territory; Stakeholder dynamics; Spatial planning; Flemish-Dutch Delta;

T_04 GOVERNANCE (A) / 1338

Public-Private Partnerships in Urban Regeneration Projects: the Italian context and the case of “Porta a Mare” in Livorno

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Urban regeneration has been included in the urban planning of different cities, either as a response to observed urban degradation and decline or to give new functions to obsolete areas and control urban growth. Despite its enormous importance in today's urban contexts, urban regeneration is not a simple task, and, in many cases, urban regeneration projects are complex, involving different types of risks and high investments. Furthermore, it is known that the public sector, as the provider of several types of infrastructure and public services, does not have the resources to meet all of today's urban demands. In this sense, the actions of the private sector through Public-Private Partnership (PPP) agreements can be strategic in urban regeneration and the development of urban regeneration projects.

In the Italian case, Public-Private Partnership arrangements can be of three types: contractual, institutionalized, and negotiable. Urban Regeneration, in the Italian context, aims to increase the value of the existing.

However, implementing PPP arrangements in urban regeneration projects is controversial, and the initial objectives are not always achieved. Despite sounding good in theory in many cases, these projects do not meet their initial objectives, do not achieve the public service objectives proposed, and have negative consequences, both in financial and social terms.

Therefore, it is important to better understand best practices to make these partnerships work more effectively. Best practices can be observed if the Critical Success Factors (CSFs) are being followed. Despite this, studies about CSFs in PPPs in urban regeneration projects are limited. Studies that analyze specific contexts or cases, which could benefit the understanding of these practices, are also limited.

In this sense, this study aims to analyze the Italian context concerning PPP agreements in urban regeneration projects and a specific case of an urban regeneration project carried out through a PPP agreement - the Livorno Port project called “Porta a Mare”. The “Porta a Mare” project, carried out through an institutional PPP, aimed to regenerate a sprawling industrial area and give it new urban functions.

To this end, the study uses a previously established framework, which considers clusters related to the external environment related to the PPP projects - a country's enabling environment that facilitates or does not facilitate the implementation of partnerships and the exogenous factors found in that country - and the internal environment of the PPP projects - referring to the partnership itself and its different phases - the preparation

phase, the procurement phase, and the contract management phase.

The analysis was based on primary data, resulting from interviews with the players involved, and secondary data, extracted from laws, regulations, official documents, scientific articles, and promotional documentation.

The results highlight the CSFs that have been well met and the factors that should be better developed in the Italian context and the specific case study. Furthermore, the study demonstrates the complexity of PPP arrangements in urban regeneration projects and the results obtained from these practices, including their social, economic, urbanistic, and architectural impacts.

The analysis of the Italian context and the case study based on the framework provide a better understanding of the CSFs for PPP agreements in urban regeneration, contributing to the literature on the topic and potentially assisting public and private managers in improving these practices.

Keywords:

Public-Private Partnerships; Urban Regeneration; Critical Success Factors; Italy; Livorno

T_04 GOVERNANCE (A) / 705

Impacts of rapid policy changes on sustainable urban development: a dynamic assessment based on China's Urban Green Action and SDGs

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Achieving sustainable urban development is a critical pathway for advancing the Sustainable Development Goals (SDGs) (Klopp and Petretta, 2017), and the implementation of effective and sustainable policies is essential to achieving this objective (Lowe et al., 2022). In this context, China has launched a series of the Urban Green Action (UGA) plans, such as the Eco-Garden City, the National Forest City, the Park City initiatives. These plans include a number of policies and corresponding indicator systems designed to provide nature-based solutions to the socio-environmental challenges associated with rapid urbanization (de Jong et al., 2016). However, research suggests that in China's top-down governance system, rapid policy changes are often key drivers of urban change and development (Jia et al., 2020). While previous studies have extensively explored the implementation effects of the China UGA policies (Zhang et al., 2021, Wang and Cheng, 2024), there remains a lack of in-depth analysis on whether rapid evolution of these policies impacts the long-term sustainability of SDGs.

To address this gap, the study examines the relationship between dynamic changes in UGA policies and sustainability urban development. Specifically, it evaluates the sustainability of these policies by analyzing their effects before and after implementation. The study focuses on addressing two key research questions: 1) Are there differences in SDGs-oriented sustainable urban development at different stages of UGA policy implementation? 2) To what extent can these differences be attributed to shifts in the three sub-three UGAs polices, namely the Eco-Garden City, the National Forest City action and the Park City initiatives?

Using Hangzhou City as a case study, this study quantitatively analyzes the impacts of the three sub-three UGAs on the SDGs across three implementation phases (2005-2009, 2013-2017, and 2019-2024). An indicator system aligned with the United Nations 2030

Agenda for Sustainable Development (UN-SDGs) framework was constructed, featuring 21 indicators across three dimensions of economy, society and ecology. Propensity Score Matchin (PSM) and Difference-in-Difference (DID) models were employed to systematically assess how shifts in the sub-UGAs influenced the sustainable development of Hangzhou City.

The findings reveal the following: 1) Overall, Hangzhou's coherence in sustainable development has improved significantly between 2005 and 2024, reflecting the positive role of the three sub-UGA policies in promoting the city's long-term development. 2) Notable improvements in social and ecological indicators were observed after 2008, suggesting a strong correlation between UGA policy shifts and progress towards the SDGs; 3) Although rapid changes in UGA policies have had complex impacts on long-term SDGs progress, the continuous improvement and enrichment of indicator systems have contributed to improvements in social indicators and the balanced development of economic and ecological dimensions.

The study reveals the dynamic relationship between policy changes and urban development, highlights the importance of developing coherent and long-term effective policies, and provides valuable insights for refining the implementation strategies of UGA plans to enhance urban sustainability.

Keywords:

Policy effect; the Urban Green Action; Sustainable development goals; Hangzhou

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T_04 GOVERNANCE (A) / 1368

What's the planner's role in policy making for sustainability? Using Q methodology to explore how public planners perceive their scope of action

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In the context of planning, sustainable development is a ubiquitous yet vague goal which can be pursued through a broad range of policies and policy mixes (Griggs et al., 2017; Gunder & Hillier, 2009). Neither of these policies are unavoidable or self-evident. Rather,

they represent conscious or unconscious choices, determined by different knowledges, path dependencies, institutional frameworks and the actions and interactions of individuals. Consequently, they are the outcome of the dialectic between agency and structure (Giddens, 1984).

This contribution aims to explore what role individual public planners play in the creation of policies geared at sustainable development –or more precisely how they perceive their influence. The literature suggests that there are different ideal types of actors: the “doers”, who strive for pragmatic solutions; the “entrepreneurs” who use creativity and networking skills to tap existing potentials; the “bureaucrats” who aim for inclusion, dialogue, and improvement of rules within an established system; and the “neutrals” who focus on their technical expertise or their own careers (Purkarthofer and Stead, 2023).

These theoretical actor types will be contrasted with the data obtained through an online Q questionnaire in which public planners are asked to sort statements about their work practices and perceived influence. Q methodology is able to elicit, evaluate and compare subjective viewpoints (Robbins and Krueger, 2000) and is therefore suitable to delineate a nuanced picture of planners’ self-assessment regarding their role in the policy making process. The study invites public sector planners from four countries (Austria, Finland, Italy, United Kingdom) to participate.

Investigating the leeway of planners contributes to shed light on the question where policies aimed at sustainable urban development become concrete and how agency plays a decisive role in defining actions in a specific context. Such a view enables us to move beyond blanket statements such as “agency matters”/ “structure matters” and towards an empirically informed view of how planners perceive their role and agency in policy making. A better understanding of planners’ scope of action can reveal new perspectives on sustainability leadership (Purkarthofer, Halko and Mäntysalo, 2024), the tensions between technocratic modes of governance and the complexities of places (Raco and Savini, 2019) and help to reflect on the (changing) role of the planner (Fox-Rogers and Murphy, 2016).

Keywords:

actor; structure; sustainability; leadership; transformative agency

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T_04 GOVERNANCE (A) / 1507

Similar Networks, Different Discourses: Comparing interpretive frameworks for climate adaptation in Dutch water and road infrastructure planning

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Infrastructure networks face significant challenges due to climate change (Tavasszy et al., 2016). Road networks, in particular, are vulnerable to extreme weather events, potentially leading to disruptions such as flooding or subsidence, especially when multiple climate drivers interact and amplify each other (KNMI, 2023). Despite road infrastructure being recognized as critical infrastructure (OECD, 2019), climate adaptation in this sector remains underexplored (Tavasszy et al., 2016). By contrast, the water infrastructure sector in flood-prone European countries has prioritized climate adaptation on political and policy agendas, shifting towards integrated flood risk management (Restemeyer et al., 2024).

Although road and water infrastructure sectors are often managed by the same authorities (e.g. the Netherlands), cross-sectoral learning remains limited and difficult (Arts et al., 2016). These difficulties can potentially be explained due to differences in the policy paradigm in which both sectors operate. Hall (1993) described a policy paradigm as an interpretive framework of ideas that enables or constrains the way in which policy problems are perceived and how they should be governed, how policy goals are formulated and which policy instruments are used for attaining the formulated goals. Within this definition four interrelated components of policy paradigms can be found: an interpretive framework, policy objectives, an instrument logic and the role of governance institutions (Kern et al., 2014).

This study is focused on the interpretive frameworks of both the water and road infrastructure sector. Based on Hall's (1993) conception of policy paradigms, we define the interpretive framework as a set of ideas and perspectives through which policymakers perceive, define, and address policy problems. This framework influences the selection of policy goals, the preferred instruments for attaining these goals and the role employed by governance institutions. Therefore, it enables and constrains the policy choices made within a prevailing policy paradigm (Hall, 1993; Capano and Howlett, 2024).

The aim of this study is to analyse the ideas, values and perspectives that shape the different climate adaptation discourses of water and road infrastructure providers in the Netherlands and to deepen our understanding of what constitutes an interpretive framework as part of policy paradigms. We deliberately focus on the Netherlands as both water and road infrastructure has received international acclaim and are considered advanced (Arts et al., 2016; OECD, 2014; WEF, 2019; Zevenbergen et al., 2013). To this end, we will employ a Q-methodology consisting of several steps (Busscher et al., 2022). First, we analyse policy documents from both the water and road infrastructure sector and select a series of statements. Second, we develop a matrix accommodating the statements using a 7 point Likert scale. After that, we conduct interviews with professionals from both sectors to fill out the Q-sort by letting respondents prioritize the statements. Finally, we analyse the data using Ken-Q-analysis software.

The expected outcomes of this Q-methodology analysis will provide insights into the different discourses or interpretive frameworks on climate adaptation within the water and road infrastructure sectors. By identifying distinct groups based on shared viewpoints, the study will reveal clusters of professionals who align with particular discourses. These groups may differ in their perceptions of climate risks, preferred adaptation strategies and the role of governance institutions in implementing adaptation measures. The findings will contribute to a more nuanced understanding of policy paradigms and highlight potential barriers and opportunities for cross-sectoral learning. Additionally, the study is expected to inform policymakers about the diversity of adaptation discourses within infrastructure sectors, offering pathways for fostering collaboration and integrating perspectives across policy domains. Ultimately, this research will deepen our understanding of the different discourses and interpretive frameworks guiding the transition to climate adaptive infrastructure networks.

Keywords:

Policy Paradigms; Climate Adaptation; Q-methodology

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T_04 GOVERNANCE (A) / 1372

State-local political interactions in governing complex regions: empirical evidence from cross-jurisdictional metropolitan regions Yangtze River Delta in China and Rhein-Neckar in Germany

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With enhanced inter-city connectivity and extended urbanization, cities were expanding beyond their traditional city limits to become global city-regions through metropolisation (Scott, 2001). It has led to the bursting open of city-region boundaries, where cities and city-regions in proximity merge into vast, complex, and often cross-border territories (Brenner, 2019). These processes pose challenges for governance and planning across jurisdictions worldwide (Harrison & Gu, 2021; Loh & Goger, 2020; Yan & Growe, 2022). Against this backdrop, critical questions arise: How do supra-regional and intra-regional public actors navigate rescaled territories and engage with relational networks? What dynamics and hidden politics shape the governance of such complex regions during the metropolisation process in different geopolitical contexts?

To address these questions, we employed social network analysis to examine historical state-local political interactions in two cross-jurisdictional metropolitan regions: the Yangtze River Delta (YRD) in China and the Metropolregion Rhein-Neckar (MRN) in Germany. The findings, based on content analysis of regional policies and key-insider interviews, reveal that regional territories have emerged as platforms for accommodating diverse interests, and supra-regional actors (e.g., the State and higher-level governments) act as strong drivers for collective actions in both metropolitan regions. Intra-regional actors (multi-level governments) perform multiple brokerage roles, including liaison, coordinator, gatekeeper, and representative, within regional governance networks.

To further understand the mechanisms behind these dynamics, we compared the continuities, discontinuities, and underlying cartographic representations in three versions

of trans-regional plans in YRD, approved by China's central government, with two versions of trans-regional plan in MRN, supported by the State Treaty co-signed by three German states. The results highlight dynamic institutionalization in both cases, along with state-orchestrated regional cooperation in establishing legally binding plans across jurisdictions. However, a key contrast emerges: while the megaregional practices of the YRD exemplify government entrepreneurship, the MRN case underscores the influential role of global enterprises in shaping regional development.

Our paper contributes to the existing literature on cross-jurisdictional governance and explores the combination of territorial and relational perspectives in analyzing and comparing state-local interactions and governing roles in different cases. Ultimately, these understandings of dynamic geopolitical processes in governing complex regions call for more systematic research and international comparisons across multiple cases.

Keywords:

State-local political interactions; cross-jurisdictional governance; social network analysis; international comparisons

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T_04 GOVERNANCE (A) / 1379

Navigating Conflicts and Paradoxes. Analyzing the Interaction of Urban Regeneration, Local Governance, and Public Policy in the Tirana Riverside Project

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The covid-19 pandemic of 2020 hit Albania just three months after the earthquake of 29 November in the Durrës area, with 54 victims and hundreds of buildings damaged. The two crises reshaped the terrain of the political agenda toward the territory in terms of both more centralizing planning policies and the decision-making processes of rebuilding and renewal. The author believes that, for urban renewal and regeneration projects to work successfully, we need to design plans that takes into account the social, cultural, and historical background of the neighborhood or the area under rebuilding. The research underscores the importance of comprehending tensions generated during urban planning and the rebuilding process in Albania. It delves into the complex interaction between urban regeneration, urban planning policies, and the instruments used by

the government and the center. Using theoretical frameworks based on urban regeneration experiences, the complex landscape of conflicts within the territory, stemming from the transformation of technical disputes into political discussions, was examined. The study chosen for this research article, is a case study-research, located in Tirana, Albania. Identified as the "Tirana riverside" project by Stefano Boeri, which involves a 29-hectare urban regeneration plan of a new "green neighborhood" as a response to the earthquake. The new neighborhood is designed to be self-sufficient, equipped and designed as a smart city that will be able to cope with both seismic and pandemic emergencies. The project aims to create a resilient urban environment that reflects the diverse needs of its residents while fostering a sense of community and connection to nature, including the Tirana River as an integral part of it.

This study employs a mixed-methods approach, integrating qualitative and quantitative data from empirical research to elucidate the intricate relationship between technical and political instruments utilized in urban planning and renewal. It examines the public policy tools applied during the urban regeneration process, as demonstrated in the case study.

The results that come from the juxtaposition of empirical data with those from primary sources (neighborhood residents), and secondary (official documents) reveal not only the complexity of the process of reconstruction and renewal with urban development (social, economic and cultural), but also emphasize the importance of the involvement of stakeholders in the planning process. The tensions generated during the process of expropriation and reallocation of residents, have been the focus of interviews with residents to also address the *sui generis* conflict for the area under study.

This study adds to the ongoing conversation about urban renewal and regeneration processes, the decision-making models that go along with them, and urban planning policies by using real-life data from Tirana Riverside. In summary, this study highlights the importance of embracing the complex nature of urban planning, positioning these complexities as catalysts for innovation rather than obstacles to progress.

Keywords:

Urban Regeneration, rebuilding, urban policies, social conflicts, urban planning instruments

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T_04 GOVERNANCE (A) / 1377

Governing climate adaptation: technical and institutional en-

ablers from Bologna's transformational case

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This paper examines governance structures and institutional learning in urban transformation processes for climate change adaptation, focusing on Bologna's experience within the European Urban Initiative. This program has funded 22 innovative projects across European cities, and Bologna's TALEA is currently in the early stages of its journey, laying the foundation for future physical and social transformations of urban space.

The TALEA project addresses the pressing challenge of urban heat islands, a growing concern for Mediterranean cities facing increasing climate impacts. At its core, the project introduces the concept of "green cells"—100x100-meter interventions embedded within the dense urban fabric to integrate targeted greening solutions. These interventions aim not only to mitigate urban heat effects but also to strengthen overall urban resilience. However, the project's significance goes beyond its technical aspects; it prioritizes a participatory and collaborative governance approach. Public authorities, research institutions, implementation partners, and local communities actively contribute to co-designing and co-creating these transformations, emphasizing an inclusive and sustainable vision for urban planning.

TALEA's governance model is built on multi-level collaboration between local authorities, research institutions, and international city partners, facilitating the exchange of knowledge and best practices across borders. The project serves as a case study for trans-boundary planning and policy transfer, as partner cities in France, Romania, and Latvia engage in knowledge-sharing and explore the applicability of Bologna's approach within their own urban contexts. This highlights the role of flexible governance structures and informal networks in advancing adaptation solutions beyond rigid institutional frameworks.

While urban greening has become a priority in European policies and national strategies, integrating these interventions into public and private urban transformation processes remains a challenge. Bologna's experience illustrates the interplay between soft knowledge—such as governance processes, participatory co-design, and stakeholder collaboration—and hard knowledge, including the technical design and implementation of greening measures. Both dimensions are crucial for the success of transformative urban actions.

By examining the relationship between regulatory frameworks and participatory governance, this paper explores the enabling conditions and institutional barriers that shape the implementation of urban greening projects in dense Mediterranean cities. It raises key questions for broader European applicability: What lessons can Bologna's early experiences offer to other cities embarking on similar initiatives? What challenges arise in the initial phases, and how can they be effectively addressed? What governance structures and innovative solutions can support cities in overcoming barriers and driving long-term urban transformation?

This paper contributes to the broader discussion on governance and institutional change in urban planning by exploring how multi-level collaboration, participatory governance, and transnational learning shape urban adaptation to climate challenges. By reflecting on these dynamics, it seeks to deepen our understanding of governance mechanisms that can accelerate sustainable urban transitions across Europe.

Keywords:

EU policies, CC adaptation; Policy transfer; Collaborative planning;

T_04 GOVERNANCE (A) / 1409

Public-Private Joint Ventures in Urban Development: Identifying and Governing Value Tensions

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Urban development in the Netherlands increasingly addresses a wide range of societal challenges, including housing shortage, sustainable energy transition, social inequalities, and climate change adaptation and mitigation. As a result, development processes have become increasingly complex. This complexity has led to a renewed interest in Public-Private Partnerships (PPPs) as governance strategies in Dutch urban development to leverage the strengths of both public and private sectors in pursuing shared objectives and creating public value (BPD, 2023; Hümmels, 2017; Kort and Klijn, 2011; Ten Have et al., 2017). A trend that aligns with the New Public Governance discourse, which advocates for more networked forms of collaboration between public and private actors to address today's wicked problems, emphasizing the importance of cooperation, co-production and shared responsibility rather than hierarchical control or purely contractual relationships (Ansell and Torfing, 2020; Krogh and Triantafillou, 2024).

However, concerns persist about potential tensions between public and private values within partnerships. Public-Private Joint Ventures (PPJVs), in particular, face criticism for governance designs that distance local politics from operational decision-making, benefiting progress and efficiency on the one hand, but potentially undermining values such as democratic legitimacy, transparency, and accountability on the other (European Commission, 2004; Reynaers, 2014). Another critique is that the differing organizational cultures and objectives of public and private actors can lead to conflicts over priorities and decision-making processes, potentially undermining the effectiveness of the partnership and putting public goals or values at stake (Van der Wal, 2008). However, studies identifying and providing overview of the key value tensions in urban development partnerships are lacking. Furthermore, the dichotomous market versus state perspective and respective value differences are primarily theoretically grounded, and –certainly in the urban development context –has been demonstrated to a limited extent empirically.

Great scholarly attention has been given to critical success factors for the performance of PPPs across sectors, often categorized into two main groups: those based on contractual governance (e.g. clear contracts defining allocation of risks and responsibilities, application of sanctions, performance metrics) and those rooted in relational governance (e.g. trust, communication, openness) (Warsen et al., 2019; Koppenjan et al., 2022). Still, there remains a significant gap in understanding the contractual and relational governance conditions that drive the performance of networked PPPs that go beyond contractual relationships, which are particularly evident in urban development. Moreover, there is limited empirical evidence of how contractual and relational governance elements relate to value tensions.

The aim of this contribution is twofold. Firstly, by identifying the key value tensions specifically within PPJVs through a literature review and semi-structured interviews with professionals experts. Secondly, it aims to explore how these value tensions become evident and relate to contractual and relational governance conditions in Dutch urban development.

The findings reveal that PPJVs can mediate value tensions while maintaining effectiveness by finding the right balance between contractual governance and relational governance. Structured agreements play a role in aligning financial objectives with societal goals through balanced risk-sharing and contractually defined goals, while keeping contracts as light as possible preserves efficiency, effectiveness and the ability to navigate based on relational norms. Contractual control mechanisms such as an independent director, external audits and internal checks can safeguard public values like transparency and accountability, reduce the likelihood of opportunistic behaviour and mitigate value tensions. Contractual and relational governance conditions relate to how value tensions are evident in urban development, and can simultaneously provide opportunities and actionable perspectives to address them. By elucidating this interplay, the paper informs

the design of effective governance structures for contemporary urban development challenges that support public value creation.

Keywords:

urban development, Public-Private Partnerships, value tensions, Public-Private Joint Venture, governance

References:

Because of word limit I had to put the references in the comment section

T_04 GOVERNANCE (A) / 1550

Multi-Level Collaborative Governance for Environmental and Climate Adaptation: Insights from EU-funded Projects

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This contribution presents a critical reflection on the implementation and outcomes of several EU-funded projects (Life and Interreg), developed by the authors, which have supported the establishment of an innovative collaborative and adaptive environmental governance that have stimulated a governance system by integrating formal regulatory frameworks with voluntary agreements and community-driven initiatives that operate across multiple levels of governance.

Specifically, this governance framework is structured on two interrelated levels. At the regional level, governance mechanisms include “Pacts”, open and permanent working groups where relevant stakeholders share common environmental and adaptation goals by signing a voluntary agreement, and “Environmental Contracts”, voluntary governance tool that engage institutions, local authorities, associations, and citizens in a participatory process to promote the sustainable management of a water basin, integrating water resource protection, hydrogeological risk prevention, ecological and landscape enhancement, and socio-economic development (Bastiani, 2011). Examples include the “Pact for Biodiversity” developed within the Life Greenchange project (2018 -2023), the “Pact for Pollinators’ Adaptation to Climate Change” from the Life BEEadapt project (2022 -ongoing) and the “Agro Pontino Coast Contract” developed through the Interreg Med Coasting project (2018 -2019) and through regional funding programs. At the local level, “land stewardship agreements”, a voluntary governance tool that fosters collaboration between landowners, public institutions, and local organizations to promote the sustainable management and conservation of natural and cultural landscapes through long-term, participatory commitments (Sabaté et al., 2013), have been promoted by Life Greenchange project, Life BEEadapt project and by the Interreg EuroMed Coastrust project (2024 -ongoing).

This contribution explores this multi-layered governance system from the perspective of the research group actively involved in these processes, highlighting critical tensions, challenges, opportunities and potential trajectories emerging from the intersection of institutional structures and community practices fostering transformative action for environmental sustainability and climate adaptation.

One of the key challenges in implementing collaborative governance is ensuring the sustained engagement of diverse stakeholders. While actors are often involved in the strategic planning phase, difficulties arise in securing long-term participation during the implementation and management of interventions. This underscores the need for governance mechanisms that go beyond formal agreements and embed inclusive, bottom-up decision-making processes.

To address these challenges, the research group has experimented with innovative approaches aimed at enhancing active engagement of local stakeholders. In this framework, Pacts and Environmental Contracts (at regional level) act as catalysts for adaptive and collaborative land stewardship practices (at local level). In particular, land stewardship agreements activate mechanisms of continuous collaboration and interaction among public institutions, associations, and economic actors while promoting innovative models of territorial management.

Specifically, this contribution presents the methodological approach and preliminary results of the EU Interreg Coastrust and Life BEEadapt projects, that starting from a climate change adaptation action program, are now developing community empowerment processes and testing innovative governance solutions that strengthen capacity to manage socio-ecological transitions of institutions and communities.

Keywords:

collaborative governance; voluntary agreement; land stewardship; environmental contract

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T_04 GOVERNANCE (A) / 1567

Collaborative governance through the Mediterranean: Framing a Community of Practice for Wetland Contracts

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Wetlands are vital ecosystems, supporting 40% of global biodiversity while providing essential services such as flood regulation, carbon storage, and water purification. Despite their significance, wetlands rank among the most endangered habitats worldwide. Over the past 50 years, more than 35% have been lost due to urbanization, agricultural intensification, and pollution. In Europe, nearly half of all wetlands have disappeared since the 20th century, with the Mediterranean region facing particularly acute threats. These challenges are exacerbated by the intensification of agriculture and inadequate water management, intertwining ecological and governance concerns that demand innovative and collaborative solutions.

Wetland Contracts have emerged as effective tools for governing wetland areas. Although they are formally recognized only in France, Belgium, and Italy, Wetland Contracts provide a structured yet flexible framework for stakeholders, including landowners, local governments, and private organizations, to negotiate shared goals for wetland preservation and sustainable use. They exemplify bottom-up governance by aligning biodiversity conservation with sustainable practices such as eco-tourism and agriculture. The WE GO COOP project adopts a dual-level approach to strengthen and expand the use of Wetland Contracts. This strategy combines upscaling the tool through the creation of a Community of Practice (CoP) at the Mediterranean level and downscaling it to new contexts, including Croatia, Portugal, Albania, and regions in the South and Middle

East Mediterranean. Simultaneously, the project aims to reinforce the tool in countries where it has already been tested, such as Italy, Greece, and Spain. This transnational cooperation allows WE GO COOP to address wetland challenges at scale while ensuring the adaptability of its governance models to diverse local contexts.

At the core of the project's upscaling efforts is the establishment of a Community of Practice (CoP), a transnational network of policymakers, researchers, practitioners, and local communities. The CoP fosters dialogue, knowledge exchange, and the dissemination of best practices, supporting the development and implementation of participatory governance tools like Wetland Contracts. It represents a collaborative space where stakeholders can bridge gaps between scientific research, policy frameworks, and community action, facilitating multi-level and multi-stakeholder collaboration.

One of the project's milestones was the first thematic seminar, "Framing the Community of Practice," held in Rome. This event provided a platform for stakeholders to discuss shared challenges, define governance objectives, and explore strategies for enhancing wetland management. The seminar highlighted the critical need for tools that enable collaboration across sectors and levels of governance, while integrating diverse perspectives into decision-making processes.

A key deliverable of the project is the development of a virtual collaborative platform designed to support the CoP's activities. The platform serves as a centralized repository of information and resources on signed Wetland Contracts at the Mediterranean level, together with relevant guidelines and handbooks. It facilitates continuous interaction, capacity-building, and the sharing of knowledge among CoP members, regardless of their geographical location. By integrating these resources into an accessible digital space, the platform enhances the effectiveness, scalability, and transferability of collaborative governance practices.

This work presents the first results of the project and illustrates how the virtual platform functions as a pivotal tool for advancing wetland governance. By enabling the CoP to access, share, and co-create knowledge, the platform plays a central role in addressing the ecological and socio-economic challenges faced by wetlands in the Mediterranean and beyond.

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T_04 GOVERNANCE (A) / 1626

Establishing the foundations for a Transnational Network for Integrated Spatial Planning. Preliminary efforts and insights

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Planning cities and communities is a rather complex matter, encompassing different dimensions and aspects (urban, transport, environmental, etc.). The traditional approaches dealt with these aspects in isolation, thus ignoring interdisciplinary effects and interactions. In contrast, recent approaches prioritise integrated solutions that holistically deal with urban space. To that end, there is a compelling need to promote initiatives that bring “Integrated Planning” to the forefront. In this context, this study aspires to establish the foundations for fostering an Integrated Network that brings together various stakeholders including individuals and organisations/associations. This network will be a conglomerate of local communities comprising diverse members (policy, academia, civic society and planners) that will cooperate and share knowledge. Herein, Integrated Planning is defined as a concept entailing Urban, Mobility, Participatory and Evidence-based planning and “integration” is envisioned under a threefold framework: a) Discipline-based, b) Method-based and c) Role-based.

However, when it comes to establishing such a holistic and diverse network, a robust conceptual framework outlining the organisational model and the basic principles should be developed. Furthermore, successful and active networks necessitate “room” for allowing their members interact and exchange experiences and insights. Finally, a transnational, cross-cultural and cross-sectoral community shall be based on a participatory learning approach, fostering inclusivity and strong bonds between the members. Bearing upon those key points, this presentation will focus on the activities performed to articulate a coherent Charter entailing the vision, mission, and strategic objectives of this Network. More specifically, this Charter will detail the governance structure, roles, and responsibilities of various stakeholders, and establish clear protocols for decision-making processes. Next, this presentation will also demonstrate the “Virtual Knowledge Hub” consisting of a Wiki-Repository and an Open Learning Platform that is addressed to multiple target groups such as academics, students, learners, researchers, practitioners, policymakers, local administrators, etc. Last but not least, there will be a brief description of the Participatory approach guide, a step-by-step guide with material and resources that will horizontally run all activities of the Network, to promote inclusion and democratic participation in all Network’s activities and especially in the knowledge co-creation and sharing process.

Through establishing a robust conceptual and organisational framework, this research study will lay the proper ground for a Transnational Network for Integrated Spatial Planning destined to promote “Integrated Planning”. Apparently, this endeavour represents the first attempt to establish such a network, clearly oriented toward fostering “Integrated Planning”. Although challenging, this initiative would be very crucial for all aspects of planning, i.e., research projects, planning schemes, educational activities, and civic engagement, going beyond traditional approaches and embracing a new planning culture. This Network is expected to be a platform for intermingling different voices related to planning and a game-changer towards sustainability and inclusivity.

Keywords:

integrated planning; urban planning; mobility planning; participatory planning; transnational network

References:

integrated planning; urban planning; mobility planning; participatory planning; transnational network

T_04 GOVERNANCE (A) / 1759**Enhancing Land-Use Governance in Estonia: The Need for Standardised Terminology and Data Integration****Author:** Kärt Metsoja¹**Co-author:** Evelin Jürgenson¹¹ *Estonian University of Life Sciences***Corresponding Authors:** evelin.jyrgenson@emu.ee, kart.metsoja@emu.ee

Despite numerous initiatives at the European level to reduce land take, built-up areas continue to expand more rapidly than population growth throughout Europe (Schiavina et al., 2022). Legal and policy frameworks at the EU, national, and local levels outline land protection, soil management, and ecosystem restoration obligations. Moving forward, cities will increasingly need to redevelop within their existing footprints rather than expand into greenfield sites (Decoville and Feltgen, 2025). However, the effectiveness of measures to improve land-use efficiency depends on coherent implementation, robust governance structures, and sufficient monitoring capacities.

In Estonia, an ongoing research and development project is underway to create a comprehensive understanding of land-use needs by integrating economic, environmental, and social perspectives (R&D project: Land and soil use). The study has highlighted significant discrepancies in how stakeholders interpret key land-use concepts. A fundamental prerequisite for effective governance is a shared and standardised understanding of these terms. Political objectives often conflate land cover, land use, and land condition, leading to terminological ambiguity—an issue already noted in previous research (Marquard et al., 2020). This lack of clarity may result in inconsistencies in policy implementation and monitoring. Additionally, it is crucial to identify which national or European data sources are best suited for specific monitoring tasks, as a universal “one-size-fits-all” solution does not exist.

For example, the Corine Land Cover database indicates approximately 26km² of land artificialisation in Estonia between 2012 and 2018. In contrast, the LULUCF data from the climate report for the same period shows an increase of 101 km² in the settlement area, highlighting a fourfold discrepancy (Jürgenson et al., forthcoming).

Similar inconsistencies arise when comparing land take and soil sealing, two key concepts in urban development. While land take refers to converting natural or agricultural land into built-up areas, soil sealing covers the soil with impermeable materials, such as concrete or asphalt (Prokop et al 2011). These differences matter—not just in technical definitions, but also in how we measure and manage urban expansion, infrastructure growth, and environmental protection.

Estonia clearly needs an integrated data approach that extracts the most valuable insights from different datasets while maintaining a clear distinction between land use, land cover, and ecosystem conditions. For example, suppose certain land-use features (such as roads and buildings) are updated frequently at the national level, the integration process should prioritise this high-resolution data while using broader European datasets to supplement areas where national data has worse temporal resolution.

Keywords:

land take; soil sealing; legal and policy framework; standardised terminology

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T.04 GOVERNANCE (A) / 1704

The added value of Section 106 Agreements and CIL in England

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Land Value Capture (LVC) mechanisms, such as Section 106 agreements (S106) and the Community Infrastructure Levy (CIL), are widely regarded as crucial tools for funding urban development by redistributing the value generated through public investments in England. While much of the existing literature has focused on the economic implications of these instruments—particularly their effects on developers and landowners—limited attention has been given to their equity outcomes or their contributions to spatial and social justice within local contexts. This study directly addresses this research gap by examining how S106 and CIL contribute to equitable development across England, with a specific focus on justice and fairness in the distribution of public benefits.

To address this, the paper applies Nancy Fraser's three-dimensional framework of social justice—redistribution, recognition, and participation—integrated with concepts of spatial justice (Fraser, 2008). This combination allows for a comprehensive analysis of the geographic distribution of benefits, the cultural-status implications of LVC policies, and the decision-making processes shaping their implementation. While S106 agreements focus on site-specific impacts, such as affordable housing and infrastructure provision, CIL operates as a broader, flat-rate tax to fund community-wide infrastructure. However, disparities in policy design, market conditions, and institutional capacity raise concerns about whether these mechanisms are capable of achieving their intended equitable outcomes.

This study adopts a mixed-methods approach, using the Digital Land database, which records 22,786 developer contributions across 62 local authorities in England between 2010 and 2025. The research addresses two core questions: (1) What types of benefits have been funded through S106 and CIL across Local Planning Authorities (LPAs)? (2) How are these benefits distributed spatially within selected LPAs, and what does this reveal about spatial justice? Geospatial analysis will map the distribution of benefits, while qualitative interviews with decision-makers in 20 LPAs will explore the institutional and procedural factors influencing these outcomes.

Existing research indicates significant disparities in how benefits are allocated. Stronger

housing markets more effectively leverage S106 contributions, even in conjunction with CIL, while weaker markets struggle to capture similar value (Lord et al., 2022). In such cases, the justice potential of these instruments seem to be conditioned to local contingencies and market dynamics. By linking the variation in public benefits to differences in local market conditions, institutional frameworks, and decision-making processes, this study sheds light on the challenges and opportunities for designing LVC policies that promote more equitable urban development.

Ultimately, this research contributes to the broader understanding of if and how LVC mechanisms can address systemic inequalities and promote justice in urban development. By examining both spatial and social dimensions of equity, it aims to inform the design and implementation of LVC policies that better balance economic objectives with the principles of justice and fairness in England.

Keywords:

social justice; spatial justice; developer contributions; land value capture

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T_04 GOVERNANCE (A) / 489

Construction of Regional Multi-dimensional proximity Network from the Perspective of Collaborative Agglomeration

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This study focuses on the construction of regional multi-dimensional proximity network and the application of collaborative agglomeration between regions, aiming to rethink the regional construction model and promote fair distribution of resources.

This study focuses on the construction of multidimensional proximity networks in regional areas and the exploration of their application in fostering regional collaborative agglomeration, with the ultimate goal of reimagining rural network models and ensuring equitable resource distribution.

By integrating complex network theory with the direct application of multi-dimensional proximity principles, the study delves into the network structure characteristics across various proximity dimensions in regional settings through the utilization of correlation network models and other analytical tools. These dimensions encompass geographical proximity, social proximity, institutional proximity, and cognitive proximity. In constructing these multidimensional proximity network at the regional scale, geographical proximity networks take into consideration factors such as water network density, settlement scale and hierarchy, spatial integration, and spatial accessibility. Meanwhile, social and institutional proximity networks encompass political policies, village regulations, clan relationships, social organization ties, and industrial development policies. The cognitive proximity network, on the other hand, captures the subjective cognitive level of villagers through comprehensive questionnaire surveys. Geographical proximity facilitates collaborative development by leveraging geographical similarities, while social and institutional proximity strive for consistency in technological advancements and development directions. Cognitive proximity embodies the internal

driving force of development and seeks ideological alignment. The study endeavors to identify whether the village is suitable for collaborative construction, thereby providing a scientific foundation for rural area development. The study is aimed at developing a versatile methodology for delineating regional clusters across a vast array of urban and rural areas, transcending administrative boundaries to foster coordinated regional development centered around cultural or industrial hubs.

The study uses Xinghua City, Jiangsu Province, China, as a case study. This study area, characterized by its dense water network and frequent inter-village communication within the Lixiahe region, serves as an exemplary context for studying rural multidimensional proximity networks. Study has found that in areas with high geographical proximity, due to geographical or spatial similarities, there is no necessary connection in village development, and the overall distribution shows a “core—correlation—edge” distribution. Villages with high social and institutional proximity have a high sense of cultural belonging and corresponding industrial development directions, such as having a unified fishery industry chain from aquaculture and processing to packaging and e-commerce sales, and have high potential for collaborative development. Villages with high cognitive proximity have a higher acceptance of village cooperation and collaborative development due to the influence of villagers’ education level and economic cognitive ability, and their high support can promote further agglomeration and collaborative development of villages.

Keywords:

multi-dimensional proximity—Agglomeration—coordinated development

T_04 GOVERNANCE (A) / 1962

Strategic metropolitan governance for resilience in practice: The Barcelona Metropolitan Commitment 2030 and the governance model in the German Metropolitan Region Rhein-Neckar

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The Metropolitan Commitment 2030 is a strategic framework led by the Metropolitan Strategic Plan of Barcelona (PEMB) which aims to create a more sustainable, equitable, and resilient metropolitan region by 2030, aligning with global objectives such as the United Nations’ Sustainable Development Goals (SDGs). At its core, the Commitment integrates a mission-oriented approach, which focuses on tackling complex, systemic challenges through collaborative, goal-driven efforts. Rather than addressing issues in isolation, this approach defines 8 specific missions—multidimensional objectives that engage diverse stakeholders, including public administrations, businesses, academic institutions, and civil society. These missions act as guiding beacons, fostering innovation, coordination, and shared responsibility across the metropolitan ecosystem.

The metropolitan region Rhine-Neckar is one of 12 officially recognised European Metropolitan Regions in Germany since 2005. The region is characterised by its unique regional cross-border governance with innovative integrated governance models and is fully responsible for the cross-border regional planning (land use planning) which belongs to the region in accordance with the State Treaty between the three Federal States Hesse, Rhineland-Palatinate and Baden-Württemberg. Therefore the region is also described as a pioneer of co-operative federalism in Germany. The case study

shows how transnational cooperation is organised and implemented in the metropolitan region and how well this model works in practice with regard to resilient spatial and governance structures.

Keywords:

Resilience; spatial planning; metropolitan governance

T_04 GOVERNANCE (A) / 1239

Youth participation in Structural Transition in Lusatia, Germany: Race Up Together or Race to the Bottom Alone?

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The involvement of young people in urban development is mandated by the UN Convention and has become a normative goal in regional and urban planning. This goal resonates in particular with the debates on urban commons, which emphasize the importance of engaging young people in shaping shared urban spaces, extending the concept of commons beyond lived experiences to the domain of shared urban futures. The way futures are imagined, articulated, and enacted reflects governance structures, public spaces, and the lived realities of urban dwellers. Futures are bound to places and frame how humans collectively or individually settle their space. In regions undergoing structural transition, youth participation is recognized by stakeholders as vital for crafting regional futures because it is young people who will inherit the region that is designed today. Yet, in practice, youth participation often falls short of its promise due to systemic and cultural barriers.

This paper examines youth participation in Lusatia, Germany, focusing on structural transition policies and their mechanisms on the side of institutional frameworks, as well as the perceptions, concerns, and aspirations of young people as they navigate the structural transition in their region. Drawing on qualitative data from regulatory frameworks, interviews, and focus groups, it situates youth participation at the intersection of urban realities and imaginaries, revealing a disconnect between policy frameworks and young people's lived experiences. Policies often emphasize abstract notions of economic and social restructuring, framed through quantitative metrics, while young people primarily engage with ramifications of structural transitions through direct interactions with their immediate environment. It is through everyday life experiences of the multiplicity of patterns and rhythms of urban space that they shape their understanding of structural transitions and their sense of agency within them.

Key findings highlight that young people frequently identify the lack of cultural capital as an obstacle to meaningful participation. They lack the means to effectively translate their experiences into the structured discourses of participatory processes. Many struggle to engage with institutionalized frameworks that focus on technical conceptualizations of urban space and temporality. Two concerning tendencies may be observed. First, a growing acceptance among youth that their voices will not be heard. Despite strong interest in participatory governance, young people express skepticism rooted in past experiences of limited follow-through and a perceived disregard for their input. This skepticism, coupled with a perceived disinterest in institutional participatory processes,

perpetuates cycles of disengagement. Second, the opposition to welfare benefits, which many young people perceive as overly generous and discouraging hard work. Referring to their own economic conditions, which they perceive as precarious, they argue welfare benefits unfairly reward those who do not contribute. This criticism reflects growing resentment toward the welfare system and risks fueling a broader decline in social protections. Combined with falling trust in planning processes, these attitudes create fertile ground for radical-right mobilization, particularly in the context of rising extremism in the region.

While positive regional changes, such as environmental improvements and economic diversification, are acknowledged, these are often overshadowed by uncertainties about individual prospects and future stability, which are frequently tied to inherited traditional views of employment and family life. The findings underscore the importance of meaningful participation in empowering youth to engage in structural change, ensuring that by playing an active role in shaping shared futures, they collectively redefine the commons as spaces of mutual interest rather than competing individual priorities.

Keywords:

youth; participation; transition; futures

T_04 GOVERNANCE (A) / 642

Spatial Planning and Experimental Governance: A Bioeconomy Framework for Sustainable Transformation

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Spatial planning is a complex process deeply rooted in institutional contexts, playing a pivotal role in facilitating societal transitions towards sustainability. The governance structures shaping planning are influenced by a network of institutions, regulations, and procedures, which determine the decision-making processes around land-use and spatial configurations. Planning institutions are central to local and infrastructure development. Transformative policy agendas, such as the bioeconomy, hold promise for designing and planning pathways towards enhanced sustainability. However, the implementation of sustainability visions and goals by institutions is often hindered by rigid frameworks, fragmented governance, and a lack of cross-sector coordination. These challenges stem from different views on sustainability, limited control over the private sector, and slow political decision-making. The governance frameworks provide the necessary structures to put policy visions like the bioeconomy into practice, enabling their application across diverse contexts. Therefore, implementing alternative governance frameworks that prioritise sustainability is crucial and could enhance the planning system's effectiveness. Experimental governance (e.g. testbeds, innovation districts, and living labs) and strategic spatial planning can help dismantle entrenched practices, foster learning, and enable institutional flexibility. Experimental governance often involves collaboration between stakeholders from the public, private, academic, and non-profit sectors to drive sustainable transformations. These collaborations aim to facilitate co-creation through decentralised decision-making and action processes, raising questions about interests, conflict resolution, and power dynamics. This paper examines the relationship between planning systems and sustainable transitions, focusing on the bioeconomy as a key driver for change. It explores how experimental governance can contribute to institutional reform, overcoming conflicts, and the promotion greater coherence in policy implementation, helping to actualise visions like the bioeconomy as a workable solution for ongoing sustainability challenges at different scales of governance.

Keywords:

Spatial Planning; Governance Arrangements; Experimental Governance; Sustainability Transitions; Bioeconomy

T_04 GOVERNANCE (A) / 1183

Civic initiatives, urban regeneration and urban planning participative processes: from collaborative to prefigurative frames.

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This paper explores the possibility of scaling up experimental practices emerging from civic initiatives by incorporating them into participatory urban planning processes linked to the construction of wider urban/territorial strategies. The hypothesis of this paper is that in order to enable this scaling up of civic initiatives, participatory processes need to be rethought and innovated, moving from a collaborative planning framework (Healey, 1997; Forester, 1999) to the concept of prefigurative planning as proposed by Davoudi (2023).

Focusing in particular on the practices of reuse of abandoned spaces and buildings and their transformation in 'creative hubs', the main idea underlying this paper is that re-generated spaces can be seen as "forerunning practices" (Tedesco, 2023), where future transformations are prefigured and enacted in the present.

Using Beauregard's (2013) distinction between site, context and place, this idea is tested in terms of whether it is possible to identify different roles played by this type of reused space within participatory urban planning processes.

This theoretical framework is applied to some case studies in Italian cities that are carrying out urban planning processes for the design of new urban master plans.

In particular, within these processes creative hubs are considered to be places, but their potential to scale up innovative practices is often not considered: they are not recognized as potential triggers for broader urban regeneration strategies but are instead treated both as project sites and places where institutions can organize meetings with citizens.

On the other hand, the Italian case studies highlight the importance of planning frameworks in supporting the transition from localised experimental practices to broader visions. For those seeking to promote innovative urban change - whether as activists, designers, administrators or public officials - it is essential to broaden participatory processes to better incorporate grassroots innovation. In particular, effective scale-up requires moving away from the traditional sequential approach of plan-project dynamics. Instead, projects need to be allowed to anticipate and inform the vision of planning tools, rather than being limited to temporary experiments.

Keywords:

Civic initiatives; urban regeneration; participatory processes

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T_04 GOVERNANCE (A) / 1599

Formal participation in environmental assessments. Examining the case of large-scale linear infrastructure projects.

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Environmental assessments (EAs) serve as key instruments for evaluating the socio-environmental impacts of large-scale infrastructure projects (Hanna and Arnold, 2022). They are essential for the implementation of energy and mobility projects as part of a sustainability transformation. Public participation is a crucial component of EAs, offering opportunities for stakeholders to engage, shape their environment, and influence decision-making (Sinclair et al., 2022).

However, formally implemented public participation in EAs is often criticised as insufficient –too late in the process, with no possibility to alter a project, and not designed for everybody, just to name a few (Doelle and Majekolagbe, 2023; Elling and Nielsen, 2018). This contribution investigates how legally regulated participation processes in EA procedures align with the criteria of “good” participation outlined in the literature. The goal is to develop a systematic approach for identifying gaps in legal participation frameworks and EA practices that can be applied across different countries.

The contribution focuses on environmental impact assessments of linear infrastructures in Germany where railway, road, and power grid projects undergo a formal approval process called the Planfeststellungsverfahren. These processes are complex, time intensive, involve numerous stakeholders and have to deal with diverse spatial impacts (Gharehbaghi et al., 2022).

The research follows three steps: First, key elements of public participation in EAs will be identified through a structured literature review of key publications. Second, the legal foundations of planning approval procedures and publicly available guidelines from permitting authorities will be analysed to determine at what process stage which form of public participation is mandated. Current debates on streamlining and the simplification of planning and assessment processes (given their potential impact on public participation) will also be considered. This analysis will be conducted through systematic, category-led document review and expert interviews.

Two outputs are expected: First, a process visualisation of the stages of planning and assessment showing when forms of formal public participation occur. Second, a list of criteria for good public participation and whether they are met by just fulfilling formal

requirements. It is expected that processes that only fulfill the minimum formal requirements, fail to meet essential participation criteria in EAs. The identified gaps provide a basis for further research on non-formal participation methods and their potential to enhance the quality of environmental assessment.

Keywords:

environmental assessment; public participation; large-scale infrastructure; energy and mobility transition

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T_04 GOVERNANCE (A) / 96

Rethinking Policy Learning in Urban Policy Mobility

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The question of how policy learning affects the localization of globally circulating policies has been central to our understanding of urban policy mobility. Within the policy mobilities literature, scholars from various disciplines, ranging from anthropology to geography and sociology to urban planning, have captured the interconnected urban processes and outcomes of global policy circulation, wherein policy actors learn and move policy ideas from place to place through global networks of policy communities.

Yet, this understanding of policy learning in urban policy mobility only limitedly describes the policymaking behaviors and learning activities of policy elites that primarily occur in the earliest moments of its overall experience. In practice, their localization in the actual policymaking context will feature more complex adaptive dynamics and interactions, in which various learned lessons and their (uneven) deliberation flow constantly between its constitutive stages. It entails multiple forms of knowledge exchange between a diverse range of policy actors from different governance levels with varying capacities to influence specific components of the whole policy cycle. Together, they will have a special consequence for the localized process and outcome of urban policy mobility.

In these reflections, this article explores diverse patterns of policy learning and their implications for policy outcome as an international 'best practice' not only travels to and arrives in a city, but also lives through multiple interrelated stages of its life cycle. The purpose is to highlight how multiple types of learned lessons, drawn from diverse sources of knowledge, become (differently) enmeshed, streamlined and articulated into the local formulation and implementation of a traveling policy practice, extending beyond the initial encounters of policy elites with its simplified narrative of success. It argues that the way in which the specific capacities of policy actors intersect with prevailing contextual circumstances at the local level will have a significant influence on the translation of learned lessons into concrete substances for policy outcome.

The case of participatory budgeting for climate change adaptation (*Wiener Klimateam*) from Vienna, Austria, adds an empirical dimension to this theoretical approach. The empirical findings presented zoom the relationship between policy learning and policy outcome in *Wiener Klimateam* into five separate –yet interrelated– stages of its overall budgeting cycle (issue-framing; instrument selection; participatory process; output implementation; and evaluation) vis-à-vis the actors, sources, types and effects of policy learning. By doing so, the discussion of these findings connects the recent theoretical advances in the literature on policy learning within the broader policy sciences with the remaining issues and gaps in extant research on urban policy mobility.

Keywords:

citizen participation; participatory budgeting; policy learning; policy mobility; urban policy

T_04 GOVERNANCE (A) / 925

Ways of learning in urban governance experiments: Insights from the Vienna Climate Team "Wiener Klimateam"

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In the face of pressing social and environmental challenges, experimental interventions –such as real-world laboratories, urban living labs, niche experiments and demonstration projects– are increasingly being recognised as important drivers of transformative urban change. In particular, experiments with co-creative governance are expected to trigger learning processes that challenge inflexible administrative structures by promoting adaptable and solution-oriented strategies.

Although learning is considered a central component of these urban experiments, it is rarely explicitly and systematically investigated in the scientific literature. There is a large discrepancy between studies that focus on urban experiments and those that explicitly address the learning processes in these experiments.

Addressing this research gap, the paper uses the example of the Vienna Climate Team (*Wiener Klimateam*) –an innovative governance experiment for the co-productive development of climate-relevant projects– to examine how the process design and project structure of an experimental process influence different forms of learning at different levels. The Vienna Climate Team is characterised by the active involvement of different actors, from municipal departments and districts to political decision-makers and citizens and has explicitly placed the promotion of learning processes at the centre.

Methodologically, the research is based on a qualitative case study that includes document analysis, participant observation and focus interviews with institutional actors involved in the experiment. To capture the multi-layered learning processes in the context of urban governance experiments, the study draws on theoretical concepts of social learning, transformative learning, organisational learning and process learning.

The results show that learning processes manifest themselves differently depending on

the design of the experimental arrangements in various phases of the process. The study highlights various learning arenas that were created by the specific structure of the Vienna Climate Team and analyses their influence on individual and collective learning processes. The analysis identifies three central learning strands: learning collaborative decision-making, transdisciplinary co-productive collaboration and communication, and internal administrative learning processes and institutional change.

Based on the insights gained, concrete tactics for the effective design and implementation of co-creative governance experiments are derived. The proposed analysis will not only advance the theoretical discussion of learning in experimental governance approaches, but also provide practical insights for the design of urban transformation processes. It emphasises the importance of consciously and systematically integrating learning processes into the design and implementation of urban governance experiments and contributes to the further development of the theoretical discussion on learning in experimental governance approaches.

Keywords:

Urban Governance; Experiments; Learning

T_04 GOVERNANCE (A) / 1751

Institutional and community learning for transformative urban practices: Experiences from Area Based Initiatives in Trondheim, Norway

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The article builds on two generations of Area Based Initiatives (ABIs) in Trondheim from 2013, that are being implemented in neighborhoods where the Municipality has identified quality of life challenges as well as urban physical degradation. The first program of this kind was implemented in the twin-neighborhoods of Saupstad-Kolstad from 2013 – 2021 and with three new ABIs ongoing in the neighborhoods of Tempe-Sorgenfri, Lademoen and Møllenberg from 2024. ABI as a methodology for urban regeneration has been adopted and promoted by the Norwegian Housing Bank and the State (including the Ministry of Municipal Affairs) for various urban neighborhoods that fare poorly on national quality of life statistics.

Goals of the ABIs in Trondheim have widely acknowledged that cross sectoral and public-private- civil society based partnership models for urban regeneration, such as in the Norwegian ABI model, require both institutional and societal learning and capacity building. Municipal staff involved in the first and second generation of ABIs in Trondheim often reflect more on the “internal” municipal learning than the tangible projects in the localities. Goals of the first generation ABI in Saupstad-Kolstad included: Contribution to interaction, collaboration and coordination across disciplines and sectors; Dialogue, communication and local anchoring and participation in connection with all public activities, competence development and learning.

This article is based on interviews with the municipal staff that have been involved in both generations of ABIs in Trondheim, supplemented by other documentations and evaluations of the first ABI completed in 2021, to present narratives that reflect learning -institutional, inter-institutional and community based -and analyse them in terms of the limits and potentials of their ability to be transformative.

The paper is position in literature related to territorial social innovation (e.g. Van Dyck and Van den Broeck, P., 2013), earlier discussion on the transformative potential of ABIs (e.g. in Hovik et al, 2024) and concepts of critical pedagogy applied to place-making and

urban renewal projects (e.g. in Natarajan and Short, 2023).

Some of the findings from the interviews indicate that sustainability of community learning was dependent on the permanence of collective organisations and on individuals. Initiatives involving youth for example were dependent on their continued presence in the neighborhood, while initiatives involving housing cooperatives have led to more continued learning. Some of the barriers to achievement of community learning have been the gap between the strategic goals of the program to build local responsibility and the perception of the community actors that the support and resources made available would support long-term direct transfers. In terms of inter and intra-organisational learning, the impact of the first generation of ABI has been the acceptance of iterative engagement with community groups, anchored in neighborhoods rather than as sectoral engagement at city level. However, despite the demonstration of the benefits of cross-sectoral, place-based engagement in the ABI, the project management group has still had to use substantial resources for anchoring the second generation ABIs internally within the municipality and among the various public and private institutions in the city, putting in doubt the sustainability of organisational learning.

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Keywords:

Transformative participation, social innovation, institutional learning, community learning

T_04 GOVERNANCE (A) / 755

Transformative planning or a vicious circle - cities running ahead or running alone?

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The world becomes urban, the majority of people live in cities, and we speak of an 'urban age'. Planning as transformative action, especially towards and in a future post-growth society, involves motivating and engaging urban imaginaries. While some of them remain hidden in urban theory and associated role perceptions of planners and policy-makers, so do we see imaginaries driving cities to action. Supported by European and international frameworks, new models from research, or funding mechanisms, some cities seem to lead the discourse around core questions of the urban future. For post-growth planning, this could be the application of Kate Raworth's doughnut economics in cities like Amsterdam, but also some local initiatives within URBACT. Beyond these examples, a wide range of networks mushrooms to foster local actions, participation, and democracy, such as the European Capital of Democracy.

Against much emphasis on 'the urban', cities as a spatial form occupy only a little part of our common space while their impact reaches way into its surroundings here now in the same way as elsewhere and in the future. Both from a spatial and a relational perspective, cities are not closed, but deeply intertwined with hinterlands, remote areas, and the systems necessary for their own existence and reproduction. They are more than a set of buildings: sites for democracy, places for active citizenship and opportunities for making and claiming rights. But what are the limits to making urban politics within the territorial limit of a city? We build this contribution on an interdisciplinary seminar

series on the question “Where is Urban Politics?” in Groningen in 2024 and 2025, crossing boundaries between philosophy, urban politics, and spatial planning. We use post-growth thoughts to complement critical questions about how we can positively re-gain democracy and governance in cities while not leaving our common foundation beyond cities out of sight. Literally said, not running alone somewhere, but moving together collectively. What needs to change in the self-understanding of planners and city makers, to achieve this?

Keywords:

Urban Future; Urban Politics; Post-Growth Planning

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T_04 GOVERNANCE (A) / 746

Discourses of green transition challenging institutionalised spatialities of planning and governance

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In Finland, the established institutional frameworks and practices of spatial governance have generated a fairly stable regional order of core-periphery relations. Now this order is being challenged by the green transition and associated new technologies and market opportunities. Areas formerly peripheral have emerged as new centres of attention for green investments. What are the institutional and practice implications of these shifts in regional economy to spatial governance, both at the national and local level? How is this development understood in the central government, and brought forward to guiding and incentivising regional development? How do local governments in affected regions react to these changes and navigate amidst them, in view of tapping into the scales, networks and institutional resources they bring forth?

Drawing on Discursive Institutionalism and Practice Theory, we conceptualise institutions as dynamic systems evolving through the interplay of ideas, norms, and policies. New ideas of spatial governance, e.g., related to the green transition, rarely institutionalise so as to replace former institutions, but rather generate a new institutional layer of spatial governance and lead to hybridisation of spatialities. By examining accounts of local and national planning interactions, we identify patterns of institutional and policy adaptation and spatial reconfiguration in accommodating to the green transition and related sustainability discourses. We contribute to spatial planning and governance research by offering conceptual tools to sort out the complex geographies of established and emerging spatial discourses in the era of green transition.

Keywords:

Discursive institutionalism; practice theory; hybrid spatiality; Finland; strategic navigation

T_04 GOVERNANCE (A) / 1612

Coastal Governance in the Adriatic-Ionian Region: A comparative analysis of Spatial Planning Systems and Integrated Coastal Zone Management implementation

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Integrated Coastal Zone Management (ICZM) is an essential tool for ensuring sustainability and effective governance in coastal areas, particularly in regions facing high anthropogenic pressure and environmental vulnerabilities and uncertainties such as the Adriatic-Ionian Region. However, the implementation of its principles and recommendations still shows great difficulties.

This study conducts a preliminary comparative analysis of coastal planning systems in seven Adriatic-Ionian countries—Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, Montenegro and Slovenia—within the framework of the ICZM Protocol in the Mediterranean.

The research aims to explore how the selected countries have engaged with the Protocol, analyzing both ratification status and subsequent actions. Through a comparison of national responses—whether through direct Protocol implementation or alternative coastal management strategies—the study reveals patterns of convergence and divergence in coastal policy approaches. This comparative analysis yields insights into effective coastal governance practices across the Adriatic-Ionian Region.

The study employs a comparative methodology based on seven case studies, providing a tentative evaluation of policy documents, legal frameworks, and spatial planning instruments related to coastal zone management. It also examines the key actors and stakeholders involved in decision-making processes, emphasizing their role in shaping coastal governance.

The preliminary findings highlight the challenges and opportunities associated with sustainable integrated coastal management in the Adriatic-Ionian Region, contributing to the broader discourse on coastal governance and the influence of international legal frameworks on national policy development. The study also provides recommendations for future research and reflects on the prospects for greater integration and coordination among coastal planning systems in the Adriatic-Ionian Region.

Keywords:

Coastal Governance; Comparative Analysis; Adriatic-Ionian Region; ICZM; Spatial Planning Systems

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T_04 GOVERNANCE (A) / 745

Patterns of establishing and conducting cross-border cooperation: Insights from Poland's borderlands

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Border areas exhibit unique characteristics in the formation of cooperative relationships, influenced by the interplay of international and national conditions at central, regional, and local levels. Additionally, the existence of the border as a barrier in many dimensions, including spatial, economic, socio-cultural, plays a very strong role. Under these conditions, the initiation and subsequent continuation of cooperation are critical elements. The purpose of the study was to identify patterns (paths) in establishing and maintaining relations as well as formulating the scope of joint projects undertaken within the framework of cross-border cooperation. Specific objectives included identifying approaches to forming project consortia, defining the project scope, understanding the rationale for continuing joint activities, and identifying the characteristics of an 'ideal' cooperation partner. This study is embedded in the cooperation studies pursued in the context of cross-border multi-level governance. The results obtained are intended to support the governance policies of cross-border areas and the exploitation of their potentials.

The spatial scope of the analysis covered all land borders of Poland, including the internal borders of the EU and the Schengen Zone (with Germany, Czechia, Slovakia, and Lithuania) and the external ones (with Ukraine, Belarus, and Russia), which are excellent examples of bordering and debordering processes. Additionally, the studied borderlands, understood as areas on both sides of the Polish border, are characterized by great diversity due to environmental, economic, and cultural features.

Mix Method Approach was used. Thus, a two-stage exploratory sequential research design included quantitative data analysis of 1577 cross-border projects and 2307 organizations that implemented them as well as 26 in-depth interviews with selected entities (using content analysis). Projects implemented under the European Territorial Cooperation 2007-2013, the European Neighborhood and Partnership Instrument 2007-2013, Interreg 2014-2020 and the European Neighborhood Instrument 2014-2020 were taken into account.

Keywords:

cross-border cooperation; borderland; governance; local policy

T_04 GOVERNANCE (A) / 123**Cross-Border Data Management: Enhancing Collaboration and Sustainable Development in Border Regions****Authors:** Nataliia Yehorchenkova¹; Oleksii Yehorchenkov¹¹ *SPECTRA Centre of Excellence EU at Slovak University of Technology in Bratislava***Corresponding Authors:** oleksii.yehorchenkova@stuba.sk, nataliia.yehorchenkova@stuba.sk

Border regions, often characterized by unique socio-economic dynamics and shared governance challenges, require robust data management systems to foster cross-border collaboration and sustainable development. This research investigates the purpose and implementation of data management practices in border regions of different countries, focusing on their potential to address cross-border challenges and leverage opportunities for growth.

The study adopts a mixed-method approach, combining qualitative analysis of governance frameworks with quantitative assessment of spatial, demographic, and socio-economic datasets from selected border regions. Key objectives include identifying barriers to data sharing, understanding the impact of legal and technical discrepancies, and exploring innovative solutions to enhance data interoperability and standardization.

Principal results reveal significant challenges in data management stemming from disparities in legal systems, technological infrastructure, and data governance policies. These factors hinder efficient data sharing and joint decision-making among cross-border stakeholders. However, case studies demonstrate that emerging technologies, such as geographic information systems, blockchain, and big data analytics, can bridge these gaps by enabling integrated data platforms. Stakeholder engagement and capacity-building initiatives were found to play a crucial role in overcoming institutional and technical barriers.

Analysis of recent research underscores the relevance of data management to cross-border governance. Xue et al. (2024) emphasize the importance of cross-border interactions in advancing sustainable development, highlighting the role of collaborative data management in achieving global sustainability goals. Krüger et al. (2024) propose a framework for cross-border governance, identifying critical factors such as institutional alignment and shared data systems, which support this research's focus on governance improvement. Kurowska-Pysz et al. (2018) examine sustainable planning strategies for cross-border cooperation, advocating for enhanced spatial data integration and collaboration between border cities. Leibenath (2008) offers theoretical insights into the gaps in cross-border governance and spatial development, underscoring the need for robust data-sharing protocols and interoperable technologies to bridge these divides.

The research concludes that effective data management in border regions not only facilitates sustainable development but also strengthens governance by enabling informed policymaking, efficient resource allocation, and enhanced social cohesion. Recommendations include the development of standardized data-sharing protocols, investment in interoperable technologies, and the establishment of cross-border data governance frameworks. These measures are essential for transforming data into a strategic asset for border region development and integration.

Keywords:

border regions; data management; cross-border collaboration; governance;

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T_04 GOVERNANCE (A) / 1070

Beyond Formal Structures: The Role of Institutionalised Support Centres in Cross-border Cooperation Governance in Italy

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The European Union has witnessed a significant evolution in cross-border cooperation governance in recent years, encompassing various institutional mechanisms and arrangements. Interreg programs, Macroregional strategies, the b-solutions project, and more complex institutional cooperation structures such as Euroregions and European Groupings of Territorial Cooperation (EGTC) demonstrate that the territorial collaboration landscape has become increasingly articulated and mature. With its strategic geographical position, Italy participates in numerous cross-border initiatives along its Alpine and maritime borders, highlighting the growing importance of institutionalized cooperation frameworks.

While research has extensively analysed formal cooperation structures and their legal frameworks, the role of support organizations and informal networks in facilitating cross-border cooperation remains understudied. These entities, including cross-border information centres, civil society organizations, and advisory bodies, operate as binational or multinational non-profit organizations. They are characterized by their cross-border focus, institutionalized nature, and advisory function supporting the Four Freedoms of the European Single Market, serving as vital intermediaries between different levels of territorial governance.

This paper examines the interaction between formal cooperation structures and support institutions in Italian cross-border regions through a multidisciplinary approach, combining a taxonomic analysis of existing realities in the national case with specific case studies. The research investigates how these organizations support cross-border cooperation in three key areas: strategic planning, stakeholder engagement, and administrative and cultural barrier reduction. The study explores the contribution of various institutions, including Euradria in the Italian Slovenian context, ARGE ALP in the Alpine area, the TEIN network, and research centers such as Eurac and Informest.

The findings reveal that support organizations are crucial facilitators for successful cross-border cooperation, particularly in providing information, technical assistance, and stakeholder coordination. The analysis of Italian cases demonstrates their significant contribution to overcoming administrative, cultural, and operational barriers that often hinder cross-border initiatives. Furthermore, the research highlights how these organizations enhance EU cohesion policy implementation by providing specialized expertise and facilitating multilevel governance processes. The study contributes to the theoretical understanding of cross-border governance mechanisms beyond more formal and institutional frameworks. It provides evidence-based recommendations for strengthening the institutional framework of cross-border cooperation, ultimately improving the effectiveness of European territorial integration.

Keywords:

Cross-border Cooperation; Multi-Level Governance; Institutionalised Support Centres; European Territorial Cooperation

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T_04 GOVERNANCE (A) / 1271

Crossing Invisible Lines: Navigating Governance and Cooperation Across Subnational Boundaries

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Border regions often face particular challenges, especially with regard to governance structures, institutional framework conditions and interregional cooperation. These problems concern both international borders, as addressed in the context of EU initiatives such as INTERREG, and intra-national borders, for example between federal states. While national borders have long been addressed in research, the focus on intra-national borders has so far been less pronounced.

The so called “(economic) region of the centre”- located at the interfaces of the three federal states of Hesse, Lower Saxony and North Rhine-Westphalia - illustrates the complexity of intra-national borders as social and institutional constructs. Due to the federal administrative structure in Germany, the federal state borders are of great importance for planning processes. It is obvious that formal planning processes are influenced by the federal state borders. However, non-formal planning processes - such as regional development processes - are also strongly influenced by the federal state borders, even though common problems exist in border areas along the federal state borders, which in principle should also be addressed together.

As part of the Strategic Regional Development Concept (SREK) in the cross-border region between Hesse, North Rhine-Westphalia and Lower Saxony, several analyses were carried out to examine the interactions between key players such as regional management, economic development agencies and chambers of industry and commerce. Based on qualitative interviews with economic and planning actors in the study area, social and semantic network analyses were conducted and statements were made about key topics and actors as well as their interactions within and across federal states.

The results show that interactions often end at administrative borders, while cross-border cooperation is hampered by institutional fragmentation and a lack of policy coordination. While the EU explicitly addresses national borders in the context of the INTERREG programme, in other EU programmes such as the LEADER initiative, intra-national borders already pose enormous challenges for the development and implementation of innovative governance models in (intra-national) border areas.

The presentation discusses the methodological approaches of network analysis with regard to their theoretical foundation and possible applications in regional science. The results of the analysis show the challenges for central key actors and their interactions in intra-national cross-border interactions. From a network perspective, the article shows how governance structures and political coordination in border regions are structured and challenged by federal state borders.

Keywords:

network analysis; regional development; border region; governance; LEADER

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Strategic Regional Planning and the Role of Regulatory Instruments: Insights from the Emscher Transformation

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Strategic regional planning is driven and implemented by a network of institutional actors with diverse interests embedded in a specific institutional setting (Purkarthofer et al., 2021). This contribution examines the relationship between such planning actors and their respective institutional context, particularly regarding the impact of regulatory instruments on decision-making processes and the orientation of regional spatial planning.

The TEMPUS case study project focuses on the Emscher transformation, a long-term infrastructural and ecological process to convert a river formerly used as an open sewer in Europe's largest industrial region into a near-natural watercourse. This serves as an example to investigate the relationship between regulatory instruments such as the European Water Framework Directive and the strategic decision-making of institutional actors that shaped the outcome of the river conversion.

The primary focus lies on the water management association *Emschergenossenschaft*, whose structure and actions are significantly affected by legal frameworks. Acting as a governance instrument, the association operates within an institutional context, enabling the realization of complex regional strategy formation (Wiechmann, 2008). One objective is the further development of the process model (ibid.) to explain such strategizing processes. In these processes of strategic planning, conflicting spatial interests across various levels, scales, and territorial boundaries are mediated and reconciled (Mäntysalo et al. 2019). On the one hand, the *Emschergenossenschaft* is a product of the institutional context that created it; on the other hand, it functions as an autonomous entity and a driver of transformative action (Zimmermann, 2023). How regulatory instruments influence regional development depends on the extent to which organizations comply with and implement these regulations.

This contribution examines the impact of specific regulatory instruments, particularly the legal framework governing water and wastewater management, on actors' behavior within the strategic regional planning process of the Emscher transformation. As a key outcome, it aims to formulate hypotheses on the interplay between the institutional setting—especially regulatory instruments—and actors' strategic decision-making in the context of the Emscher transformation.

Keywords:

Strategic Regional Planning; River Conversion; Institutional Setting; Institutional Actors

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T_04 GOVERNANCE (A) / 42

Mobilising Territorial Actors: a comparison between two development policies

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The proposal draws on Italy's National Strategy for Inner Areas (SNAI), a place-based policy designed to address the multifaceted development challenges faced by Italy's inner areas, which are often characterized by demographic decline, geographic isolation, and inadequate access to essential services. SNAI represents a novel policy framework in Italy that emphasizes the importance of participatory development, particularly through its co-design phase, which seeks to involve local communities and stakeholders actively in shaping developmental trajectories. This approach underscores a combination between top-down policy implementation and a more inclusive, bottom-up model aimed at fostering local development of marginal areas, through the improvement of essential service such as health, education and mobility.

Central to the research is a qualitative evaluation of the SNAI's co-design phase implemented in an inner area of Aosta Valley, a mountainous region in Northwestern Italy. This case study highlights critical limitations both in the national application of the policy and within the specific local context. Using qualitative research methods, the study examines the participatory frameworks employed by the SNAI and compares these with the LEADER approach implemented by LAG EVV operating in a mountainous territory in the neighbouring region of Piedmont, to identify key lessons and transferable practices. Rather than suggesting a wholesale integration of LEADER principles into the SNAI framework, the analysis focuses on specific mechanisms, such as fostering local networks and leveraging community assets, that could potentially strengthen the participatory dimensions of SNAI.

Keywords:

National Strategy of Inner Areas; LEADER; multilevel governance; Participation

T_04 GOVERNANCE (A) / 1492**Alpine interface territories -a new spatial framework for soft governance?**

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Stretching from the Mediterranean Sea in the south-west to the Danube plains in the north-east, the Alpine region is one of the most complex and heterogeneous territories in Europe. While there are numerous contributions dealing with the development dynamics of the peri-Alpine lowlands and the inner-Alpine highlands, so far hardly any attention has been given to these territories in between. We argue that these interface territories constitute a specific spatial category, which is generally perceived either as peripheral from a mountain perspective or as suburban from a core city perspective. Putting them at the centre of territorial development and policy analysis can help to address spatial development challenges.

Alpine interface territories connect mountainous and inner-Alpine areas with pre-Alpine lowlands. They are characterised by highly dynamic flows and interdependencies as well as by controversial stakeholder claims that meet in a rather limited spatial framework (Chilla & Streifeneder 2018). Organising sustainable spatial development in this geographical context requires rethinking spatial governance and planning from a functional, soft perspective (Allmendinger et al., 2015; Faludi, 2018; Cotella, 2023) that goes beyond traditional administrative and sectoral boundaries and employs multilevel, integrated strategies and actions.

The proposed contribution draws on the results of the ESPON InTerAlp project (Chilla et al., 2024) to explore the functional and governance interlinkages, at first through a pan-Alpine overview and then through selected case studies. The analysis shows that, on the one hand, the spatial governance and planning systems of the Alpine countries do not dedicate particular attention to Alpine interface territories. On the other hand, the empirical evidence collected in the cases of the Alpine Rhine Valley, the Turin Metromountain area, and the Munich-Tyrol area shows that there are promising episodes of dedicated functional governance exist that could inspire more decisive progress and, overall, a more integrated sustainable and inclusive development of the Alpine region.

Keywords:

Interface territories; Alpine space; functional areas; territorial governance; soft spaces;

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T_04 GOVERNANCE (A) / 1531**Consultocracy in urban regeneration. The case of Poland****Author:** Przemysław Ciesiółka¹¹ *Adam Mickiewicz University in Poznan***Corresponding Author:** przemko@amu.edu.pl

Urban regeneration has become a leading spatial development direction due to the social, political and economic changes brought about by transforming the post-socialist system in Central and Eastern Europe (Hlaváček et al., 2016). It was characterised by rapidly changing management and planning contexts in line with the Western solutions model (Scott, Kühn 2012). A long-term and comprehensive view of urban development processes was adopted, opening up new possibilities for managing complex change and addressing many problems associated with urban decline. The basis for action in Poland was the regeneration programmes implemented by local authorities. These documents were to be developed by local officials in line with the idea of community-led regeneration. This approach was supported by a training system offered by national and regional authorities. Despite this, regeneration programmes were mainly developed by consultants, leading to the emergence of a consultocracy. A clear decoupling between state intentions and real action is therefore evident. Craig and Brooks (2006) define consultocracy as a process in which unelected consultants replace policy debate by publicly accountable politicians". Gunter et al. (2015) identify consultants as external knowledge actors who trade in knowledge, expertise and experience and, through consulting as a relational transfer process, influence organisational structures, systems and goals. As Ylönen & Kuusela (2018) note, consultocracy has had a significant qualitative impact on the ways in which public administration is run and managed in various areas, such as auditing, organisational restructuring, human resources and information and communication technology.

The paper aims to identify the causes of consultocracy in regeneration programming in Poland, referring to the decoupling phenomenon. The work draws on in-depth interviews with key actors (officials, planners and consultants) in the process. Results of the research indicate that consultocracy and decoupling are determined by 1) the shortage of municipality employees and a deficit of suitably educated personnel 2) the objective benefits associated with the involvement of consultants, such as their neutrality, their different and high-level skills and their ability to transfer good practices and 3) fear among local officials of taking responsibility for preparing the regeneration programme.

Keywords:

consultocracy; urban regeneration planning; Central and Eastern Europe

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T_04 GOVERNANCE (A) / 151**Actors in power networks: an institution framework of historic urban district renovation actors in China****Authors:** Xin Li¹; Christa Reicher¹¹ *RWTH Aachen University***Corresponding Authors:** xin.li1@rwth-aachen.de, reicher@staedtebau.rwth-aachen.de

The actor constellation plays an important role in urban studies. Understanding actors' power resources and mindsets is of fundamental importance in explaining their behaviours and actions in historic urban district conservation, renovation, and redevelopment as well as urban issues on a wider scope. This paper aims to offer a panoramic description framework and also reflections regarding the power resources, interrelations, institutional organization, mindsets, and action logic of key actors, exemplified by the Chinese historic urban district renovations. Referring to a bounded-rational hypothesis and Michael Mann's power network theory, the paper provides a theoretical framework in actor-institution analysis and summarizes the complex, chaotic, and intertwined connections among actors in the real world into four main institutionalized socio-spatial networks of power: political network, everyday-living network, economic network, and expertise network. The paper will further describe the power source and organizational structure of each network and how the networks, to a certain extent, have shaped the mindset and behaviour of the actors. In the end, the study will point out the challenges for historic urban district renovation in the Chinese context from an actor-institutionalism perspective such as the imbalanced power distribution and party-state authority fragmentation. The theoretical framework on actor power networks can be referential to a wide range of global urban studies related to actor mindsets and behaviours beyond China and the reflections can be insightful for context understanding regarding contemporary urban renovation cases in China.

Keywords:

Actor; power network; institution; historic urban district; Chinese urban renovation

T_04 GOVERNANCE (A) / 996**Distinguishing Change from Transformation in South Africa's Spatial Transformation Journey****Author:** Kundani Makakavhule¹**Co-authors:** Kwazi Ngcobo¹; Mark. C Oranje¹¹ *University Of Pretoria***Corresponding Authors:** mark.oranje@up.ac.za, kundani.makakavhule@up.ac.za, kwazi.ngcobo@up.ac.za

South Africa's 31 years of democracy have been characterized by robust legislative efforts to address spatial inequalities entrenched by apartheid. Policies such as the Constitution of the Republic of South Africa (1996), the White Paper on Housing (1994), the Municipal Systems Act (2000), and the Spatial Planning and Land Use Management Act (SPLUMA, 2013) have laid the groundwork for spatial transformation. Complementary tools like the Spatial Transformation Barometer developed by the Council for Scientific and Industrial Research (CSIR) and the South African Local Government Association (SALGA) have sought to define metrics and benchmarks for progress. However, while these frameworks emphasize the "what" of spatial transformation, little attention

has been given to the “how” and “where.” Fundamental questions—whether to relocate marginalized communities closer to economic centers or redistribute industries and services to peripheral areas—remain unanswered. Additionally, the distinction between spatial transformation and incremental spatial change is often blurred.

This study examines these gaps through spatial analysis and interviews conducted with officials across 20 municipalities in South Africa. Findings reveal that spatial transformation has been slow and, in some cases, stagnant due to deeply rooted structural and systemic challenges. Political interference often skews priorities toward short-term agendas, while a lack of political will limits decisive action against entrenched inequalities. Municipalities also face critical shortages of skilled professionals, economic constraints, and competing demands for basic service delivery. The urgent focus on housing and infrastructure maintenance frequently prioritizes quantity over strategic location, perpetuating spatial fragmentation.

Drawing on the conceptual distinctions between change (incremental, surface-level, and minimal cultural/identity shift) and transformation (deep, systemic, and new paradigm shift), this paper argues that achieving spatial transformation requires not only adaptive governance and cross-sectoral collaboration but also an all-systems approach that integrates economic, social, and spatial considerations into a cohesive framework.

Keywords:

Spatial Transformation; Adaptive Governance; Cross-Sectoral Collaboration; Systemic Challenges; All-Systems Approach

T_04 GOVERNANCE (A) / 952

Spaces of exchange?: Reciprocity and public engagement in a Bristol regeneration context - a framework analysis

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Public engagement is readily placed in defacto and binary categories of ‘good’ and ‘bad’ practice. At its best, scholarship demonstrates the major benefits of resilience and well-being enacted through procedural justice, inclusion and placemaking. More commonly however, practice is dismissed as performative and a tick box exercise, highlighting schisms in practice and rhetoric and is one way. Historically, criticism has stemmed from an overrepresentation of engagement of the ‘usual suspects’—i.e. more educated, affluent, older and often white and male sections of the population. However, procedural limitations are also levelled at public engagement strategies with respect to eliciting broad public visions as contributions but lacking direct avenues for influence and genuine participation. Despite concepts of reciprocity implicitly involved in debate about practice, only a small number of empirical studies have applied a framework by investigating notions of the reciprocity within the planning system and fewer still in terms of public participation. In this paper, we outline the development of a three-tiered reciprocity typology; direct and indirect, encompassing the ‘how’; instrumental and symbolic reciprocity, encompassing the ‘what’; and lastly, balanced, generalised and negative, regarding ‘impact of exchange’. Applying a qualitative framework analysis, we present findings from focus groups (n=4) with public participants and interviews (n=7) with urban planning practitioners involved in a pre-consultation engagement. We argue that a reciprocity framework enhances understanding of symbolic versus authentic practice, articulating greater nuance involved in public engagement planning, and trace how the implicit reciprocal flows set up a cascade of interactions affecting the most basic premise for trust and exchange between planning governance engagement practices and the public.

Aspirations for meaningful engagement can be challenging in resource constrained local government settings and necessary compromises may impact the effectiveness of engagement activities. However, a greater clarity about the purpose of engagement

through awareness of reciprocal exchanges could help to prioritise activities and lead to greater sensitivity for public engagement. Our findings are relevant for concepts of 'whole- of-society' approaches in achieving healthy communities.

Keywords:

Reciprocity; public participation; procedural justice

T_04 GOVERNANCE (B) / 619

Stakeholder Dynamics in Government-Led Gentrification: Case Studies from Urban Renewal in Beijing

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Gentrification, a term first introduced in 1964, initially referred to the process of middle-class re-entry and transformation of working-class communities in central London (Glass, 1964). Over time, the concept has expanded beyond the return of capital to cities or the pursuit of specific lifestyle by the middle class (Zhang et al., 2014). Today, gentrification is increasingly linked to urban renewal policies and, driven by government initiatives, has become a global urban strategy to attract capital investment (Lees, 2000; Smith, 2002). Its manifestations vary significantly across countries and economic systems (He, 2019). In China, as the world's largest developing country, gentrification is frequently employed as an urban renewal strategy, leveraging land reuse to generate capital accumulation (Li et al., 2018). However, existing research offers limited comparative analyses of urban renewal models across different contexts, particularly regarding the interplay between gentrification and renewal strategies.

This study focuses on government-led residential renewal projects in China's authoritarian context, exploring the roles and strategies of various stakeholders in the gentrification process. It aims to contribute new perspectives for both the theoretical understanding of gentrification and the practical application of urban renewal initiatives. Two representative cases in Beijing are analyzed: Yuer Hutong in Nanluoguxiang and Courtyard No. 58 on Jiaoda East Road. The former represents a top-down policy-driven renewal model, while the latter reflects a bottom-up development approach. By investigating the interaction among state, market, and society, and how these interactions influence the gentrification process, this research provides empirical evidence for understanding the diverse pathways of urban renewal in China.

This study employs qualitative research methods, including random and snowball sampling, to conduct in-depth interviews with key stakeholders, such as residents, shop owners, street committee staff, and planning and design professionals. Data analysis is conducted using triangulation to ensure robustness. The findings reveal that while the government plays a dominant role in urban renewal strategies involving gentrification, the opinions and actions of developers and residents significantly influence renewal model within the policy framework. Furthermore, while gentrification can drive economic growth, it also bring certain negative social impacts.

By analyzing government-led urban renewal models that incorporate gentrification as a core strategy, this study reveals the complex relationships among stakeholders and their impact on renewal approaches. It offers practical recommendations for future residential urban renewal planning, emphasizes the adoption "mild gentrification" as a policy strategy to achieve sustainable and efficient urban renewal.

Keywords:

China; Governance; Gentrification; Urban renewal

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T_04 GOVERNANCE (B) / 1459

The cultures of temporary urbanism intermediaries in France: exploring the dilemmas of hybrid civic action

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Temporary urbanism in planning and governance processes has been the subject of extensive research in recent years. While temporary uses have always existed in our cities, short-term events—such as temporary construction and space usage—have increased in frequency. This phenomenon has become known as temporary urbanism (Madanipour, 2017). These practices have shifted from marginal informality to tools in mainstream urban policies to experiment with the reactivation of spaces (Galdini, 2020). These projects have increasingly been carried out through hybrid formats (Andres and Zhang, 2020): they are integrated into top-down policies, programs, and evaluations but are executed on the ground by organisations specializing in the temporary management of vacant spaces. These organisations act as intermediaries between owners and users. (Vivant, 2022). These organisations can include professionalised artistic collectives, as well as new urban professionals inspired by spaces of artistic critique (Pinard and Vivant, 2017) or by publications on the experimental value of temporary uses (Ferrerri, 2015). These hybrid projects are seen as contradictory, blending different worlds and contexts. They enact at the same time the horizon of a just city and a creative (and neoliberal) city (Bragaglia and Rossignolo, 2021). Temporary urbanism intermediaries may, for example, provide shelters for migrants, aligning with Lefebvre’s concept of the right to the city, while also promoting their methods to real estate developers at international fairs (Vivant, 2022).

Research has critically examined this apparent lack of coherence. However, rather than viewing these contradictions as mere inconsistencies, this contribution explores how actors themselves make sense of these tensions and how they act in practice. This perspective provides a better understanding of how hybrid forms of temporary urbanism balance different conflicting normative prescriptions active in this field today.

To investigate these contradictions, the paper explores the operations of temporary urbanism through two analytical shifts from current perspectives. First, it examines intermediaries beyond the reduction of these actors to a specific sector of intervention (e.g. third sector, non-profit). It focuses instead on their actions and their relation to public problems, through the concept of civic action, intended as flexibly organized, collective,

social problem solving, in which participants coordinate action to improve some condition seen as socially relevant (Lichterman and Eliasoph, 2014). This approach traces both civic and noncivic actions, such as compliance with government-mandated procedures or revenue-driven activities

Secondly, it considers the role of culture in shaping these actions. While research on these practices has often considered them as technical and neutral, I assume –following the civic action perspective –that these actions are shaped by socially and culturally embedded scene styles, which are recurrent patterns of interaction that arise from members' shared assumptions about what constitutes good or adequate participation in the group setting (Lichterman & Eliasoph 2014). By tracing the appropriate ways to act and balance these prescriptions, the contribution highlights how different cultural elements shape these projects, their solutions, and their outcomes.

The contribution, based on six months of ethnographic fieldwork in a Parisian temporary urbanism project managed by two intermediaries outlines the main scene styles adopted in this project and their relation to different dilemmas faced by actors. It also traces the different forms of hybridization in action, particularly in relation to the market and public administrations.

Building on these cultural analyses, this contribution illustrates how cultural elements shape the balance between civic and noncivic actions among temporary urbanism intermediaries in France, guiding their projects toward specific strategies, solutions, and relationships.

Keywords:

Temporary Urbanism; Hybrid Civic Action; Ethnography; France;

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The Forgotten Refugees: Reframing Urbanization and Governance in Shagarab Camps, Eastern Sudan

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Refugee camps are established to provide humanitarian assistance to displaced populations (UNHCRa, 2022) and originally are intended as temporary spaces until durable solutions—repatriation, local integration, or resettlement—are achieved (UNHCRb, 2022). However, over time, many transform into protracted settlements,

undergoing significant changes (Turner, 2015). The complex realities of prolonged displacement and settlement are often overlooked, as governance frameworks and planning approaches remain rooted in their original temporary designation (Agier, 2002; Jansen, 2018). Increasingly, scholars argue that such protracted camps develop urban-like characteristics, emphasizing the need to reframe refugee camps as dynamic urban spaces that require innovative and adaptive governance strategies (Dalal, 2015; Dalal, 2022; Oyler, 2024).

Within this context, this research investigates the potential for refugee camps to evolve into urban spaces and examines governance strategies, using the Shagarab camps in Eastern Sudan as a case study. Established in 1984, the camps hosted over 60,000 refugees—primarily from Eritrea—by 2022, with numbers increasing to nearly 75,000 by 2024 (UNHCR, 2022; 2024). Despite their long history, academic research on the development and governance of these camps remains limited. This study addresses this gap by analyzing their transformation and governance dynamics.

To address the research aim, I first developed a conceptual framework based on existing studies on camp urbanization, incorporating the concepts of the “Virtual City,” “Camp City,” and “Accidental City” (Montclos & Kagwanja, 2000; Agier, 2002; Jansen, 2018). This framework examines the social, spatial, and economic transformations within the camp. Second, I analyzed the stakeholders and influencers involved in camp governance to evaluate whether existing governance frameworks effectively manage the camps.

Employing a qualitative case study approach, I conducted semi-structured interviews with 21 government officials, NGO workers, and refugee workers, along with structured interviews with 20 households. These interviews were further supplemented by participant observation, offering deeper insights into daily life, governance practices, and camp dynamics. Data collection occurred during two visits in June 2022.

The findings reveal that the Shagarab camps exhibit clear signs of urbanization. Refugees have formed enduring communities that surpass the population size of nearby towns and meet national urban agglomeration criteria. Temporary emergency tents have been replaced with durable shelters, vibrant marketplaces serve as trading hubs for surrounding areas, and refugees have diversified their livelihoods. Despite limited infrastructure, the camps demonstrate a level of development that compares favorably with their neighboring regions. This research, therefore, conceptualizes refugees as active agents of change and resilience, driven by their adaptability and determination to thrive, rather than as passive victims of displacement.

While the Shagarab camps exhibit clear signs of urbanization, their governance remains rooted in temporary frameworks. At the national level, refugees face restrictive policies, including mandatory camp residence, which undermine their potential for self-reliance. In 2019, Sudan pledged at the Global Refugee Forum to integrate refugees into national systems and promote self-reliance, but economic and political instability in the country continue to hinder implementation.

Similarly, despite UNHCR’s Development Assistance for Refugees (DAR) (UNHCR, 2005) initiative, which promotes development-based approaches, decisions by the Sudanese representative (COR9) and UNHCR remain temporary. Services are planned under the assumption of eventual camp closure or refugee repatriation, limiting investment in permanent infrastructure and long-term solutions for self-reliance.

This study critiques the “permanent temporary” state of refugees, where their contributions to urbanization—economic, social, and spatial—are unsupported by governance structures that enable integration. It emphasizes the urgent need for governance frameworks and policies to shift from temporary humanitarian responses to development-focused approaches that address the realities of prolonged displacement and meet refugees’ long-term needs.

Keywords:

Sudan; Shagarab Camps; Camp Urbanization; Protracted Displacement; Camp Governance

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Innercity redevelopment - processes, instruments and stakeholders in German cities (insights from the research accompanying the federal program)

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The federal program “Sustainable inner cities and centers” supports measures in 218 municipalities across Germany in large cities, medium-sized and small towns and rural communities. The aim of the program is to support cities and municipalities in overcoming acute and structural problems (“desertification”) in city centers, town centers and district centers by (further) developing them into multifunctional, resilient and cooperative places as places of identification for the municipality. The range of topics that the municipalities focus on with their projects is accordingly very diverse. It ranges from work, housing, education, leisure and social issues to urban development, open spaces and green areas, and digitalization. In addition, many municipalities are involved in strategy development, participation formats and cooperation in the form of establishing and strengthening (new) stakeholder constellations. The presentation presents selected findings from the research accompanying the federal program. The developments between the initial situation and the end of funding (approx. 4 years), success factors, obstacles and special features can be presented from the database, which records and evaluates indicators, the exchange at the network meetings with the municipalities and the visits to the municipalities with interviews with the key players.

Two overarching themes emerge: A central key to strengthening city centers and town centers lies in a balanced mix and diversity of uses. It has been shown that particularly diverse centers with an attractive mix of consumer-oriented and non-consumer-oriented locations react to structural change in a crisis-proof and resilient manner. Accordingly, city centers and town centers are now being used by many local authorities as test areas and real laboratories to counteract a possible one-sided usage structure, increase the quality of stay and length of stay and spread the sense of responsibility across many shoulders. Against this backdrop, “third places” and the cultural and creative industries are becoming increasingly important as drivers of (inner) urban development. What almost all activities have in common is that they want to generate added value from the diversity of uses, which benefits all stakeholders and ensures a vibrant city center or a lively center with a high quality of stay for the citizens. Those responsible have realized that inner city development is a joint task and that a new building and planning culture

is needed to implement the numerous ideas and achieve the objectives: involving all stakeholders, the already established inner city players as well as new groups that have rarely been represented in inner city development to date. Volunteers, multipliers and advocates as well as steering instruments such as city center management were key players in this process.

From an urban planning and open space perspective, the highly sealed inner cities also need to become green, healthy and climate-resilient against the backdrop of climate change, demographic change and the mobility transition - this is being tackled in the municipalities.

Keywords:

inner-city centres; multifunctional; resilient; stakeholder, cooperation

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Can super citizens save the city? On the use of civic energies in planning.

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Several European countries are progressively redefining the terms of the social pact with their citizens and reconfiguring governance arrangements according to the idea of a smaller welfare state and more self-responsible citizens, some of whom themselves claim a more active role. These two-way pushes can be mutually reinforcing and have led to new opportunities and spaces for collaborative governance as well as possible exploitation. Although the idea of the active citizen is not new, we are facing a further elaboration, where citizens are ostensibly in charge of implementing spatial transformation plans, taking care of spaces, social infrastructure and services in the city through devolutionary policy, common goods regulations and as last resort. In other words, they are actively co-producing and co-managing the city. This paper, therefore, discusses the emergence of what we define as 'super-citizens' in governance and spatial planning as an effect of institutional frameworks that increasingly emphasise active participation and responsibility in communities to shape and take care of their locality. In this context, the idea of a hierarchical relationship between citizens and governments is being supplanted by several parallel spaces in which power is discussed and negotiated (Newman, 2005; Williams et al., 2014).

The rise of the 'super-citizen' as an expert citizen endowed with local knowledge and the ability to bridge political authority and civil society. The paper discusses the implications of restructuring the welfare state on public-private responsibilities (Bragaglia, 2021) and - drawing on theories of collaborative urban governance in the field of urban studies and empirical cases in the English, French and Italian contexts - highlights the dual nature of these transformations. On the one hand, they enable citizens to co-create policies and solutions in collaboration with state actors. On the other, they often impose new demands for self-management and adaptability, aligning with overarching pressures for efficiency and responsiveness. The 'super-citizen' embodies this duality, acting both as an agent of community development and as a potential negotiator of institutional frameworks. While the rise of the super-citizen represents an important opportunity to continue experimenting with shared solutions of collaborative governance, it also raises several questions and implications. This concerns, for example, the ethics of voluntarism in planning (Parker et al., 2020), the representativeness of these subjects of the visions of the city of which they are bearers, as well as the fact that their acquired professionalism

and their collaborative approach with institutions. These factors distinguish them from the antagonism that characterised the political identity of social movements (Castells, 1997) and, thus, the risk that potential dissent is made less and less visible through this new figure of the super-citizen. If the super-citizen is increasingly seen as a necessary or effective partner for institutions in the day-to-day management of and in the development of cities, it is necessary to critically interrogate these new forms of collaboration.

Keywords:

super-citizens; collaborative governance, urban policies, social innovation

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People's Plans: Partnering with communities to take action and influence planning

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London has been going through a population growth since the 1980s. This population growth has been paired with a neoliberal planning approach, in which city-making relies heavily on private-sector developers, and in which public authorities follow a private development logic. Since the beginning of the 21st century, local authorities have viewed social housing estates as places for redevelopment and densification. They have seen in estate regeneration an opportunity to address London's housing crisis and deliver housing numbers that meet their targets. This concentration on number of homes results in disregarding the relevance of social infrastructure (spaces where people can gather), which is typically reduced or not extended in such densification schemes, resulting in less social infrastructure per resident. In addition to this, most of these schemes do not result in an increase of social rent units, but in a decrease of social housing units at expense of private market homes.

Social housing regeneration in London has been heavily contested by residents, housing campaigners, as well as scholars. Since the 2010s, there was an increase in community groups campaigning against the demolition of their homes and demanding other approaches to regeneration, which have managed to have some influence on regeneration schemes and on London-wide policies on estate regeneration. Between 2016 and 2019, Daniel Fitzpatrick and I conducted a research project that explored how community

groups were engaging with different planning tools and using a diversity of campaigning strategies for opposing the demolition of their homes and proposing community-led regeneration schemes. This piece of research led to the publication of the book *Community-Led Regeneration: A Toolkit of Residents and Planners* (Sendra and Fitzpatrick, 2020). One of the strategies that many groups used was collaborating with architects to draft a “People’s Plan” or “Community Plan”. A People’s Plan is not a statutory planning document, but a community vision that residents put together with the aim of influencing or leading decisions on the future of their neighbourhood.

Since 2019, I have worked in collaboration with various community groups facing top-down regeneration schemes on co-producing a People’s Plan for their neighbourhood. Through funded research and knowledge exchange projects, I have used a participatory action research approach and co-design methods to co-produce community-led schemes with residents living in social housing, as well as supporting evidence for these plans in relation to their social and environmental impact, and their financial viability. Residents have used the outputs of this projects to present it to local authorities and stakeholders to influence planning decisions.

This paper presents four London-based case studies of participatory action research projects carried out in partnership with community groups living on social housing that were facing the demolition of their homes, other type of top-down developments, and/or the loss of social infrastructure. These case studies are South Kilburn Estate, Alton Estate, Trellick Tower and Edenhall Way, and Barking Riverside. The paper first introduces each of the case studies and, based on the results of the project, it reflects on the value, ethics, methods and impact of working with communities. This includes how to build partnerships with community groups, how to define the purpose of the collaboration, how to plan to the project to maximise impact in relation to the context, the impact that each of the project has had, the different types of knowledge it has generated, and how each of these experiences can learn from each other.

Keywords:

People’s Plan; participation; community-led planning; social housing; social infrastructure; activism

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Redefinition of Urban-Rural Boundaries Under Centralized Governance: Urban Environmental Movements in The Case of a Coastal Town, Ayvalık, Turkey

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This paper examines the evolving relationship between urban and rural territories under Turkey’s centralized governance model, focusing specifically on the case of Ayvalık and the implications of the 2012 Metropolitan Law (Law No. 6360). This legislation, which extended the jurisdiction of metropolitan municipalities to encompass rural areas, has significantly altered the socio-spatial dynamics of urban governance. By conceptualizing Ayvalık as a metropolitan hinterland, the study explores how central government’s administrative system redefines territorial boundaries, triggering urban expansion beyond

ecological thresholds through social confrontations and spatial-environmental transformations (Apostolopoulou, 2023; Arboleda, 2016; Acara & Penpecioglu, 2022).

The research highlights the role of urban environmental movements in these processes as key actors in participatory planning and governance, providing critical resistance to and engagement with the urbanization agenda. By situating Ayvalık within the broader framework of urban political ecology and planetary urbanization (Brenner & Schmid, 2014), the study seeks to uncover the socio-ecological and political consequences of integrating rural territories into urban governance systems and thus, intends to unravel the role of planning in an age of planetary crisis (Harrison & Heley, 2015).

In 2012, Turkey implemented the Metropolitan Law, which transformed the administrative and governance landscape of the country. By incorporating rural areas into metropolitan boundaries, it effectively erased the legal distinction between urban and rural territories. This restructuring has had profound implications, including changes to land use, resource allocation, and the socio-political fabric of rural communities. Expanding metropolitan boundaries has intensified socio-ecological conflicts, particularly in areas like Ayvalık, where environmental movements contest top-down governance. Known for its ecological and cultural heritage, Ayvalık was found to be an ideal case for studying centralized governance's impacts on urban-rural boundaries.

Key research questions include:

- How has the 2012 Metropolitan Law redefined the territorial boundaries between urban and rural in Ayvalık regarding socio-political dimensions?
- In what ways do urban environmental movements confront and influence the centralized governance model?
- What are the socio-ecological consequences of this integration for local communities and landscapes?

This study is grounded in the theoretical perspectives of urban political ecology and planetary urbanization, which challenge traditional dichotomies between urban-rural by emphasizing their interconnectedness. These frameworks provide a lens for analyzing the socio-ecological networks that shape and are shaped by centralized governance practices (Taylor & Derudder, 2015). Methodologically, the research adopts a qualitative approach, employing ethnographic methods such as participant observation and in-depth interviews with key stakeholders, including local and metropolitan activists. Additionally, cartographic tools are used to visualize the spatial transformations resulting from the changes in legislation and the activities of resistance.

Preliminary research indicates that Ayvalık's incorporation into metropolitan governance has led to significant shifts in land use patterns, with increased urbanization encroaching on ecologically sensitive areas. Urban environmental movements in the region have emerged as critical actors in resisting these changes, advocating for the preservation of natural and cultural heritage through participatory and inclusive approaches. These movements highlight the socio-political tensions between centralized governance and local autonomy, revealing new dimensions of urban-rural dynamics.

The study serves to contribute to ongoing debates on centralized governance and urbanization by offering a nuanced understanding of how urban-rural boundaries are redefined in contemporary Turkey. By focusing on Ayvalık, it provides empirical insights into the socio-ecological and political dimensions of this process, emphasizing the transformative potential of social movements. The findings aim to inform both academic discussions and policy-making, advocating for more inclusive and sustainable urban governance models that respect local specificities and ecological constraints.

Keywords:

Urban-rural boundaries; Centralized governance model; Urban environmental movements; Metropolitan Law

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Neo-Exogenous Development: China's Integrated Territorial Development Approach against Rural Marginalization

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Since the 1950s, China's rural areas have provided abundant cheap land, labour, and agricultural products to fuel urbanization and industrialization. To sustain this role, the state established institutional arrangements that marginalized rural areas in administrative, fiscal, and land development rights, alongside an unequal welfare distribution structure between urban and rural residents (Verdini and Xin, 2024). To ensure this extractive system functioned across China's vast territory, the government adopted a semi-formal governance model rooted in practices from the imperial era. Contemporary governance relies on "Janus-faced" village cadres who act as both community leaders and party-state agents, enabling flexible yet authoritative implementation of state directives tailored to local rural contexts (Xin and Gallent, 2024).

Over the past two decades, significant rural restructuring has occurred as the central government prioritized narrowing urban-rural disparities and improving access to basic services in rural areas (Shen, 2020). These efforts have increased the economic connectivity between urban and rural regions, while also diversifying the socio-spatial structures of rural areas. However, these changes have weakened the state-backed village cadre-centred governance structure. Emerging local forces, such as clans, gangsters, and entrepreneurs, have played increasingly prominent roles in rural governance, further eroding the authority of the central government. At the same time, the institutional structures underpinning urban-rural disparities remain largely unaltered.

In 2012, the new government introduced the National Rural Revitalization Strategy, marking the first time rural areas were positioned on equal footing with urban areas in national development priorities. This strategy is projected to allocate approximately 1 trillion USD to promote socio-economic development and improve living environments in rural regions (Xin and Deng, 2025). Similar to the EU's Integrated Territorial Development approach, rural revitalization emphasizes cross-sectoral collaboration (e.g., encouraging community participation), multi-level governance (e.g., requiring

contributions from all levels of government), and place-based strategies (e.g., exploring mechanisms to ensure rural households benefit from development gains). Some scholars have thus interpreted this as a neo-endogenous development model, a community-driven networked development approach.

However, unlike neo-endogenous development, which emerged in the context of neoliberal state withdrawal, I argue that China's rural revitalization represents a state-led networked development model with steered endogenous features, which I term Neo-Exogenous Development. A defining characteristic of this model is the top-down penetration of state power into rural communities through political mobilization. This approach serves two purposes: restoring the central government's grassroots authority and addressing structural rural marginalization.

This study critically examines the complex policy framework underpinning rural revitalization, including its associated laws, regulations, and initiatives, to theorize Neo-Exogenous Development. Through a qualitative case study of a village in Sichuan Province, an inland region in western China, this research explores the dynamics of the Neo-Exogenous model in practice. Findings reveal that state-driven measures targeting both government structures and rural society include: nationwide multi-scalar political mobilization, legislative and regulatory restructuring, zoning/rescaling, project-based financial expansion, community-based party-building, and urban-rural connecting initiatives.

These interventions, particularly those aimed at government institutions, have adjusted urban-industry-biased local development agendas. They have enhanced the administrative and fiscal authority of local rural governments and expanded villages' rights to land development. The state also plays a critical role in addressing market failures by channelling market resources into rural areas, fostering collaborations between enterprises and villages, and ensuring mechanisms for farmers to share in development benefits.

Nevertheless, despite its strengths, the Rural Revitalization Strategy serves a dual purpose of socio-economic development and reinforcing state's grassroots authority. This dual intent leads to an ambiguous stance on removing institutional barriers that restrict rural endogenous development. Consequently, many rural revitalizations practices risk being reduced to the construction of showcase villages, undermining the broader transformative potential of the strategy.

Keywords:

neo-endogenous development; social innovation; rural marginalization; statecraft; China

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T.04 GOVERNANCE (B) / 1192

From Intentions to Outcomes: Meaningful Collaboration in Participatory Processes for Sustainable Transitions

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This paper explores arising tensions and contradictions in participatory planning against the backdrop of strategic spatial planning and other overlapping nested planning paradigms (Albrechts, 2013). This is significant as the field of planning has shifted from traditional land-use planning to area-based, actor-driven and process-oriented planning (Albrechts, 2013). The aforementioned tensions are explored through the term “meaningfulness”, a sensitizing concept that is frequently used in planning practice and literature to capture an unmet desire felt by actors in participatory processes. It builds on the argument that these processes can be meaningful (Yeoman, 2019) when they offer opportunities for worthwhile activities that allow citizens to contribute to their living environment through care, stewardship, maintenance and repair. However, the absence of meaningfulness can lead to citizens feeling alienated from their living environment, other actors and the processes that sustain its development. This, understandably, impacts the perceived legitimacy of urban governance, subsequently influencing sustainable transitions in cities.

The research builds on this concept of meaningfulness based on action research conducted by the author in a deliberative participatory process for the proposed transformation of a former industrial district in a major Dutch city. The research included municipal data from an instrumental participatory process, municipal policy documents and ethnographic data. The author, as a researcher and contributing member of the process, followed the interactions between a citizen delegation, a municipal project team, and a facilitator, all with the collective goal of exploring the ambitions of a municipal structural framework plan for the district. The citizen delegation aimed to present a collective value map, developed alongside other stakeholders, to encapsulate the ‘soul’ of the existing lived environment, which they felt was inadequately represented in the municipal framework plan.

The study of these interactions offers grounded insights into how actors experience meaningfulness, or the lack thereof, while participating in collaborative processes urban transition projects. To operationalise “meaningful” outcomes, the intentions of actors or commitments to action (Bratman, 1987), are used to study their motivation to seek or invite collaboration over their living environment, and how their actions evolve through collaboration with others. These intentions are studied through the concept of “pragmatic registers” (Stapper and Duyvendak, 2020) which have been adapted in this research from their original conceptualisation in the literature as a tool for sociological critique to a novel methodological tool for transformative social innovation (Avelino et al., 2019) in participatory processes. The research maps three pragmatic registers to illustrate how intentions transform in participatory processes to draw new lessons for meaningful collaboration in participatory planning for urban transitions. The lessons are, a) embracing uncertainty in urban transition projects – scenarios as opposed to normative “frameworks”, b) creating novel institutional arrangements that give local stakeholders opportunities to impact socio-spatial context like facilitating community-benefit agreements, and c) using multi-value creation as a guiding objective as opposed to participative or deliberative democracy.

Keywords:

meaningful collaboration; participatory planning; pragmatic registers; social innovation; sustainable transition

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T_04 GOVERNANCE (B) / 1283

Involving Youth in Urban Governance: Project on the “Participatory Skills for Sustainable Urban Governance

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Often formalized, if not ossified, governance structures frequently disregard engaging diverse voices and open the arena to alternative means of addressing local(ized) challenges. The inclusion of youth—often overlooked in decision-making—promises to bring fresh perspectives to shaping pathways towards more equitable and sustainable urban futures. However, youth participation faces significant systemic barriers, including limited access to platforms for civic engagement, inadequate decision-making frameworks, insufficient recognition of youth organizations, mistrust between generations and often fragmentation of youth initiatives, all of which hinder meaningful engagement in urban planning and decision-making processes. The Participatory Skills for Sustainable Urban Governance (PS-U-GO –psugo.eu) project introduces Urban Living Labs (ULLs) as open and accessible platforms to address these gaps, fostering youth participation in urban governance based on inclusive co-creation, knowledge exchange, and problem-solving in response to global and local urban challenges.

Problem Addressed:

Drawing on co-governance models, which bring together actors from academia, government, industry, and civil society, ULLs offer a dynamic framework for diverse stakeholder engagement in decision-making that balances local needs with global challenges while ensuring, while addressing challenges such as power imbalances, conflicting priorities, and bureaucratic inertia. PS-U-GO furthers ULL methodology by facilitating youth engagement. Implemented in four distinct urban contexts—Naples, Nicosia, Palermo, and Cottbus—the project addresses issues such as social exclusion, resource inequities, and insufficient mechanisms for democratic participation. Through ULLs, PS-U-GO empowers youth to shape urban transformation processes, fostering their sense of agency in enacting meaningful change.

Methodology:

PS-U-Go's methodology is structured across three phases: Design and Initiation, Operation, and Evaluation and Feedback. The Operation phase is pivotal for entailing “learn-make-show” and includes:

- Theme Choice: Identifying needs and opportunities, with a focus on youth, to select relevant themes or topics.
- Exploration: Lab sessions, on-site explorations, and urban masterclasses with external experts to acquire new knowledge and co-develop ideas for positive urban action.
- Experimentation and Co-Creation: Co-creating, testing, and prototyping (if needed) with support from external experts to achieve the desired outcomes.
- Urban Showcase: Sharing the process and outcomes with the public to communicate the new knowledge creatively and effectively.

Tools such as GIS mapping, co-design workshops, participatory storytelling, participatory action research and creative actions like gamification are employed to ensure inclusive and meaningful participation and allow for contextual adaptation. A hybrid approach—blending digital and analog tools—addresses accessibility challenges while fostering dialogue and collaboration. Iterative feedback mechanisms and evaluation tools, such as NVivo and Tableau, offer actionable insights enhancing stakeholder engagement and project outcomes, fostering reflective learning and creating continuous feedback loops. The methodology adapts to local contexts, integrating stakeholders from the quadruple helix—academia, industry, government, and civil society—to promote cross-sectoral collaboration.

Outcomes:

While co-governance models foster collaboration and innovation, they are not immune to challenges such as power imbalances and insufficient recognition. PS-U-GO illustrates how equipping young people with the skills and opportunities to influence urban decision-making can offset these challenges. The project's four ULLs adopt a flexible and adaptable methodology and act as four different cases of youth-inclusive urban governance models/ cases. Working in parallel, from December 2024 to October 2025, these ULLs foster knowledge exchange through training events, with a well-organized schedule and key shared points of exchange. PS-U-GO offers a replicable framework for promoting equitable, sustainable, and resilient urban development globally, showcasing the importance of youth inclusion in overcoming future local and systemic challenges.

Keywords:

urban living labs; urban governance; community engagement; youth participation

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T_04 GOVERNANCE (B) / 1317

Beyond ordinary boundaries. Dealing with housing rights to address spatial inequalities

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The City of Naples is facing the complex challenge of dealing with the consequences of a persistent housing crisis. The reconfiguration of public housing settlements, often

marked by serious conditions of blight and poverty, represents a structural problem for the city, a long-term emergency to be governed, recently carried out in the framework of National Recovery and Resilience Plan (NRRP), that is part of the Next Generation EU Programme.

The ongoing regeneration of the “Taverna del Ferro” housing estate in East Naples, known as the Bronx, marks the beginning of a significant urban transformation in a neighbourhood historically burdened by social and urban decay. The blue fences surrounding the working site can be read as a symbol of the ongoing change.

Environmental and energy transitions are key components of the NRPP project, while citizens’ involvement is a priority in the administration’s political agenda.

The town council is striving to develop innovative regulatory approaches, particularly by creating new forms of social agreements that ensure the active participation of local communities in the ongoing transformations. These transformations highlight the need to develop sustainable transformation models capable of triggering public policies that respond to the economic and social needs of the neighbourhood. The objective is to ensure a regeneration process that is not only lasting, but also capable of stimulating new local economies and triggering employment opportunities.

This contribution starts from the results of a mapping activity carried out in collaboration with the “Ex Taverna del Ferro” fight committee and local inhabitants. Just before the opening of the construction site, the primary objective of the survey was to capture an overview of the formal and informal uses of the ground-floor spaces in the Taverna del Ferro residential buildings and the surrounding garages. The mapping was complemented by interviews with key local witnesses from the community and associations.

The case study prompts multiple reflections:

- on local responses to policy inputs coming from EU programmes;
- on institutional challenges to propose new regulatory approaches or changes in current regulations;
- on the role of collaborative mapping and interviews as tools for involving residents in the housing estate regeneration.

The paper explores how expectations and perceptions emerging from the collaborative mapping can be translated into effective project strategies. It highlights the importance of integrating issues such as valorising the informal local economy, improving the quality of public spaces, and preserving the cultural identity of the neighbourhood into regeneration plans. This integration is essential to ensure that transformation does not lead to displacement or social exclusion. In this context, the relational capabilities between the actors involved - administrations, planners and inhabitants - play a central role through participatory governance tools.

Such an approach results in consolidating mutual trust among actors, thus promoting an ‘open’ transformation process where mutual learning is addressed overcoming ordinary boundaries. It also works as a lens for analysing the relationships between stakeholders, uncovering inequalities and power relationships, thus treating potential conflicts during the transformation process.

Keywords:

participatory governance; community engagement; regulatory innovative approaches; housing rights

T_04 GOVERNANCE (B) / 1352

PARTICIPATION AFTER DISASTER: CENTRAL GOVERNMENT APPROACH TO PARTICIPATION PLANNING

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In the light of social movements that started in the 1960s, individuals began to demand equality and democratic processes. With discussions on the individual's relationship with the city, participation was included in urban studies, especially in the second half of the 20th century. As the 21st century came, it is passing as an age of crises because of consecutive crises ranging from increasing climate change and environmental degradation to social and economic inequalities. While the world struggles with the crises caused by the irreversible impact of humanity on the environment, there is also a vulnerable segment of the world caused by socioeconomic inequality. Existing management systems are expected to overcome the crisis by intervening with short-term policies in the face of crises. However, the crisis experienced because of cities with complex social, economic, spatial, and environmental relations causes other crises (Şengül, 2023). To understand these complex relations and the vulnerable part of society, participation in the management system should be increased and the area of negotiation and dialogue should be kept wide. Therefore, in recent years, many studies such as the Sendai Framework have been conducted to institutionalize participation in disaster management. The focus of this study is to examine the participation perspective in the recovery process of Turkey after February 6, 2023, Kahramanmaraş earthquakes from the institutionalized participation understanding in the world. In the light of the literature on participation, the participation perspectives of various stakeholders in the post-earthquake recovery process are evaluated. From the literature, evaluation criteria for involvement have been identified to ensure success in democratic governance. The stakeholder participation plan in the Earthquake Recovery and Reconstruction in Rural Areas Project (KADİYAP), implemented by the Ministry of Environment, Urbanization, and Climate Change with financing from the World Bank, was reviewed, and the central government's approach to managing the participation process was evaluated. The evaluation criteria from the literature were assessed based on the participation methods used by the central government, feedback from stakeholders, and information published in the report about the stakeholders participating in the plan. The process was evaluated based on the three participation principles of justice and power sharing, transparency and accountability, and inclusiveness. Inclusiveness issues such as the few women participants in some meetings were observed. Problems such as the absence of a staff member from a state institution who would be the addressee of most of the stakeholders' questions indicate that the project is limited to providing one-sided information. This participatory plan of the central administration consists of providing information only with a top-down approach. The lack of mutual dialogue with society, local institutions, and civil society organizations prevents power sharing between institutions. Finally, the fact that the complaint mechanisms developed for a more transparent process are directly under the central administration cannot be a successful application as it turns into a system where the government controls the citizens. Finally, for this plan to be interactive and participatory, it needs to create areas where stakeholders can negotiate among themselves, and it is expected to be a flexible and transformative process for the upcoming process.

Keywords:

Disaster Management; Participation; Stakeholders; Inclusivity; Central Administration

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T_04 GOVERNANCE (B) / 977

Multilevel Governance for Urban Water Resilience, the case of the Water as Leverage (WaL) Programme

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Enhancing urban water resilience is a key challenge for climate change adaptation. Cities worldwide are implementing strategies to address increasing threats such as flooding, drought, and water scarcity. These efforts depend on local community engagement, alignment with national policies, and financial support from international donors. At the same time, national governments and donors rely on cities for the implementation of these strategies. These interdependencies, fundamental to polycentric governance, require effective coordination among governmental and non-governmental actors. Coordination in multilevel governance balances top-down, state-centric approaches with bottom-up, governance-focused models. While top-down approaches emphasize hierarchy, bottom-up approaches highlight local, networked solutions. Striking a balance between input legitimacy (participation) and output legitimacy (effectiveness) is essential. Bottom-up models promote innovation and scalability, which are key for addressing complex environmental issues like urban water resilience. Furthermore, the institutional settings and structures within which multilevel governance processes operate are crucial, as they shape the interactions and decision-making processes across different levels of government and stakeholders, influencing the overall effectiveness of resilience strategies.

Building on Dieperink et al. (2018), who identified six key mechanisms for multilevel governance coordination—(1) policy entrepreneurship, (2) bridging concepts, (3) clarity about rules, (4) financial resources/funding, (5) governmental hierarchy, and (6) coordinating bodies—this paper first develops a typology of actionable strategies that stakeholders in urban water resilience initiatives can apply to improve coordination across government levels. Secondly, the use of such strategies in the Water as Leverage (WaL) programme is discussed. Launched in 2017 by Henk Ovink, then the Special Envoy for Water Affairs of the Netherlands –and drawing inspiration from the Rebuild by Design competition developed in response to Hurricane Sandy’s devastating impact on the U.S. Eastern coast, Water as Leverage (WaL) tackles water and climate challenges with innovative and inclusive solutions. The first *WaL programme for Resilient Cities Asia* has expanded globally with initiatives in Cartagena (Colombia), the Wadden Sea (Denmark, Germany, Netherlands), Nakuru (Kenya), and ongoing projects in India, Indonesia, and Thailand. This paper zooms in on the WaL projects in Cartagena and Chennai. It is shown that WaL developed strategies to bridge the gap between local users and donor agencies, and secure funding throughout the project cycle. WaL advocates early procurement strategies, pilot projects, and workshops to manage financial risks. As an example, in Cartagena, the WaL team engaged funding agencies from the outset. Representatives from Invest International were included in the Advisory Board to ensure that projects met investment criteria. By aligning local projects with funding agency requirements from the start, the WaL team secured funding and support. This early collaboration facilitated the design of projects that met financial and policy criteria, fostering collaboration through local design and policy-finance workshops. In Chennai, water challenges were addressed through pilot projects using Nature-Based Solutions (NBS), moving beyond traditional siloed approaches. Collaboration between local actors and international experts fostered shared understanding, cross-scale connections, and innovation. These pilots provided proof of concept and insights, catalysing upscaling efforts, sustaining the WaL movement’s momentum, and inspiring further achievements.

While the WaL programme has contributed to advancing multilevel governance for urban water resilience, findings indicate that the process is ongoing and complex. Enhancing multilevel governance is a challenging and iterative process. However, the coordination mechanisms and strategies outlined in this paper can serve as a resource for stakeholders involved in urban water resilience initiatives, offering inspiration and practical guidance for improving multilevel coordination.

Keywords:

Multilevel governance; institutions; water resilience; Water as Leverage; coordination strategies.

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T_04 GOVERNANCE (B) / 895**Towards Integrated Water Governance in Indonesia: Harmonizing Local and Transboundary Solutions****Author:** Retno Sari Dewi¹**Co-authors:** Mega Anggraeni²; Wiwandari Handayani¹¹ *Department of Urban and Regional Planning, Universitas Diponegoro*² *Center for Urban and Regional Resilience Research (CURE)***Corresponding Authors:** wiwandari.handayani@pwk.undip.ac.id, retno.sari.dewi@pwk.undip.ac.id, mega.anggraeni12@gmail.com

Water plays a crucial role in sustaining life, maintaining ecosystems, and facilitating economic progress. Nevertheless, its management presents complex challenges in the face of growing demands and environmental changes. Effective water governance is essential for enhancing resilience and ensuring the sustainable management of water resources. The mismanagement or overexploitation leads to the depletion of essential freshwater supplies, thereby leaving communities and ecosystems vulnerable to shortages. Furthermore, excessive extraction and improper waste disposal potentially degrade water quality, harm aquatic habitats, and disrupt the natural equilibrium of ecosystems. Coastal cities face particularly complex water management challenges due to the confluence of climate change impacts, rapid urbanization, and significant land subsidence. For example, Indonesian coastal cities such as Jakarta, Pekalongan, Semarang, and Demak confront an array of escalating water-related problems, including persistent flooding, water shortages, deteriorating infrastructure, and socio-economic disruptions. According to the data from National Disaster Management Agency, floods become the most frequent disaster in 2024. However, water management initiatives are often compromised by fragmented governance structures and constrained authority at various administrative levels, leading to inefficiencies and overlaps in roles and responsibilities. The complexity of governance is further exacerbated by transboundary dynamics. A case in point is the flooding experienced in Semarang City, which is partially attributed to the Garang River's flow originating in the upstream regions of Semarang Regency. Consequently, mitigating flood-related issues in Semarang City requires collaborative efforts with stakeholders from Semarang Regency. As water disregards administrative boundaries, managerial decisions transcend administrative borders, introducing additional layers of intricacy to the existing challenges.

Addressing these multifaceted challenges requires transformative approaches to water governance that integrate technical, social, and financial dimensions. This research examines the dynamics of water governance in Indonesia, focusing on the roles and interplay of various stakeholders across different hierarchical levels. Employing a qualitative approach, the research incorporates policy reviews and in-depth interviews with representatives from governmental bodies, private enterprises, community-based organizations, and academic institutions. The study identifies critical gaps in governance, including overlapping responsibilities, insufficient coordination between vertical (national to local) and horizontal (cross-sectoral) stakeholders, over-reliance on external actors, and financing mechanism. These systemic issues constrain the ability of local governments and stakeholders to implement integrated and sustainable water management practices effectively.

The findings reveal a highly complex network of stakeholders with overlapping mandates and competing priorities, often resulting in fragmented urban water governance. While national and regional governments play central roles in policy formulation and resource allocation, local governments and community groups frequently lack the capacity to implement integrated solutions. Additionally, at all levels, stakeholders in Indonesia tend to prioritize short-term profitability over long-term resilience. These challenges emphasize the urgent need for multi-stakeholder platforms that can foster collaboration, enhance accountability, and build adaptive capacity to address the impacts of climate

change and rapid urbanization. Lessons drawn from the Indonesia case provide valuable insights into enhancing water management systems, ensuring they are resilient, inclusive, and adaptive to the evolving needs. This research contributes to a better understanding of stakeholder dynamics in water-related urban development, offering actionable insights for fostering more equitable and sustainable governance frameworks in Indonesia's coastal cities.

Keywords:

Water Governance; Water Management; Indonesia

T_04 GOVERNANCE (B) / 1548

Participatory Urban Planning for Sustainable Urban Regeneration: Insights from a Case Study in Korea

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Participatory urban planning has emerged as an essential approach to addressing urban decline and fostering sustainable development. This study examines South Korea's Majeon Urban Regeneration Special Program, implemented in Majeon Village, Geumsan County, as a case study to assess the effectiveness and limitations of participatory planning in the Korean context. By analyzing planning and implementation processes, this research aims to derive insights applicable to both South Korea and broader international urban planning practices.

The study employed qualitative research methods, including collaborative workshops and focus group interviews (FGIs) with key stakeholders such as local residents, municipal authorities, public institutions, urban planning experts, and a local university. The results demonstrate that participatory planning in South Korea can generate democratic and context-specific urban design proposals by employing a phased approach and clearly defined stakeholder roles. Collaboration with a local university significantly improved the feasibility and quality of design proposals, while community engagement fostered social capital and economic revitalization. However, critical challenges were identified, including weak institutional support, inconsistent citizen engagement in later phases, and insufficient implementation strategies.

To contextualize the Korean case within a global framework, this study compares the Majeon Urban Regeneration Special Program with international participatory planning models, including Germany's Integrated Urban Development Concept (ISEK), Japan's Machizukuri, and the Community-Based Planning framework in the United States. Germany's ISEK model highlights the necessity of institutionalized participatory planning, where local governments facilitate early citizen engagement while ensuring professional expertise in later stages. Japan's Machizukuri model underscores the role of sustained community cooperation, fostering long-term resident involvement through locally embedded governance structures. The U.S. Community-Based Planning framework demonstrates the benefits of tailored, bottom-up approaches that integrate local knowledge into urban design.

The comparative analysis suggests that while South Korea's participatory planning approach has demonstrated strengths in democratic decision-making and collaborative design, it requires stronger institutional backing to ensure long-term sustainability. The study recommends policy measures such as legal frameworks that mandate citizen participation from the early planning stages, localized support networks to enhance community engagement, and standardized models for university-community collaboration. Additionally, the establishment of sustainable resident councils, similar to Japan's Machizukuri, could provide a mechanism for ongoing citizen involvement beyond the initial planning phases.

This research contributes to the global urban planning discourse by emphasizing the

need for context-specific participatory planning frameworks that balance top-down institutional support with bottom-up community engagement. By strengthening the implementation mechanisms of participatory urban regeneration, South Korea can enhance the effectiveness of its urban renewal policies while offering insights applicable to other socio-cultural contexts worldwide.

Keywords:

Participatory Urban Planning; Urban Regeneration; Community Engagement; Sustainable Development

T_04 GOVERNANCE (B) / 1524

Towards co-governance? Emergent norms and forms of neighbourhood governance in urban China

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Portraited as the ‘last mile’ and ‘basic unit’ of social governance in Chinese official discourses, the neighbourhood has recently gained unprecedented importance in Chinese cities. Active neighbourhood participation and multi-actor collaboration become the new norms of neighbourhood governance, characterised by the emergence of multiple new forms of governance led by different stakeholders. Traditional neighbourhood governance predominantly led by state actors and the semi-private governance in gated communities are widely being replaced by ‘neighbourhood co-governance’ in both discourses and practices. In the past decade, three major forms of neighbourhood co-governance have emerged: state-led co-creation, professional-led place-making, and enterprise-party co-development, which is led by the local state, societal actors, and market actors respectively. Not only the leading actors in each type of co-governance matter, but also the configuration of the governing structure, i.e., the roles of key stakeholders and their power relation, is essential to understanding the variegated forms of neighbourhood co-governance. This research aims to answer three sets of questions: What are the distinctive features and underlying mechanisms of these new norms and forms of neighbourhood governance? Do they represent a paradigm shift towards more participatory and inclusive neighbourhood governance? Can they achieve the alleged goals of neighbourhood satisfaction, cohesion, and participation?

To address these timely yet largely unexplored questions, this research employs the theoretical lens used in examining state-market-society relations in China, including the state project of crisis management (He et al., 2020), state infrastructural power (Cai and He, 2022), and state entrepreneurialism (Wu, 2018), to scrutinize the emerging norms and forms of neighbourhood governance. Case studies in Guangzhou illustrate how local governments enhance the inclusiveness and effectiveness of neighborhood governance by engaging various third-party actors, such as local enterprises, community planners and other urban professionals, and residents’ self-help groups (Zhao et al., 2024). Local governments are skillfully avoiding direct confrontation with residents by incorporating urban professionals and empowering social actors to promote co-production among multiscale participants.

The rise of neighbourhood co-governance in Chinese cities can be conceptualized as an enactment of a distinctive entrepreneurial state project that serves the purpose of crisis management through consolidating state infrastructure power, delivering governance goals, and practicing entrepreneurial governance at the neighbourhood level (He and Cai, 2024). The state-led co-creation helps strengthen the legitimacy and

power of local governments in neighbourhood governance by co-opting opinion leaders among residents, integrating resources across administrative boundaries, and seeking empowerment from higher-level governments. Neighbourhood garden-building helps local governments achieve their economic and social governance goals, by bridging governments' needs for budget saving and residents' demands for better quality of life. For enterprise-party co-development, the property management company and developers see co-governance as a good opportunity to maintain a good relationship with the local government, leverage more state investment, and sustain property prices, while the participation of residents is mainly limited to party members, elites, and retirees. This research advances our theoretical and empirical understanding of neighbourhood governance and inform urban planning in Chinese cities and beyond.

Keywords:

neighbourhood co-governance; state-market-society relation; state project; state entrepreneurialism

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T.04 GOVERNANCE (B) / 319

Community Renewal and Autonomous Governance Dynamics: A 30-Year Analysis of Hangzhou's Practice

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China's urbanization is transitioning from rapid development to high-quality development, with community renewal in old urban areas being a key component. However, due to the dispersed property rights and complex interests in old communities, the difficulty of community renewal has increased. New governance models are urgently needed to alleviate the contradictions and conflicts that arise.

As a representative city in China's developed southeast coastal region, Hangzhou has been continuously renewing its urban landscape, driven by the Internet industry and major events such as the Asian Games. The renewal of its residential neighborhoods is imminent. This paper uses Zhegong Xincun as an observation window to examine the community renewal process and the development of autonomous governance in Hangzhou over the past 30 years. It explores the continuous coupling process between the two and the factors affecting autonomous community renewal, proposing adapted policy suggestions.

We propose an analytical framework of "Evolution - Coupling Process - Role Mechanism - Adaptation Strategy." First, we summarize the coupling process between Hangzhou's urban renewal from 1993 to the present and the evolution of self-governance through

text analysis and expert interviews. We then conduct an in-depth examination of multiple stakeholders, including residents of Zhegong Xincun, local and higher-level governments, design and construction units, and media, using questionnaires and semi-structured interviews. Additionally, we interview residents from other communities, such as Cuiyuan and Binfen, to reveal the mechanism of autonomous renewal from dimensions of environmental variables, acceptance criteria, participation criteria, and participants.

The study finds that: 1. Over the past 30 years, Hangzhou's community development and renewal have shifted from material renewal to organic renewal, encompassing elemental renewal, tenure renewal, and organizational renewal from a spatial governance perspective. 2. With people-oriented urbanization and the awakening of public property rights awareness, public participation in Hangzhou has evolved from non-participation to tokenistic participation to public control, currently manifesting as empowerment. 3. Factors influencing public participation are multidimensional. Environmentally, they benefit from Hangzhou's urban renewal concept, its economic environment, and real estate situation. Acceptance criteria are enhanced by the independence and transparency of the participation process and early resident involvement. Participation criteria are supported by the accessibility of resources through public platform construction, standardized decision-making, and professional, public cost-benefit calculations. Participants, being retired teachers in Zhegong Xincun, have overall economic conditions, cultural literacy, cognitive abilities, and social integration that are necessary for autonomous renewal success, giving Zhegong Xincun certain unique characteristics. 4. Essentially, autonomously-governed renewal succeeds through top-down empowerment and bottom-up governance. Future urban renewal should focus on developing standardized reception and participation criteria, including processes and consultation mechanisms.

This study provides a clearer understanding of Hangzhou's community renewal and autonomous governance evolution and their coupling process. Theoretically, it offers a new research framework revealing autonomous governance's underlying logic and influencing mechanisms. Practically, it emphasizes promoting relevant norms and standardized processes to improve the autonomous governance system and capacity. Despite the project's localization and specificity, it serves as a benchmark for demonstration.

Keywords:

Community Renewal;Autonomous Governance;Coupling Process;Influencing Mechanisms;

T_04 GOVERNANCE (B) / 1656

Building institutional capacity for meaningful citizen engagement –exploring public-private-civic collaborations in Dutch urban development practice

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As cities worldwide face growing social challenges such as socioeconomic segregation or climate injustices, engaging citizens in urban planning and development is considered increasingly important. Involving local communities not only leads to better understandings of local needs and potentially more effective plans, meaningful citizen-planner dialogues might also help to foster trust and to enhance social cohesion (Othengrafen et al, 2024). A common challenge of participatory practices, however, is that they remain situational and need to be scaled up to sustain and to make a wider impact. One

potential solution is to shape institutional conditions that support sustainable citizen engagement within broader governance structures.

While various studies reporting on institutional conditions for citizen engagement depart from public perspectives, contemporary European urban transformations often involve both public, private and civic actors. Although market actors are often seen as actors merely incentivized by maximizing profit, regulatory frames such as ESG policy at the European level motivate investors and financiers in urban development to create social value or 'to make a social impact'. This shift has led market parties such as real estate developers, housing developers or housing associations developing programs in which they operationalize livability, resident wellbeing or social equity goals –often through citizen engagement approaches. However, given that citizen engagement is relatively new to many market parties, the question occurs to what extent they possess sufficient institutional capacity to practice citizen engagement in an inclusive and meaningful way.

This article presents an in-depth analysis of two cases of citizen engagement practice in the Netherlands in which multiple public, private and civic actors collaborate with citizens to address urban livability aspects. The cases comprise a neighborhood evaluation project initiated by a real estate and construction company on the one hand, and a neighborhood upgrading program initiated by a housing association (in the Netherlands: a non-for-profit market party) on the other hand. The analysis explores how institutional capacity of the various public and private actors involved affect citizen engagement by distinguishing knowledge resources, relational resources and mobility capacity (Healey et al., 2003; Innes & Booher, 2003). Findings reveal how 'formal' capacity aspects such as policies, funding, administrative structures, and assessment methods influence the way that collaborations and citizen engagement are performed but also emphasize how 'informal' capacity aspects such as values, beliefs and habits play a significant role in terms of meaningfulness. By empirically observing the role of market actors in citizen engagement amidst other public and civic actors, this article provides a better understanding of collaborative governance as a way forward in increasing the social value of cities.

Keywords:

institutional capacity, participatory approaches, citizen engagement, collaborative governance, private actors

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T_04 GOVERNANCE (B) / 1665

The governance of peri-urban areas for inclusive transformations: Challenges of Governance-Cases acting within multi-level conditions (1)

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To cope with the multiple contemporary crises (climate, social, economic), cities have eagerly searched for governance approaches which enable an inclusive socio-ecological transformation of their built environment, economies and societies. In the scholarly and policy debate about that issue, peri-urban areas, which are certainly part of the European urban landscape, have been widely neglected. Broadly speaking, peri-urban areas are highly dynamic territories characterized by spatial and demographic fragmentation. They comprise denser cores along the main corridors of public transport and motorways, small towns or villages loosely connected to the mobility network, and, in some cases, vast natural environments which connect these areas to a rural hinterland. Individual mobility is mainly based on the car, although this differs according to the spatial arrangements.

As a result, the urgency of intervening towards inclusive transformations is arguably greater in peri-urban areas than in large cities, as these areas may struggle more to comply with sustainability goals and provide a high quality of life for their inhabitants. This implies that peri-urban areas have a strong incentive to implement effective governance solutions. Addressing the key challenges of peri-urban governance basically means coordinating socio-spatial development in a crowded and complex landscape of policy actors, priorities, scales and borders, which are highly interdependent but have scattered institutional capacity.

In response to this context, our contribution analyses multi-scalar governance initiatives and instruments in an Austrian peri-urban area to critically address to what extent the dynamics, opportunities and limitations of cross-level governance may support, boost, hamper or neglect interventions towards inclusive socio-ecological transformations. Specifically, we discuss whether the overlapping and conflictual spatial scales, sectoral priorities and administrative borders that determine cross-level governance actions can go beyond zero-sum bottlenecks and generic responses that bypass strong, collectively shared goals. Our contribution presents a mapping of actors, instruments and initiatives involved in governance processes in the district of Bruck an der Leitha, a highly dynamic border region situated between two European metropolises, Vienna and Bratislava. As we are focusing on the peri-urban territory in Austria, the research project in general also examines peri-urban regions in Portugal, Belgium and The Netherlands. We are reflecting governance examples against the background of widely differing socio-spatial arrangements, differing perceptions of the regions by its residents, sub-optimal decision-making processes, poorly aligned actors and norms, and messy social choices.

In the peri-urban areas of Bruck an der Leitha there are five governance cases discussed, which touch different levels of governance and transformative topics and basically entail hard and soft governance efforts. These are analysed in detail to understand their impact towards a more accessible region, reachable daily amenities and sustainable mobility.

Preliminary conclusions point to the fact that spatial, social and institutional contexts matter in order to understand and improve governance efforts for inclusive transformations in peri-urban areas.

(1) InPUT: “Engaging Places and Communities for Inclusive Peri-Urban Transitions” . Project funded by the JPI Urban Europe Program “Driving Urban Transitions to a Sustainable Future”(2022).

Keywords:

Peri-Urbanism; 15-Minute-City; Inclusivity; Transformation; Governance

T_04 GOVERNANCE (B) / 1685**Place-Based Engagement Strategies with Local Communities for better Climate Resilience Governance in Disaster Situations: Putting Principles into Practice for Local Governments****Author:** Luz Navarro¹**Co-authors:** Ana Cristina Fachinelli²; Giulio Verdini¹; Rafael de Lucena Perini²¹ *University of Westminster*² *Universidade de Caxias do Sul***Corresponding Authors:** g.verdini@westminster.ac.uk, l.navarro1@westminster.ac.uk

The increasing frequency and severity of climate-related disasters highlight the urgent need for inclusive and adaptive governance that prioritizes local engagement. Traditional top-down climate strategies often fail to address community-specific needs, leading to ineffective disaster preparedness and long-term adaptation (Ziervogel et al., 2017). Grassroots climate initiatives frequently remain scattered and lack the coordination and resources necessary for a more significant impact (Lovell, 2024). By leveraging local knowledge, authorities can foster innovation, enhance awareness, and strengthen community participation in disaster risk reduction (Dursun et al., 2020). However, many small- and medium-sized cities in Brazil and the Global South lack the institutional capacity to effectively engage residents in climate governance.

This research examines how local authorities can develop place-based engagement strategies to enhance climate resilience governance in Caxias do Sul, Brazil, a region recently devastated by extreme flooding. The May 2024 floods resulted in fatalities, displacement, and widespread infrastructural damage, underscoring the urgent need for more effective disaster governance (Browning, 2021). The disaster exposed critical gaps in local preparedness, and addressing these gaps requires context-sensitive engagement strategies that integrate local knowledge into resilience planning (Hughes & Hoffmann, 2020). Recognizing this, our research employs a participatory, co-design approach, bringing together local government officials, community organizations, businesses, and researchers from Brazil and the UK (Sheffield et al., 2017).

Our paper presents findings from the ESRC-funded project, “Place-Based Engagement Strategies with Local Communities for Better Climate Resilience Governance in Disaster Situations.” The project develops civic engagement strategies for co-designing climate-resilient policies in Caxias do Sul, addressing urgent climate challenges and strengthening community resilience (Baró et al., 2022). The primary objectives are to increase awareness of climate risks and co-develop effective civic engagement strategies to facilitate community involvement in resilience policymaking (Badolo, 2024). Ultimately, it aims to enhance the capacity of local governments to integrate local voices into climate resilience governance (Cannon & Müller Mahn, 2010). This was addressed through four participatory workshops, each focusing on key aspects of climate governance (Malloy et al., 2022). The workshops facilitated the co-development and testing of participatory tools, enabling local authorities and planners to collaboratively shape resilience strategies with residents and stakeholders (Bulkeley et al., 2013). The findings demonstrate that co-designing policies with affected communities leads to more actionable, context-sensitive solutions than conventional top-down governance models (Badolo, 2024).

Our research contributes to the reframing of urban resilience planning as a social and participatory process rather than a purely technocratic endeavor. It highlights the potential of participatory planning in strengthening disaster preparedness and long-term urban resilience while addressing climate vulnerability, emphasizing the need for alternative governance models that prioritize inclusivity, justice, and local agency (Dursun et al., 2020). Additionally, we provide valuable insights for urban planners, policymakers, and researchers interested in developing community-centered climate adaptation policies. By fostering direct collaboration between affected communities and government

officials in climate resilience policy, this research offers a scalable and adaptable framework for integrating participatory governance into climate adaptation strategies (Byskov et al., 2019). We advance broader discussions on climate justice, resilience planning, and co-production in policymaking, offering practical pathways for strengthening local capacities in climate governance (Ziervogel et al., 2017).

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Planning social infrastructure in cities: A historical account from Brussels

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This paper traces the changing role and conceptualisation of social infrastructure in Brussels'urban planning tradition, paying particular attention to the interactions and power dynamics between the planners, policymakers, and citizens involved. We will examine whether and how these actors have thought about social infrastructure as a category and included it in plans, as well as what the underlying power dynamics and visions were that shaped these decisions. Scholars see social infrastructure as a lever for dealing with global crises at the urban level (Klinenberg, 2018; Latham & Layton, 2022), although this same infrastructure also risks worsening crises by reinforcing inequities or upholding existing power relations (Horton & Penny, 2023). To prevent such adverse effects, the planning process of social infrastructure needs to efficiently involve a wide variety of actors at different scales, fostering generative conflict to drive transformative change that addresses both global challenges and local community needs. By improving our understanding of the evolving ways in which social infrastructure has been approached in Brussels'urban planning since the creation of the Brussels Capital Region in 1989, this paper intends to provide insights into how planning systems in general could be adjusted to enable transformative change. Empirically, the paper (i) reviews existing literature about the history of planning in Brussels (Carlier et al., 2022; Levy, 2015;

Vermeulen, 2015) to map historical trends, (ii) analyses how social infrastructure is approached and discussed in municipal and regional policy and planning documents, (iii) reports on semi-structured interviews with planners, policymakers, activists, and academics to gain insight into underlying power dynamics, (iv) and reconstructs the public debate on social infrastructure by consulting the archives of Brussels-based social movements as well as major news sources.

Keywords:

Planning system; social infrastructure; actors; collaboration; scale

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T_04 GOVERNANCE (B) / 1312

Before and after the pandemic period: 'Trade districts' in Lombardy and governance of urban and territorial services

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The COVID-19 pandemic has profoundly affected trade in Italy, highlighting structural weaknesses and catalyzing significant changes in the production and distribution sectors. This aspect emerges prominently in Lombardy, the epicenter in Europe of the health and economic crises.

During this period (2019-2022) the Regional Council of Lombardy has drafted and approved the Multi-Year Programme for the Development of the Commercial Sector-PPSSC, as a policy framework document for the retail trade network in Lombardy. This document provides the fundamental components for the advancement of fixed location retail trade, with particular reference to diverse sales structures, while introducing regulatory measures and proactive policies aimed at rebalancing and integrating the various forms of distribution. The Programme has been outlined and structured by feeding on a debate, which has involved institutions, economic and territorial actors, and that has taken on the transformations of lifestyles and purchasing habits that have emerged with the pandemic crisis, placing the quality of city and territorial living at its core.

The PPSSC identifies six territorial areas of commerce in Lombardy, recognising different conditions of population density and opportunities for integrating the commercial function into the network of services: from metropolitan and urban polarities to mountainous or plain inland areas (suffering from demographic decline and commercial desertification), with intermediate areas made up of medium-density urbanised contexts interdependent with the main urban systems.

Based on the contents of the Monitoring Plan (drawn up as part of the Strategic Environmental Assessment procedure and approved together with the Programme), this research aims to analyse the main trends in the commercial sector that have affected Lombardy before and after the pandemic crisis, and especially to examine the extent to which the pandemic event represented a temporary crisis or, conversely, the beginning of a transition towards new structures and new trends in the commercial sector.

In particular, the research aims to develop the potential role of the “commercial districts” in this transition, promoted as “innovative territorial enhancement methods to promote commerce as an effective aggregation factor capable of activating economic, social and cultural dynamics”.

Two distinct types of District have been defined:

- Urban Trade Districts are established on the territory of a single municipality or part of it;

- Diffuse Districts of Inter-Municipal Relevance are established/settled on the territory of several municipalities.

The mission of the districts is to stimulate and innovate urban commerce, thereby fostering a balance between the various commercial formats. Attractiveness and competitiveness are supported by a unitary direction that, through public-private partnerships, municipalities, enterprises and other local stakeholders, promotes the development of cities and territories, thanks to the pursuit of a shared strategic and investment vision.

It is therefore recommended that commercial districts be tasked with interpreting the two extremes a demand (post Covid) that presents a distinct privileged adherence between the two formulas of the Urban Trade Districts and the Diffuse Districts of Inter-Municipal Relevance:

- a redefinition of commerce in urban areas, based on an emerging focus on the theme of proximity (the obvious reference is to the debate on the 15-Minute City) and on responding to the dynamics of commercial organisation and shopping, increasingly characterised by the digital transition;

- a restructuring of the network of commercial services in inland/low-density areas, identifying on the one hand the synergies of neighborhood establishments with the network of citizenship services, and on the other hand the opportunities for complementarity between the (profitable) retail parks established urban and metropolitan areas and the fragile commercial network of inner areas.

Keywords:

post-pandemic crisis; commercial districts; collaborative governance;

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T_04 GOVERNANCE (B) / 1646

Market-Embedded Collaborative Rural Governance: Three Cases of Village Operations in Hangzhou, China

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Since the onset of the 21st century, China's rural revitalization has been predominantly driven by governmental initiatives and fiscal investments, resulting in substantial enhancements to rural living environments and infrastructure development. However, post-construction phases reveal persistent challenges in long-term operations and maintenance, posing sustainability concerns when relying solely on public funding. This predicament necessitates urgent exploration of enduring mechanisms for sustainable village development. Emerging practices in China's economically advanced rural regions demonstrate innovative approaches through market-oriented village operations, representing a proactive response to sustained rural development demands. The integration of market mechanisms into rural governance remains a contentious subject in academic discourse, raising critical questions: Can market-driven operational models genuinely enhance the sustainable supply of villages? What governance frameworks can balance commercial viability with equitable benefit-sharing among stakeholders?

This study examines three representative cases of market-embedded village operations within Hangzhou's metropolitan periphery. Through comparative analysis of operational paradigms, the study elucidates both convergent strategies and divergent approaches, with particular focus on post-market-integration governance mechanisms. The findings aim to inform policy formulation for sustainable rural governance models incorporating market elements.

The study employs a mixed-methods approach drawing from: Two-phase field investigations conducted in July 2023 and August 2024; Triangulated data collection through government archives, digital media analysis, and non-participant observation; Semi-structured interviews with key stakeholders.

The study reveals two principal insights: Market-embedded village operations constitute a pivotal mechanism for rural resource valorization. Strategic intermediation by market entities establishes vital connectivity between village resource endowments and urban market systems. Sustainable market-embedded operations require a collaborative governance, manifested through three relational dimensions. Firstly, market entities must leverage collective mobilization capacity of village organizations to achieve endogenous resource consolidation. Secondly, the institutionalization of benefit-sharing mechanisms among market entities, village collectives, and residents—evolving beyond transactional reciprocity to form resilient developmental collectives—constitutes the institutional bedrock enabling stable village operations and advancing sustainable development trajectories. Thirdly, the ingress of market entities into village ecosystems remains contingent upon governmental proactive institutional guidance and incentive structuring, while the substantive implementation of rural operational initiatives necessitates systemic safeguarding of operational ecosystems and factor markets through comprehensive policy underwriting.

Keywords:

Market embedding; Rural governance; Collaborative governance; Village operations

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Exploring the Spontaneous Utilization of Industrial Land in Development Zones from an Informality Perspective: A Case Study of the Jincheng Development Zone in Shanxi, China

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In the context of China's rapid economic growth and industrial restructuring, enterprises in midwestern development zones are under considerable operational pressure. Following the influx of a large migrant population, these zones have witnessed increasingly diverse consumer and recreational demands. Consequently, certain industrial sites have been spontaneously converted by property owners to commercial uses to accommodate leisure and consumption needs. Adopting an "informal" research perspective, this paper focuses on this phenomenon by examining the spontaneous renewal of industrial spaces, with the aim of investigating the processes and impacts of such transitions, as well as how planning can balance community aspirations and governmental economic objectives.

To this end, this study selects the Jincheng Development Zone in Shanxi Province, China, as a case example. We examine how large-scale shutdowns of traditional local industrial enterprises have led to the spontaneous repurposing of factory buildings into restaurants, karaoke lounges, automotive repair shops, and sports facilities. Through an analysis of the causes and contexts behind these "informal industrial spaces," we propose a formation mechanism framework that integrates both bottom-up and top-down perspectives across political, social, and market dimensions. The findings reveal: (1) China's current critical phase of industrial transformation is beset by unresolved planning issues at economic and policy levels, leaving existing land-use planning regulations ill-equipped to regulate such informal spaces; (2) the inadequate provision of living and consumption functions within development zones partly drives the conversion of industrial lands to commercial uses; and (3) these developments highlight the dual contradiction between rapid industrialization and existing planning protocols, as well as between local planning efforts and the diverse needs of the populace.

In light of these insights, this paper advocates moving beyond the traditional approach of merely labeling these sites as "inefficient industrial land." Instead, it calls for an informal perspective that balances both human-centered and production-centered considerations.

Moreover, this study innovatively introduces "place vitality" and "public service attributes" as key evaluative factors—where the former provides empirical support for spatial repurposing, and the latter confers a degree of moral responsibility to the use of informal industrial spaces. Accordingly, we classify spontaneously converted informal industrial spaces into four types based on their levels of place vitality and public service attributes, and propose a suite of planning and management strategies tailored to each type.

Ultimately, this paper seeks to reflect upon the tensions between formal planning systems and public demands, advocating for the integration of community-driven, spontaneous renewal efforts into planning processes as a means of realizing spatial inclusivity and justice.

Keywords:

informality perspective; reflexive urban governance; inclusiveness; industrial land conversion

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Resilient Transformation spaces: Changing tendencies of planning cultures with a focus on governance in transformation

spaces

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Abstract:

Patterns and processes of resilience and vulnerability are playing out in a complex setting of political, socioeconomical and cultural aspects, set on differing time scales and spaces (Gotham and Campanella, 2011). Large-scale traumas or crises like Hurricane Katrina or unprecedented flooding of river valleys like the flood of the Ahr valley in Germany in July 2021 have far-reaching effects on social structures, political decisions, planning cultures and economic situation both within the regions affected as well as further afield.

It is thusly within reason to question, if and how spaces that have been affected by such trauma are feasible as experimental spaces for socioeconomical transformation. Pallagst (2021) defines planning cultures as integral part of national planning systems, thus providing the basis for the hypothesis, that in light of transformational changes, crisis-impacted spaces are fertile ground for comparative research into planning cultures and their evolution when facing crisis shocks. By comparing planning cultures between different regions, changes to cultures in light of crisis impact can be made apparent and innovation in planning practices can be made visible.

This submission is part of a project on comparative research of governance-arrangements in different planning cultures within chosen regions impacted by comparable crises. In this case the flood of the River Ahr in Rhineland-Palatinate in July of 2021 gave motion to the idea of comparing planning cultures across borders, for which the pairing of the river basin of the river Dee in Scotland has been chosen, who itself also was impacted by strong floods in the recent past. By comparing two differing planning cultures impacted by the same crisis, we can gain insight into development paths and evolution of governance-structuring pertaining spatial planning in water-shaped rural middle-mountain regions in Germany as well as abroad, both in the structure and potential for optimization of governance-structures as well as in ways of flood monitoring and prevention with a focus placed on the SUDS-System (D'Arcy, 2013).

By analyzing transformation pathways and governance-structures, we can gain insight into how to build and shape more efficient and resilient planning structures for transformation spaces, especially in light of climate change and future insecurities.

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T_04 GOVERNANCE (B) / 1888

Crossing boundaries and enabling the conversion of military land into social housing. The case of Spain

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This study examines the complex challenges inherent in the public-public partnership established in 2023 between SEPES—the Public Land Entity under the Spanish Ministry of Transport, Mobility, and Urban Agenda (MITMA)—and the Ministry of Defence (MoD). The primary objective of this partnership is to repurpose decommissioned military sites for social housing, thereby fostering socially equitable urban regeneration. The initiative encompasses the redevelopment of 8.25 million square meters across 50 MoD-owned assets, facilitating the construction of 19,876 affordable housing units in 34 municipalities within 15 of Spain's 17 Autonomous Communities, with an estimated public investment of €620 million (MITMA, 2023). This project aligns with the broader state-led “Affordable Rental Housing Plan,” which seeks to utilize public land for social housing development, ensuring equitable access to adequate housing as enshrined in the Spanish Constitution. The implementation of this specific public-public partnership entails the transfer of MoD land to SEPES, which is responsible for enabling participatory and inclusive land readjustment while integrating private-sector stakeholders into the redevelopment process.

The central hypothesis of this research is that this innovative collaboration between public entities can reconcile the longstanding tension between the MoD's short-term financial imperative to divest land for revenue generation and the long-term urban and social needs of local communities. Furthermore, this partnership has the potential to navigate the complex process of converting former military sites into civilian uses—a transformation typically fraught with architectural, environmental, legal, financial, and urban planning challenges, particularly in the aftermath of post-2007-08 urban austerity policies. A comparative analysis of two case studies—Madrid's Campamento barracks (a site ready for development) and Valladolid's La Rubia barracks (a site not yet development-ready)—provides empirical insight into the challenges and opportunities associated with the implementation of this public-public partnership in large-scale urban regeneration projects.

The comparison discusses about the wider operation across Spain, in particular it focuses on the broad range of governance arrangements framing planning and enabling transition from the military use to social housing to face the increasing social and economic inequalities. The transformation of these barracks would necessitate enabling specific institutional aspects of planning governance (i.e. the rules, laws, and procedural requirements), as well as the possibilities opened by community practices and actors (co-)operating within these structural settings. This work also discuss how these practices might lead to generative conflicts, institutional learning, and enhanced reflexivity. In fact, the conversion of military land would mean a significant economic investment, which some administrations are reluctant to undertake, particularly in light of existing housing plans within communities such as Castilla y León (La Rubia barracks). These plans are aimed at providing affordable rents for vulnerable populations, in accordance with budgetary allocations that facilitate the progressive acquisition of assets, along with their subsequent rehabilitation and integration into the regional housing stock. In this case, and so far, the criticisms have not been more evident, something that may be due to the fact that, in principle, it will be the Spanish Government itself that will be responsible for purchasing the land from the Ministry of Defence (Campamento barracks). Nevertheless, there are still some reservations as to whether the central government will also be responsible for the building of these social housing units or whether, once again, it will transfer this responsibility to the autonomous communities and local authorities.

Keywords:

Public policies; urban regeneration; public-owned land; policy coordination; housing crisis

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T_04 GOVERNANCE (B) / 698

Community infrastructure in regional Australia: the impact of community hubs and recreational facilities on social connection, place attachment, and resilience

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This research explores the role and social value of community infrastructure (McShane, 2006; McShane & Coffey, 2022) in regional Victoria, Australia in fostering social connections and place attachment, enhancing community resilience, and promoting psychological well-being. While facilities such as community hubs and recreational facilities serve as vital hubs for social cohesion, their governance models significantly shape their accessibility, inclusivity, and purpose. Urban planners must critically evaluate these spaces beyond their role as public facilities, acknowledging their potential to perpetuate social inequalities or foster community resilience depending on their ownership and operational frameworks. This exploration highlights the need for nuanced planning approaches to balance community needs with governance complexities. It compares community infrastructure facilities operated by not-for-profit organisations, developers, and councils in Torquay and Armstrong Creek in Geelong, with the view for potential expansion to other locations and types of infrastructure.

The study has two main viewpoints: assessing the effectiveness of specific community infrastructure facilities in building social connections among community members and exploring whether social connection was considered as an outcome in the planning and design of these facilities. The research examines facilities delivered by not-for-profit organisations, developers, and a local government. It begins with community recreational facilities in Torquay operated by a not-for-profit model operated by Royal Automobile Club of Victoria (RACV), then compares it with a developer built and operated community centre in Armstrong Creek built by Villawood Properties using a body corporate model, and a council model in the same local government area of City of Greater Geelong. The findings could inform government policy on community infrastructure in growth areas and regional contexts.

The research employs case study methods involving context analysis of the facilities to understand their design and context, semi-structured interviews with community members who use the facilities, and interviews with RACV, Villawood, and council staff (architects, designers, urban planners, and community planners). The interviews explore the levels of social connection developed using the facilities and analyse the importance of these facilities in facilitating this outcome. Additionally, the research analyses the different business models and considerations used by the various community infrastructure providers and explores whether social connection was an explicit outcome in the planning and design of the facilities, considering any implications for policy to improve outcomes.

This research investigates the relationship between community infrastructure, social connection, psychological well-being, and resilience, offering evidence-based recommendations for policymakers and planners. It emphasises the importance of social outcomes in designing and planning such facilities, advocating for investment to strengthen social cohesion and resilience across regional, urban, and growth areas. The comparative approach provides valuable insights into the effectiveness of various strategies, with potential applications in diverse geographic contexts, including urban transformation settings. Additionally, the study highlights the critical role of governance and operational frameworks in ensuring equitable access and inclusivity in community infrastructure.

This study, therefore, not only highlights the significance of community infrastructure in regional Australia but also provides a framework adaptable to other regions and countries, contributing to global discussions on urban planning and community development.

Keywords:

Community infrastructure; social connection; place attachment; third places; semi-public spaces

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T_04 GOVERNANCE (B) / 1371

Participatory Design Processes and Actors in Public Space Case of Buyukada Fayton Square

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Public space is a symbol of democracy. For this reason, it is important to seek democratic methods in the design of public spaces. In this study “Public Participation” essentially means allowing people to be involved in the planning and development of the city, shaping their urban environment, and having the opportunity to be involved in anything and everything that is happening in that space (Kutluca et al., 2022). Participatory design methodologically represents democracy and user involvement in design (Shabab et al., 2018). This concept emerged in the early 1970s with the “aim of removing the barrier between the designer and the user (Kızılkın & Türkyılmaz, 2020).” The main idea is to create an environment which is more livable, economical, and supply-demand relationship by providing a contribution of users besides the architect or designer (Uzer, 2017). Simpson (2015) and Spark (2019) argue that in this context, not only the individual but also civil society organizations, local governments and businesses should contribute to the creation of space in the field of decision making and implementation process. In this pluralistic participation model, the processes summarized as top-down or bottom-up are possible on a plane where actors ranging from municipalities and administrative units to urban activists and neighborhood organizations come together. In this context, design and planning studies serve as a tool that enables different actors to come together.

Büyükkada Fayton Square presents an example of a participatory process in which different actors in public space are involved in the decision-making mechanism at both planning and design stages. Initiated by the Istanbul Metropolitan Municipality in 2019, the Büyükkada Conservation-Oriented Master Plan began with the Islands Transportation Workshop. While planning studies were ongoing, a decision to halt fayton activities was adopted in December 2019. Starting from July 2020, electric vehicles replaced faytons for transportation on the island. In 2021, before the planning studies were finalized, the stop area previously used as a waiting point for faytons was opened to competition under the name Büyükkada Fayton Square Urban Design Competition, shaped by participatory processes with the guidance of a Strategy Document. In this case, participants were included in the process from the preparation stage of the competition brief through focus group discussions, surveys, and thematic meetings. The participatory process continued after project submissions, with finalists revising their projects based on feedback from both the jury and the public. Instead of voting, ideas were exchanged through discussion platforms. While the winning project was delayed due to the pending conservation plan for the Adalar district until 2023, it received approval from the conservation board in June 2024.

The Büyükkada Fayton Square Competition stands out from other urban design competitions in Turkey due to its process and method definition. Re-evaluating the outcomes of this project, which prioritizes the practice of democratization in public spaces, from the perspectives of its stakeholders can contribute to determining participatory tools in future planning and urban design processes.

This paper aims to methodologically classify the roles and inputs of various stakeholders—such as civil society, local residents, the municipality, and designers—in the participatory process of Büyükkada Fayton Square. This classification relies on primary materials such as jury reports and video recordings of online public meetings held during the process. Additionally, face-to-face interviews are conducted to supplement and deepen the analysis. This paper identifies which actors and which participation tools influenced the decision-making mechanisms in the process from planning to implementation, and draws attention to the differentiated form of public participation that began as provocative actions in the context of exercising the people's democratic rights in the example of Büyükkada Fayton Square.

Keywords:

participatory design; democratization of public space; urban design competition

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T_04 GOVERNANCE (B) / 1436

Who will plan for “ageing in place”? Governance of affordable housing for a growing senior population in Switzerland

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The growing percentage of seniors as a demographic trend presents significant societal challenges, impacting various aspects of urban life, including housing policy and spatial development (Huang, 2015). On one hand, changing housing needs—such as accessibility features, smaller units, and affordability—demand housing redevelopment (Luciano et al., 2020). On the other hand, there is an increasing mismatch between the rising demand for elderly care and society’s limited capacity to provide it, creating a widening care gap, particularly for low- and middle-income groups (Black, 2020). As the demand for barrier-free, smaller, and more affordable housing units rises, municipalities need to navigate the challenge at the intersection of land policy, social policy, and housing provision to support “ageing in place” (Lowies & Lushington, 2024). Despite the policy emphasis on enabling older adults to remain in their homes and communities, affordable housing for seniors remains an overlooked yet pressing governance issue in rapidly ageing societies, including Switzerland (Schwiter et al., 2018).

This paper examines how municipal, cooperative, and private actors respond to the growing demand for age-appropriate housing arrangements given the institutional context of land policy, social policy, and business interests in the growing elder care sector. Through a multiple case study of five housing projects in the Canton of Bern, I explore the governance of age-appropriate housing provision. The highly decentralized housing, land, and ageing policies in Swiss context provide a rich empirical context for different spatial, social, and economic interests involved in “ageing in place”. Findings suggest that housing cooperatives deploy distinct strategies to integrate housing and care, yet face challenges in affordability, accessibility, and long-term sustainability. Municipal priorities, particularly in efficiency in land allocation and keeping a balanced age composition of residents, significantly shape the extent to which senior housing is developed and how responsibilities for care are negotiated among public, private, and cooperative actors.

By situating age-appropriate housing within broader municipal planning and urban governance debates, this paper raises critical questions about who is responsible for planning and financing housing for changing demographics and how different governance arrangements either enable or constrain the capacity to ensure long-term affordability and care provision to mitigate the growing care gaps, particularly in cities. The study contributes to discussions on municipal planning, cooperative housing models, and the governance of ageing in cities, offering insights into the evolving role of local governments and community-based initiatives in mitigating the housing and care crisis beyond ageing communities.

Keywords:

housing cooperatives; ageing in place; care crisis; land policy

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T_04 GOVERNANCE (B) / 1366

Identifying Barriers to Compact Urban Growth in the Irish Housing Sector: Insights from Industry Experts

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Low-rise, low-density housing dominates Ireland's housing sector, even as growing housing demand and ambitious carbon reduction targets necessitate a shift toward sustainable development. Compact urban growth (CUG) has emerged as a critical strategy to address these challenges, offering transformative environmental, social, and economic benefits. Promoted in key policies such as the National Planning Framework, CUG aims to reduce emissions, enhance urban vibrancy, and optimise land use. However, low-density development persists, contradicting these policy objectives. This paper will investigate this contradiction, exploring the barriers to the adoption of CUG in Ireland. It gathers insights from housing industry experts to highlight the disconnect between policy intentions and actual housing delivery.

The study adopts a qualitative approach, conducting semi-structured interviews with housing experts, including developers, architects, and housing bodies, to identify barriers hindering the adoption of compact urban growth (CUG) in Ireland. These interviews focused on key themes such as the viability of housing typologies, the role of embodied carbon in housing design, and the future trajectory of housing development in Ireland.

The research identifies barriers, such as market preferences for low-density housing driven by consumer demand and limited awareness of alternatives, regulatory constraints, and spatial requirements that challenge higher-density developments. Additionally, car-centric planning practices within local authorities exacerbate the issue. Together, these factors perpetuate high-carbon, low-density development, underscoring a critical misalignment between national policies and actual housing delivery.

This study provides essential insights into these obstacles and offers a foundation for developing actionable pathways to align housing practices with policy objectives. The findings are crucial for advancing sustainable urban development, achieving Ireland's housing and carbon reduction goals, and offering lessons for other nations navigating similar transitions.

Keywords:

Compact Urban Growth; Sustainable Housing; Regulatory Barriers; Embodied Carbon

T_04 GOVERNANCE (B) / 622**Transit Fragmentation as a Governance Challenge: Comparing Formal & Informal Institutions Facilitating or Hindering Cross-Agency Transit Coordination in the US & Europe.****Author:** David Weinreich¹**Co-author:** Håvard Haarstad ¹¹ *University of Bergen***Corresponding Authors:** havard.haarstad@uib.no, david.weinreich@uib.no

Longstanding institutional fragmentation of public transport services leads to service gaps, poor coordination and discourages ridership. The current conversations about service adaptation are shining a light on long-standing transport institutional challenges like fragmentation, inconsistent fare structures & financing and lack of coverage. In many cities, there are multiple operators, private and public, multiple cities, counties, tendering agreements and funding systems in place. Governance shapes the frequency of transfers and their difficulty, affecting ridership (Miller et al., 2005; Walker, 2012). This includes the existence and ease of cross-operator ticketing (Buehler et al., 2017), schedule coordination, terminal and app sharing, and data coordination (Rivasplata, 2012).

This paper examines cases in Europe and the US chosen to represent different transit governance models, and conducts in-depth qualitative interview and document analysis to identify how the level of government at which public transport is funded impacts transit agencies' ability to coordinate services. This paper looks at two metro regions in Europe and two in the US, with one region on each continent being locally governed & funded and one region governed and funded at a higher level of government (e.g. regional, federal state, or national). For each case, we interview agency CEOs or staff responsible for service planning to understand how their funding and governance structure help or hinder their ability to coordinate services.

We also examine a combination of annual reports, policy documents, tax collection information, fare policies and interagency agreements/ MOUs, in order to understand the link between governance and service outcomes like coverage and trip time to work. The interviews highlight the challenges of integrating services under each governance model, focusing especially on the degree of local autonomy in decision making. We focus in particular on how funding sources supporting public transport affect interagency agreements; coordination of tickets, schedules and routes. This work adds detail to the literature of transport governance, building off of previous literature documenting the range of regional transport governing structures (Weinreich & Skuzinski, 2021), measuring levels of fragmentation (Skuzinski et al., 2022 & 2023), and studying how governing structures developed over time (Weinreich & Bonakdar, 2020).

Findings focus on the role of higher levels of government in helping support services (or hinder them), the power that local transit agencies have to improve service or barriers to doing this, and formal or informal institutions local transit agencies have created to coordinate services independent of higher levels of government.

Keywords:

Transportation, Fragmentation, Governance, Collaboration, Institutional Adaptation

References:

Transportation, Fragmentation, Governance, Collaboration, Institutional Adaptation

T_04 GOVERNANCE (B) / 509**Governance for Bioeconomy Planning across Territorial Boundaries****Author:** Jon Paul Faulkner¹**Co-authors:** Enda Murphy²; Mark Scott²¹ *University College Dublin Ireland*² *University College Dublin***Corresponding Authors:** jon.faulkner@ucd.ie, enda.murphy@ucd.ie, mark.scott@ucd.ie

This paper explores governance frameworks and transferable policy innovations within the European bioeconomy planning context, drawing insights from Germany, France, and Belgium to address planning challenges for developing the bioeconomy in counties with slow development such as Ireland. It situates the bioeconomy as a transformative regional planning concept requiring multi-level governance, transboundary collaboration, and inclusive institutional mechanisms to foster sustainability and regional equity. Key governance dimensions are identified, including multi-level coordination, participatory governance, and reflexive science-policy interfaces. German innovations, such as the National Research Strategy Bioeconomy 2030, highlight the importance of balanced funding models that combine long-term institutional stability with adaptive project-specific investments. France's participatory frameworks and Belgium's cluster-based initiatives further emphasise the need for inclusive stakeholder engagement and regional adaptability. These approaches inform the potential for regions to develop Bioeconomy Hubs, fostering cross-sectoral innovation clusters and living labs as platforms for localised experimentation. The paper focuses on critical themes such as equitable resource management, socio-economic inclusivity, and environmental sustainability in regional planning. France's cascading biomass use principle and Belgium's circular economy integration offer replicable models to harmonise regional planning for economic development in coordination with ecological preservation. Regional planning systems, in Ireland as elsewhere, must incorporate bioeconomy governance frameworks to address land-use conflicts, support small enterprises, and ensure robust public-private partnerships to drive innovation while mitigating socio-environmental trade-offs. By aligning with EU priorities, leveraging transnational collaborations, and embedding reflexive and participatory governance practices, regional planning can create a bioeconomy that transcends traditional administrative silos and territorial boundaries. This study demonstrates how the interplay of institutions, actors, and ideas can enable transformative governance to better position regions with slower development as leaders in sustainable bioeconomic planning, providing valuable insights for planning disciplines worldwide.

T_04 GOVERNANCE (B) / 296**Productive Cities Down Under?: The contested governance of industrial land and the challenge of planning for urban industry in Australia****Author:** Carl Grodach¹**Co-authors:** Joe Hurley²; Liz Taylor¹¹ *Monash University*

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In this research we explore how urban planners negotiate and respond to changing industry and land use governance contexts. We seek to better understand if and how planning systems adapt in response to emerging and ongoing urban challenges. Our focus is on urban industrial land use planning and the role of planners in shaping productive city futures oriented toward reintegrating manufacturing into the city (European Commission 2020).

Pandemic-era supply chain disruptions, climate threats, and geopolitical insecurity have engendered massive federal investments in reshoring manufacturing and growing local production across the globe through programs such as the European Commission's Green Deal Industrial Plan and the Australian Government's A Future Made in Australia (Middleton 2024). Yet in cities with competitive land markets, the rezoning and redevelopment of industrial areas to other uses has dramatically reduced industrial land supply and created hyper-competitive industrial property markets that threaten these investments (Ferm, 2023; Grodach, 2022). There is growing interest in promoting advanced, digitized manufacturing integrated in cities, yet this often overshadows the ongoing need for basic industrial services that enable cities to function. Moreover, industrial firms increasingly defy traditional categories, blurring the line between production and service functions. All of these factors complicate traditional industrial land use separation and containment strategies.

In this context, we focus on how planners in Australia's three largest cities- Brisbane, Melbourne, and Sydney- implement policy narratives and ideas around industrial land and activity. We examine the ways in which planning professionals conceptualize and manage changing industry, how they imagine and plan for the needs of current and future industrial land, and explore practitioner narratives on industrial land protection, innovation, and transition. We then contrast this to industrial firm experiences with the planning system. We focus in particular on smaller, low impact firms that may be integrated into urban areas under productive city mandates to understand how they navigate contemporary industrial governance settings, planning imaginaries and regulatory contexts. The analysis reveals a variety of often competing ideas within and between local and regional governments and between planners and firms around the nature of industrial land. Findings highlight the tensions and challenges of implementing productive city mandates due to governance frameworks and regulatory processes, enterprise needs, and property market realities.

Keywords:

governance; industrial land; land use regulation; manufacturing; planners; zoning

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Co-Creating Just Energy Transitions with Vulnerable Communities: Lessons from Local and Regional Energy and Regeneration Policies

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The success of energy transitions depends not only on technological advancements and funding mechanisms but also on the ability of local and regional policies to effectively engage communities. Just energy transition requires special attention to disadvantaged communities' needs and capacities for transformation.

Despite increasing policy attention, marginalised neighbourhoods often face systemic barriers to participation, limiting their influence on decision-making and access to the benefits of energy and revitalisation initiatives. This paper examines how urban governance, stakeholder engagement strategies, and funding frameworks can foster more inclusive transitions by empowering underrepresented communities.

Using an in-depth case study of Wroclaw (a city which, on one hand, struggles with immense pollution and has an aspiration to achieve carbon neutrality by 2030 as one of the EU's Mission Cities, on the other), supplemented by insights from other European cities, this research explores different practices of community participation in energy transition and urban regeneration. It focuses on how local governments, civil society, and private actors co-develop solutions with residents in socio-economically disadvantaged neighbourhoods. The study employs a qualitative comparative approach, combining policy analysis, interviews with key stakeholders (municipal authorities, NGOs, and community groups), and spatial mapping of neighbourhood transformation.

Findings reveal that while multiple funding streams support energy and revitalisation projects, they often fail to reach those most in need due to bureaucratic complexities, lack of community awareness, and insufficient participatory mechanisms. The paper argues for a governance model that prioritises inclusive co-creation, knowledge transfer, and long-term stakeholder collaboration. Building on theories of energy justice (Jenkins et al., 2016), participatory urban governance (Healey, 1998), and social innovation in sustainability transitions (Avelino et al., 2019), the study proposes a framework for strengthening multi-level governance and grassroots involvement in policy implementation.

The research contributes to the discourse on inclusive urban transitions by highlighting best practices and challenges from European cities. It offers policy recommendations to enhance the role of disadvantaged communities in shaping local and regional sustainability agendas.

Keywords:

community engagement; inclusive governance; just energy transition; regeneration policies

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T_04 GOVERNANCE (B) / 1328**Understanding governance as a dynamic local response: England's Civil Society Organisations in the changing landscape of urban governance****Author:** Hyunji Cho¹**Co-authors:** Elisabeta Ilie²; Lucy Natarajan²¹ *Trinity College Dublin*² *University College London***Corresponding Authors:** e.ilie@ucl.ac.uk, hcho@tcd.ie, lucy.natarajan@ucl.ac.uk

This paper examines the role of civil society organisations (CSOs) within the shifting landscape of England's urban governance amid political and economic upheavals. Focusing on the interplay between 'urban crises' and 'local practices', the study investigates how CSOs navigate challenges posed by neoliberal policies, austerity measures, and the COVID-19 pandemic. Drawing on qualitative data from 65 CSOs, it explores how these organisations bridge gaps between centralised priorities and grassroots needs through locally-driven initiatives, social learning processes, and solidarity-making efforts. Contrary to perceptions of CSOs as passive recipients of government funding, the findings reveal their role as proactive intermediaries bridging policy frameworks and community realities. CSOs tackle systemic pressures such as social isolation, economic inequality, and declining civic engagement, particularly among marginalised groups like youth and low-income populations. By leveraging local knowledge, they advocate for inclusive and community-centred responses, challenge structural inequalities, and adapt to the constraints of austerity urbanism. This research emphasises the importance of recognising CSOs' critical role in reshaping governance models and planning practices to reflect local contexts. It contributes to urban governance discourse by highlighting the adaptability and agency of CSOs in addressing socio-political challenges and advancing democratic planning.

T_04 GOVERNANCE (B) / 843**Housing cultural futures: The role of Norwegian 'kulturhus' in local urban development and planning****Author:** Diana Huynh¹**Co-author:** Even Smith Wergeland²¹ *Norwegian University of Life Sciences, Faculty of Landscape and Society*² *Oslo School of Architecture and Design***Corresponding Authors:** even.smith.wergeland@aho.no, diana.huynh@nmbu.no

In Norway, there are currently more than 130 operational culture houses, so-called 'kulturhus'. Historically, these have served a range of purposes, providing important infrastructure for cultural activities and other community services. The early 2000s marked a proliferation in the demand to plan and construct new culture houses across the country, fueled by a conviction that tailor-made buildings are indispensable in the provision of cultural services and experiences. This is evident in the public expenditure, which show that billions NOK were allocated in the first decades of this century.

Yet, how important are culture houses today, when citizens increasingly turn to digital culture to satisfy their appetite for arts and entertainment? What purpose do they serve

and for whom? And what motivated local governments to build them to begin with? Over the past decades, it is obvious that there has been a growing interest in how culture, and subsequently the buildings that host cultural activities, play a significant role in local and regional development, often following theories and practices emerging from Bilbao's reverberating Guggenheim effect. While these cultural centres - many envisioned as regional landmarks - have been planned across the country, trends show that small and medium-sized cities are experiencing population decline and growth stagnation. Indeed, much points to the fact that Norwegian municipalities face an increasingly challenging set of development issues. In addition to imbalanced demographics, most municipalities grapple with vulnerable post-pandemic economies, coupled with the demands of climate change adaptation and mitigation, as well as an increasingly unpredictable geopolitical order. Most places would be hard-pressed to manage high operating costs linked to cultural centres on top of these governance tasks. To this end, the paper argues that, for better or worse, perhaps these culture houses serve as stand-in for those that govern us.

The paper seeks nevertheless to also extend the scholarship on Norwegian 'kulturhus' by investigating how they are used and managed within the context of cultural policies and economic realities. While the focus is on the Norwegian context, both Nordic and European outlooks are given comparative attention. Given current pressure placed on public expenditure, the culture house of the future has probably already been built — how can, and in what ways should it, stay relevant?

Keywords:

urban culture; inclusion; governance; degrowth

T_04 GOVERNANCE (B) / 1788

Collaborative Governance of Public Urban Gardening: Theoretical and Methodological Insights from Greater Sydney

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This study examines the governance dynamics of community-based street greening initiatives in Greater Sydney, Australia, focusing on the interactions between local governments and citizens in transforming public spaces into small-scale gardens. These urban gardening efforts, occurring in nature strips, verges, and footpaths, are often informal, community-driven projects that require innovative governance approaches to balance the needs of both public authorities and residents. The study explores the policy frameworks employed by local governments to regulate public urban gardening and investigates the day-to-day decision-making processes of policy officers and community members.

To investigate the complex dynamics between formal policy and informal, community-driven action, a novel, interdisciplinary governance framework has been developed, drawing on policy studies and systems theories. A qualitative analysis of policy documents across all thirty-three local governments in Greater Sydney reveals a broad spectrum of policy approaches—from restrictive measures to proactive support for public gardening initiatives. Interviews with council staff and community participants uncover the governance practices surrounding these initiatives, focusing on how policy

decisions are implemented at the street level. By employing a participatory systems approach, the research highlights the diverse perspectives and values that shape policy outcomes, particularly in relation to risk management, biodiversity, and community benefits.

The study contributes to the discourse on governance by offering insights into how participatory and flexible governance models can enable adaptive urban planning processes. The findings are relevant for policymakers seeking to foster collaborative, community-led urban solutions that address pressing challenges such as climate adaptation, social cohesion, and environmental sustainability.

Keywords:

systems thinking, community-led, nature-based solutions, collaborative governance, participatory methods

T_04 GOVERNANCE (B) / 219

Shaping Age-Friendly Communities: Towards More Inclusive Participation of Older Adults in Neighbourhood Planning

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Population ageing is one of the major challenges facing cities today. As life expectancy continues to rise faster than healthy life expectancy, it poses challenges for the built environment in supporting older adults' lives. Driven by the growing importance of social ecological and gerontological theories on how the environments significantly influence older adults' health, mobility, and social engagement—and considering the challenges faced by this demographic—several strategies and policies, particularly the World Health Organisation's Age-Friendly Cities and Communities (WHO AFCCs) initiative, have been implemented to address the specific needs of older adults (Lawton and Nahemow, 1973; Lui et al., 2009).

The AFCCs initiative has generated a global response, raising awareness among planners of the potential for involving older adults in urban planning and community regeneration strategies (Buffel et al., 2014). While the physical environment and outdoor spaces are recognised as core areas in the AFCCs' eight dimensions, much of the relevant literature appears in gerontology and health policy journals rather than urban planning and design publications, highlighting the need for further research into spatial interventions (Salmistu and Kotval, 2023).

In recent years, planning discourse has shifted significantly from a top-down approach to a more communicative style. This shift emphasises the importance of including diverse voices in planning processes to create inclusive environments for all age groups. Active participation of older adults in community planning is essential, not only to improve their quality of life but also to safeguard their rights in urban spaces and foster age-friendly environments. However, research on age-friendly community planning remains insufficient, particularly in varied local contexts (Atkins, 2019).

In the UK, Neighbourhood Planning (NP), introduced by the Localism Act 2011 as a collaborative, community-level planning initiative, offers older residents opportunities to influence local planning discussions and promote more inclusive and age-friendly outcomes. However, ensuring the meaningful inclusion of older adults in NP faces considerable challenges. These arise from demographic, individual, and community environmental factors affecting older people's social participation (Townsend, Chen and Wuthrich,

2021) and barriers inherent in the NP participation process itself (Brookfield, 2017). Despite these challenges, the factors influencing older adults' participation in NP and strategies for improvement remain underexplored.

This research aims to identify and categorise the factors that influence older adults' (aged 65 and above) participation in NP and to explore innovative and inclusive engagement approaches to encourage their involvement. It adopts a mixed-methods approach, incorporating quantitative data from surveys and qualitative data from interviews conducted at two levels: nationally across England and through a case study in Leeds.

Findings reveal how personal level factors, community level factors, and NP process-related factors influence older adults' participation. Key factors include health and age-related constraints, socio-economic conditions, attitudes towards ageing, trust in the planning system, and challenges in planning competence and coordination, etc.

Additionally, innovative strategies to encourage older adults' participation in NP are explored. These include the use of artist impressions and exhibitions to simplify planning concepts, creative outreach methods such as art projects and multilingual engagement, and trust-building activities. Community engagement officers played a pivotal role in implementing these approaches to involve marginalised groups, including older adults and culturally diverse residents.

By identifying barriers and proposing inclusive practices, this study contributes to fostering a more age-friendly planning participation process, enabling older adults to actively participate in shaping their community environments.

Keywords:

Neighbourhood planning; Participation; Age-Friendly; Older People

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Self-government processes of the urban bioregion: insights from a study on the Metropolitan City of Rome Capital

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The contribution presents partial findings from the work carried out by the authors within the ongoing PRIN (Research Project of Significant National Interest) PNRR project “Bioregional planning tools to co-design life places. Empowering local communities to manage and protect natural resources”, in particular with regard to the denotation of experiences of territorial governance that extend beyond traditional institutional planning frameworks. Grounded on the bioregional approach, the research project aims to contribute to the definition of a set of agreement tools for territorial planning, supporting collaborative forms of management and use of environmental resources by the communities that live in the territory. The agreement forms of planning identified in the project are intended as flexible frameworks for the definition, case by case, of the most suitable tools to allow the implementation of the principle of subsidiarity in the perspective of addressing local and global challenges more effectively.

The authors’ research focus is the urban bioregion of the Metropolitan City of Rome Capital, and this contribution concerns in particular the denotation and mapping of the “multiform experiences that use various tools of local action” (Dematteis, Magnaghi, 2018) observed within the study area. For this purpose, different types of experiences have been identified, ranging from semi-institutional processes of agreement planning of parts of the territory (such as river contracts) to community-led self-government of commons, offering a comprehensive picture of the forms of land management that complement conventional institutional planning.

The reconnaissance of the experiences made use of an online collaborative mapping tool, in order to allow interaction and integration between the knowledge base developed within the research project and the knowledge that can be produced by any other user. The embedding of the mapping tool within a specifically developed geosocial platform also allows for broader forms of social interaction between users, and aims to support the creation of multiple communities interested in participating in the processes and practices of land use and governance. Ultimately, the project aims to encourage the progressive formation of new institutions empowered to self-governing territorial resources.

Keywords:

Bioregion; Self-government; Territorial co-planning and co-design; Coevolution

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T_04 GOVERNANCE (O) / 1064

Learning from the social innovation-institution relationship. An ethnographic study in the Veneto Region

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Social innovation has long been hailed for its potential to tackle urgent social and economic challenges, particularly in academic and policy circles. It is seen as a means of enhancing local welfare by generating public goods and services while promoting collective empowerment. From a planning perspective, social innovation is viewed as a transformative tool capable of reshaping social relations and altering power dynamics within communities. However, critical literature has raised concerns about its overromanticisation and the rhetoric of governance-beyond-the-state, particularly regarding the notion that social innovation could justify the state's retreat from addressing systemic issues such as exclusion, deprivation, and inequality. Additionally, critiques highlight the uneven distribution of social innovation initiatives and their potential to exacerbate existing disparities.

While it is widely acknowledged that local communities alone cannot resolve entrenched societal issues, a more nuanced understanding of the relationship between social innovation and institutions - particularly in urban planning - is still lacking.

Emerging research underscores that public support is critical to the sustainability of social innovation and its ability to scale beyond micro-level interventions. **This contribution focuses on the relationship between social innovation initiatives and local institutions, exploring how both “learn” from one another to improve public action and urban planning practices.** On one hand, we investigate how civic initiatives develop competencies and awareness through their interactions with institutions. On the other hand, we explore how institutions, conceived as evolving learning bodies, gain insights through engagement with social innovation initiatives. The Veneto Region, particularly the city of Verona, serves as the field of observation for this study. This region has a long-standing tradition of faith-based civic action and a robust associative fabric. Verona shares this tradition with the wider region, but in the past ten years, the Municipality has become more directly involved in collaborative management of common goods - alongside other Italian cities. Based on a mapping of existing civic initiatives that address emerging and unmet needs, this research examines their relationship with local institutions, particularly the municipal government, and investigates the learning processes triggered by these interactions, both for the social innovation initiatives and for local institutions.

First, in-depth interviews with key local actors and policymakers reveal the spatial, social, and institutional factors shaping their relationships. For instance, the municipality's efforts toward social innovation and horizontal subsidiarity create a generative space for exchange. However, it is essential to critically assess which types of initiatives (and needs) the Municipality is capable of addressing, and to what extent it can foster processes of learning and awareness. The role of other actors, such as private foundations and universities, also emerges as critical in this dynamic. Secondly, institutional ethnography conducted within the Municipality of Verona further explores the learning process within local institutions. This analysis examines political cultures, competencies, organizational structures, methods, tools, procedures, and dynamics to identify elements that facilitate institutional learning and transformation in response to social innovation initiatives and, more broadly, evolving societal needs. Through these research activities and findings, the paper highlights the critical role of the relationship between social innovation and institutions—beyond just civic action initiatives—in addressing contemporary crises and evolving societal needs, while proposing a dynamic definition of social innovation, particularly within the context of urban planning.

This contribution is part of the broader research project RESISTING –Reconnecting Social Innovation with Institutions in Urban Planning, funded under the National Research Program of National Interest (PRIN NRRP 2022), within Italy's National Recovery and Resilience Plan. RESISTING studies three different Italian regional contexts.

Keywords:

social innovation; institutional learning; Veneto Region

T_04 GOVERNANCE (O) / 1323

Exploring the Future of Metropolitan Governance: Metropolitan Management and Regional Development in Decentralized Indonesia

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This research aims to explore appropriate metropolitan management mechanisms through the analysis of Indonesian cases. Indonesia has experienced rapid urbanization over the past few decades. Before the turn of the century, nearly 60% of Indonesia's population still lived in rural areas. However, today, the urban and rural population ratios have completely reversed. By 2023, the urban population accounted for almost 60% of the total population, and it is expected to exceed 70% by 2045. Indonesian cities are currently facing major challenges, such as creation of livable urban environment while coping with rapid urbanization and sprawling, economic development and job creation, and provision of the public and social services to meet the needs of the growing urban population.

As urbanization progresses, large metropolitan areas have emerged, making metropolitan management an important issue in Indonesia's urban sector. Due to the benefits of agglomeration economies, metropolitan areas are generally recognized as drivers of the national and regional economy. However, these areas also experience negative externalities, such as traffic congestion, pollution and environmental degradation, insufficient affordable housing, and a lack of open space. Recognizing the importance of metropolitan areas, the National Spatial Plan of 2008 defined a "metropolitan area" as an urban agglomeration with a population of over one million that is functionally integrated. Ten metropolitan areas were officially identified under this framework. Recently, metropolitan management has received renewed attention, particularly with the enactment of Law No. 2 of 2024 for the development of the Jakarta Metropolitan Area following the transfer of the national capital in Nusantara, Kalimantan. Promoting regional development depends on building systems that foster cooperation and coordination among local governments within a metropolitan area. This has sparked interest in metropolitan management and its institutional framework, especially from the perspective of regional development. Examples of ongoing initiatives include the development of a new metropolitan area integrating Nusantara, Balikpapan, and Samarinda in East Kalimantan, and the Rebana Area Development Project in West Java, which is one of the national strategic projects.

On the other hand, Indonesia has implemented a drastic decentralization policy known as the "Big Bang Decentralization" since the late 1990s. Following the enactment of Law No. 22 and Law No. 25 of 1999, significant authority was devolved to districts (regencies and cities) in areas such as economic development, spatial and infrastructure planning, environmental management, and public service provision. In 2004 and 2014, adjustments were made to clarify the division of functions and relationships between provinces, districts, and villages. This involves strengthening the role of provinces and implementing fiscal decentralization at the village level through the establishment of the Village Fund. After several modifications and the accumulation of experience, recent research has revealed that decentralization in Indonesia has contributed to the alleviation of regional disparities to some extent. However, an unintended consequence of decentralization has been the proliferation of local governments, including new districts and provinces, leading to a trend of fragmentation, often based on political interest. In essence, Indonesia's decentralization framework, while strongly empowering local governments, does not necessarily encourage cooperation between neighboring local governments.

Thus, the objective of this research is to examine metropolitan mechanisms that support intergovernmental cooperation for regional development within Indonesia's decentralized system. This is achieved through three case studies: the Jakarta

Metropolitan Area, the new national capital metropolitan area, and the Rebana Area in West Java. These case studies analyze the specific issues faced by each metropolitan area, such as public transportation systems in the Jakarta Metropolitan Area, the establishment of the new capital and its broader impacts, and regional development with a focus on industrial growth in the Rebana Area.

T_04 GOVERNANCE (O) / 792

Energy Transition and Community Engagement: The case of NSW, Australia

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Using renewable energy sources is not a new phenomenon in Australia. In 2023, 39.4% of the country's total electricity generation came from renewable energy sources with NSW the highest user of renewables in Australian states in terms of megawatts (Clean Energy Council, 2024). Using more renewable sources for energy became a priority in Australia and many other parties involved in "The Paris Agreement". Australia lodged the 43% emissions reduction target by 2030 under this Agreement in 2022 and the Climate Change Act (2022) was in force in April 2023 to make sure that Australia will reach Net Zero emission by 2025. This also coincides with the closure of various coal-fired power stations in Australia.

These large-scale renewable energy developments are usually considered State Significant Developments (SSDs). In NSW, the Minister for Planning and Public Spaces (the Minister) or their delegate is usually the consent authority for SSDs. The process of assessing these applications is complex and comprehensive and requires an Environmental Impact Statement to identify project impacts, along with extensive community consultation (McElnea & Alian, 2024). While this might be 'comprehensive', the International Association for Impact Assessment (2023) observes that "Traditional environmental impact assessment conducted at the individual project level has proven to be insufficient to deal with the bigger picture beyond project level impacts".

National and State governments have published and released various policies, frameworks, and factsheets about the impacts of these projects including what they mean for the communities affected and how they can be 'involved' in the process of decision-making. At the state level, the recent Climate Change (Net Zero Future) Act 2023 (Part 2, Section 8) specifies that: "Action to address climate change should be taken in a way that ...considers the impact on rural, regional, and remote communities in New South Wales". It should "involve appropriate consultation with affected persons, communities and stakeholders" and it should consider other matters including but not limited to the knowledge and perspectives of Aboriginal communities as well as the knowledge of rural, regional and remote communities in NSW. Amongst other things, this Act also states the need "to support local communities, including Aboriginal communities, who may be affected by the action".

This project explores a key set of tensions in relation to planning for renewable energy projects in rural New South Wales (NSW), Australia. On the one hand, these projects are responding to clear global imperatives to transition to carbon-neutral societies, along with the understanding that any further delays could prove disastrous for the planet. On the other hand, it is also clear that these projects will significantly affect host communities in a range of ways and that wide-ranging community engagement is required to ensure that negative impacts are mitigated and positive impacts enhanced. From a societal perspective, there is an imperative to act 'now' and yet, at the local scale at least, also a critical need to ensure that these projects generate beneficial and enduring outcomes for host communities, many of whom are keen to participate in and benefit from the potential renewable's 'boom'.

Drawing on the social and economic impacts of other Renewable Energy Zones (REZ) on its host communities, this project will explore the extent to which affected local towns and communities in the New England REZ have been meaningfully engaged with the

highly complex planning framework associated with this renewable mega-project, and how levels of engagement and strategic involvement can be improved.

Keywords:

Energy Transition; Community Participation; Participatory Planning; Renewable Energy

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T_04 GOVERNANCE (O) / 747

Rural Revitalization Beyond Administrative Boundaries: A Case Study of Villages Surrounding Taihu Lake, China

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Rural development, aimed at reducing the disparities between urban and rural areas, remains a significant global challenge under climate change, land conflicts, food insecurity, and environmental degradation. UN-Habitat has proposed enhancing urban-rural linkages as a means to address this issue. In China, rural revitalization has been promoted as a national strategy through enhancing the flow of development factors between urban and rural areas. This shift reflects a transition in China's policy from a "dual urban-rural system" to "urban-rural integration" leading to substantial improvements in urban-rural linkages, such as transportation, energy, internet access, technology, and talent exchange. Despite these advancements, local governments continue to face challenges due to the constraints of administrative boundaries, resulting in issues such as uneven resource distribution, limited physical and social mobility, and ineffective governance. Overcoming these limitations and fostering rural development beyond administrative boundaries are essential for achieving regional coordination and enhancing rural governance.

This study examines villages around Taihu Lake in Huzhou, China, to explore approaches that encourage coordinated development beyond the administrative boundaries in rural areas. Huzhou was designated as a national pilot zone for urban-rural integration in 2019, leading to the selection of villages in Huzhou as study sites based on several pilot studies conducted in the Yangtze River Delta. The city has actively pursued initiatives to facilitate the flow of development factors between urban and rural areas, promoting rural development through land use, population mobility, and shared infrastructure.

Using archival research, location-based data analysis, census data analysis, field visits, participatory observations, and in-depth interviews, the study focuses on the development agendas and strategies of each village, cooperative activities in economic, social, and ecological dimensions, and the interactive mechanisms between villages under the

guidance of local towns or sub-districts. The study aims to address key questions: What initiatives encourage rural development across administrative boundaries? What policies and projects support this development? What are the benefits and challenges? In this light, this research seeks to contribute to cross-boundary rural development by enriching empirical studies of exploratory practices in China. It could also provide valuable insights for regions facing similar development challenges around the world.

Keywords:

Urban-rural Linkages ; Administrative Boundaries ; Urban-rural Governance

T_04 GOVERNANCE (O) / 1762

Is the polycrisis finally leading to the privatization of risks? Evolving understandings of state responsibilities facing disasters in Italy.

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Drawing on studies by complexity theorists, sociologists, historians and political ecologists, the paper proposes a critical and evolutionary understanding (poly)crises (e.g. floods, fires, earthquakes, environmental contamination) at the intersection with socio-territorial inequalities in the global society of risk. Crises and disasters are hence critically analyzed in their socio-political and governance dimensions, considering how they are socially constructed, implying they exist only when certain actors declare and operationalize them as such. While crises are often approached as emergencies limited to specific events (disasters), our paper proposes to consider a wider time frame, looking at long-standing processes of unevenness in order to better understand punctual events. In this light, punctual events or key decisions related to disasters can become critical junctures within longer trajectories of crisis. Moreover, crises are new sources of territorialisation, both in term of actors' practices and state action. Given the (variably explicit) spatial dimension of (poly-)crises such as those related to floods, earthquakes, fires or epidemics, we propose to consider them as "territorial crises", investing multiple geographical scales and manifesting through practices of state-promoted redlining and zoning in response to emergencies. As shown by political economists and state theorists, "territorial crises" have been a privileged site for the deployment of state projects, understood as coherent templates 'within which individual agents and organs of the state can coordinate and judiciously combine (collibrate) policies and practices, and also connect diverse policies to pursue (a more or less illusory) national interest, public good, and social welfare' (Jessop 2016).

In previous studies the authors of the paper have been investigating "territorial crises" and the possibility to consider them as the site for the launch of new state projects, showing how specific actors within the state apparatus are granted extraordinary powers through the alteration of established multi-level inter-institutional arrangements, specific and evolving geographies for the implementation of state response are designated, and specific regimes of indemnisation are identified, thus defining broader rules of inclusion/exclusion. Today, the paper's authors are observing how the increasing frequency of extreme events and the growing complexity of polycrises have been exceeding the capacity of state actors to respond to them in multiple geographical contexts, from fire-ravaged Los Angeles to the repeatedly flood-hit Romagna region in Italy.

More in particular, more frequent and more damaging catastrophes are putting very intense pressure on the long-term financial sustainability of public, public-private, and private insurance systems across the globe. Such a new normal implies an increased risk of insurances insolvency and growing premiums for clients, or complete withdrawal from some territories and social groups, combined with the emergence of a “climate housing bubble” produced by the underestimation of the impact of risks on the value of properties. New socio-spatial cleavages result from these trends, confirming or re-shaping inherited geographies of risk and inequality. In Italy, where it has been the state to traditionally address post-disaster reconstruction financial needs, the more frequent pace and intensity of disasters is putting into question the sustainability of traditional forms of state intervention. In particular, the national government has recently advanced the idea of a compulsory insurance scheme for homeowners against all sorts of disasters – floods, earthquakes - to which the country is particularly prone. Such a proposal, soon withdrawn from the government, was put forward amid an unprecedented wave of floods that affected the area of Romagna, in the north-east of the country.

Based on this reasoning, and drawing from past and more contemporary cases, the paper presents a critical discussion of the evolving understandings of state responsibility facing disasters in Italy.

Keywords:

climate housing bubble; disasters; inequalities; risk insurance; territorial crises

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T_04 GOVERNANCE (O) / 1084

Values-driven development? Environmental regulation and planning for development in the UK

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The planning project has always been perceived as *values-driven* as result of the profession's claimed ability to act in the Public Interest. Ethical matters have received significant scholarly attention and are enshrined in codes of practice such as professional charters. Yet, in countries such as the UK, the *modus operandi* of planning has changed profoundly in the last decade. Research shows many planning functions are now carried out by private sector professionals, raising important ethical questions. The business of development has also changed significantly, becoming more complex and, relatedly we argue, more overtly *values-driven*. Regulation is a key driver of this shift. Developers are now required to comply with a wide range of environmental standards, many of which sit within the increasingly complex planning system. Our research with regeneration and development practitioners since 2017 has shed critical light on development professionals' relationship with these regulatory requirements and how they relate to corporate - and personal - values. For instance, many professionals are engaging in agendas such as Social Value that go above and beyond 'minimum standards'. These stories further complicate the picture around the ethics and values that lie at the heart of planning for development in the UK today.

Keywords:

Development; Regeneration; Ethics; Planning; Values

T_04 GOVERNANCE (O) / 1281

Participatory Community Planning and Collaborative Governance in the Post-Growth Era: A Case Study of the Nanning Love-U Garden Network in China

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Many cities in the world today are facing the slowdown in economic growth, the reduction in fiscal revenue, and the resulting challenges in public space governance. With the slowdown in China's economic growth, urban construction has also entered the stock regeneration era from incremental development. Community planning and community regeneration based on the built environment require the engagement of multiple local actors and the collaborative governance of multiple departments. So, how can different collaborative governance models be used to stimulate community engagement for different types of communities? How can actors play the role of catalyst and driver in community collaboration and engagement? How to optimize the mechanism of participatory community planning and collaborative governance based on the existing institutional environment? However, current research mostly stays in macro-framework design and isolated case studies, lacking networked practice and continuous observation. Therefore, it is urgent to sort out the multiple models of collaborative governance and the optimization of participatory community planning mechanisms in combination with long-term systematic spatial practice.

The "Love-U Garden" action in Nanning, China, which began in 2021, has built a rare city-level garden network. Empowered and accompanied by social organizations, it encouraged residents to build and maintain spontaneously, innovated collaborative governance mechanisms, and ultimately became a model for the regeneration and gover-

nance of urban community green spaces. This study summarizes three co-construction models of participatory community planning and governance by analyzing the civic engagement and community actions in the whole process of this practice, each of which has its own applicability. The first is the professional-led model, which mainly relies on the leading demonstration and long-term empowerment of professional institutions. It is suitable for communities with both aging infrastructure and population, weak public participation foundation, and scarce social resources. The second is the multi-party co-construction model, which mainly relies on the collaboration and co-creation of external diverse social forces. It is suitable for communities with relatively rich social resources, diverse age structure, and strong participation potential. The third is the autonomous co-financing model, which mainly relies on the endogenous force of the community and the self-driving force of residents. It is suitable for communities with a good public engagement foundation, relatively complete infrastructure, and strong community self-organization ability.

This study proposes three optimization mechanisms for collaborative governance: First, adhere to the whole process to create a co-participation mechanism, and summarize three important KOLs: opinion leader type, brick-throwing type, and serial coordination type. Second, adopt a flexible joint cooperation and co-maintenance mechanism, and propose three maintenance forms: autonomous operation and maintenance by core actors, co-maintenance by the community of actors and property assistance, and property-led with actor-assisted. The third is to promote a differentiated fund-raising mechanism, and summarize four fund-raising models: government-led, multi-party, owner-raised, and seed fund. Finally, this study puts forward the following policy recommendations: First, the professional-led model should further promote the whole process civic engagement. Second, the multi-party co-construction model should actively link the engagement of all age groups. Third, the autonomous co-funding model should encourage multi-channel fund raising, such as introducing social forces to create inclusive projects.

In the face of the transformation of the community planning paradigm in the post-growth era, this study sorted out the multiple collaborative governance models to deal with the conflicts and dilemmas generated by different stages of public participation, and proposed flexible mechanisms and countermeasures. This study has certain reference significance for the construction of urban green space network in other cities around the world, the promotion of community collaborative governance, and the promotion of sustainable community development.

Keywords:

Participatory Community Planning; Collaborative Governance; Civic Engagement, Love-U Garden

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T_04 GOVERNANCE (O) / 1126**Zero Net Land Take Policy Mapping: A Multi-Level Analysis in the Context of Italy and Emilia-Romagna****Author:** Iuliia Kozlova¹**Co-authors:** Elisa Conticelli²; Serena Sgallari³¹ *University of Bologna*² *Department of Architecture, Alma Mater Studiorum, University of Bologna*³ *Regione Emilia Romagna***Corresponding Authors:** serena.sgallari@regione.emilia-romagna.it, iuliia.kozlova2@unibo.it, elisa.conticelli@unibo.it

The Zero Net Land Take (ZNLT) policy has emerged as a cornerstone of sustainable urban planning, aiming to balance urban development with land conservation by 2050. Rooted in the EU Soil Strategy for 2030 and the Biodiversity Strategy, these policies emphasize land protection and renaturalization but allow for variability in member state implementation. This study provides a comprehensive review of ZNLT-related policies across Europe, examining their adoption and adaptation at the European, national, and regional levels, with a focus on the Emilia-Romagna region in Italy as a case study.

The research involved an in-depth analysis of legislative documents, policy frameworks, and implementation guidelines. At the European level, overarching directives outline the primary goals and strategies, while national policies translate these into localized action plans. The study revealed diverse interpretations and implementations of ZNLT across member states, reflecting differing governance structures and spatial planning traditions. In Italy, the decentralization of spatial planning contributes to heterogeneous applications of ZNLT principles, with Emilia-Romagna standing out for its pioneering efforts. The region's Regional Law No. 24/2017 exemplifies a structured approach by capping new urbanization at 3% of the existing urbanized territory by 2050 and integrating ZNLT into spatial planning through measurable targets, incentives for land reuse, and robust monitoring mechanisms.

The analysis identified critical challenges to effective ZNLT implementation, including misalignments between European objectives and national or regional practices, fragmented policy action, and the absence of standardized metrics for monitoring progress. Insufficient economic and regulatory incentives at the subnational level further impede the prioritization of ZNLT goals. Stakeholder engagement remains inconsistent, reducing inclusivity and undermining land-use decision-making processes.

This study underscores the need for a coherent multi-level governance structure to achieve ZNLT objectives across Europe. By addressing policy gaps and fostering synergies, ZNLT can serve as a transformative framework for reducing land consumption, enhancing urban resilience, and protecting ecological systems. Emilia-Romagna's model offers valuable insights into aligning regional and local actions with national and European strategies, providing a replicable framework for other regions.

Keywords:

Zero Net Land Take; policy mapping; multi-level governance; land consumption

T_04 GOVERNANCE (O) / 1046

The proposed new spatial planning law in Italy: A critical reflection on its structure, content, and objectives in times of crisis

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The paper presents a reflection on the proposed reform of the national urban planning law (Law 1150/1942), developed by the Italian National Institute of Urban Planning (INU, 2022) and titled 'Law of Fundamental Principles and General Rules for Land Governance and Planning'. This proposal is the result of a process initiated during the INU congress in 2022 to integrate contributions from the national debate, regional legislative innovations, and practical experiences gained across various territories. The proposed law seeks to provide the country with innovative general principles that serve as a shared framework for regional legislation, enabling a redefinition of land governance as a 'broad set of interacting functions'.

The fundamental principles, rooted in solid institutional collaboration, underscore: i) integrated territorial planning; ii) territorial equity and the inclusivity of urban systems; iii) public participation in planning processes; and iv) the imperative to preserve efficient territorial resources and unspoiled environmental assets for future generations. These principles embody new paradigms in planning, designed to confront contemporary climatic, environmental, social, and economic challenges.

Within this framework, the planning system is restructured using the method of interinstitutional co-planning—a collaborative and horizontal process guided by the principles of subsidiarity, adequacy, competence-based collaboration, and coherence. The planning system is divided into territorial planning and urban planning, each associated with distinct instruments. Territorial planning includes tools such as the Regional Landscape Plan (PPR), the Regional Territorial Plan (PTR), and the Metropolitan Strategic Plan (PSM). Urban planning introduces the General Urban Plan (PUG), which is already in effect and has been tested in some of the most innovative and forward-thinking regions. The PUG represents a significant innovation, fundamentally reshaping the national framework to align with the structure of planning instruments. It is arguably the most groundbreaking and experimentally challenging element, as it must integrate the contents of territorial planning tools (PPR, PTR, etc.) at the local scale. Additionally, it differentiates between structural-strategic, regulatory, and operational functions:

- The *structural-strategic function* translates the objectives and purposes of municipal land governance into terms of performance, quality, and impacts at the landscape, historical-cultural, economic, and social levels. It identifies and intervenes in both urbanized and agricultural areas, without granting building rights, but instead shaping choices and development forecasts. These are primarily focused on urban and territorial regeneration, land consumption containment, and the sustainability of urban transformations;
- The *regulatory function* pertains to areas of the territory not subject to urban transformations or complex urban regeneration. These include agricultural areas, natural spaces, and existing settlement and infrastructure systems, which are to be preserved, consolidated, and requalified through urban and building regulations. This component of the PUG assigns building rights and is implemented through direct interventions;
- The *operational function* addresses interventions and projects for complex urban and territorial regeneration, developed as an implementation of and in alignment with the structural-strategic component.

The paper, based on a critical and descriptive examination of the proposed law, aims to highlight key technical-disciplinary and conceptual issues related to its guiding principles, their implications for the redesign of the planning system and land governance, and the General Urban Plan with its tripartite function. Simultaneously, it reflects on ongoing regional experiences (e.g., Marche Regional Law No. 19 of November 30, 2023), based on the principles of the INU proposal. In doing so, it explores the 'open space of research' that lies between theoretical principles not yet in force and ongoing practical experiments.

Keywords:

Spatial planning law; development control; participation; governance; climate change;

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Track 5 | ENVIRONMENT AND CLIMATE

T_05 ENVIRONMENT AND CLIMATE (A) / 656

Geographies of Carbon Trading: Spatial Planning Approaches for Equitable Offset Projects

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Carbon trading markets aim to balance greenhouse gas emissions of the countries by channeling climate finance from developed countries to developing ones by helping them mitigate climate change impacts and promote sustainable development. Carbon offsetting was introduced by the Kyoto Protocol, later expanded through market forces and United Nations' initiatives in a multi-layered structure spanning from supranational to local levels. However, the complex, multi-dimensional and multi-stakeholder nature of the mechanism poses challenges in the operationalisation processes that have been widely criticised for failing to address local needs and exacerbating environmental and social inequalities.

This research explores the ways spatial planning can enhance the operationalisation of carbon markets through policy design, community engagement, and land use management for delivering justice to the local communities with a lens to Uganda. Over the last 20 years, Uganda has become a hotspot for carbon offset projects due to its favorable bureaucratic processes influenced by its colonial legacy, and its conducive natural environment. To provide a comprehensive understanding of the carbon trading mechanisms' operationalisation, this study employs two different methodologies: firstly, the policy frameworks on environment and land use management are examined to understand the integration of carbon market projects, along with community engagement. Second, it uses desk research and interviews to analyze two contrasting case studies: the top-down Kachung Forest Project (KFP) of the Kyoto Protocol and the participatory Trees for Global Benefits (TGB) project of the voluntary carbon market. The KFP stands as an example of centralized governance in project management through top-down approaches that come from the supranational level and demonstrates its adverse impacts including displacement, lack of community involvement, and environmental degradation. On the other hand, the TGB illustrates the potential of grassroots activities and community-centred approaches to realise effective and efficient carbon offset projects, even though there are still some challenges to reaching long-term sustainability objectives. The findings of this research show that well-designed policies, inclusive management and equitable resource distribution are essential for the carbon offset projects' success through the experiences of Uganda.

Taken the lessons from the Uganda experiences, this research aims to identify the pathways to address environmental and social inequalities occurs in the carbon trading projects by integrating spatial planning tools and emphasising participatory governance to enhance the equity and effectiveness of carbon offset initiatives to enhance justice on the global level.

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Keywords:

spatial planning; carbon trading mechanism; participatory planning; community engagement

T_05 ENVIRONMENT AND CLIMATE (A) / 91

Pursuing climate neutrality through ecosystem services: Evidence from Campania Region, Italy

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In this study, a methodological approach that aims to implement climate neutrality through spatial planning policies is defined and applied. The measure of carbon sequestration (CS) is taken as a reference to estimate the status and evolutionary dynamics of this phenomenon, analyzed and evaluated as associated with the supply of certain types of ecosystem services (ESs), in relation to the reference spatial context. The study is developed as follows. First, the spatial framework of CS is characterized through density maps, utilizing the “Carbon Storage and Sequestration” model of the InVEST suite, which estimates the amount of carbon stored in reference spatial units using raster maps of land cover (Liquete et al., 2015). The model estimates the state of CS, allowing, also, to appreciate its variation over time (Sun et al., 2019). The spatial context addressed by the implementation of the methodology is Campania, an administrative region in southern Italy.

Second, a methodology for characterizing the supply of ESs is identified. The multifunctionality of the supply of ESs can be considered as an analytical reference for the definition of a system of measures oriented to the improvement of CS capacity and, therefore, of the contribution of local spatial planning policies to the effective pursuit of global climate neutrality. Based on previous studies (Isola et al., 2022) and in-depth analyses of environmental, landscape, and socio-cultural contexts, the provision of ESs in relation to the regional territory of Campania is characterized in this study by the following types: preservation of habitat quality levels suitable for sustaining the life cycles of plants and wildlife that can be useful to humans; climate regulation through mitigation of land surface temperature; production of agricultural crops and timber; protection and enhancement of the attractiveness of spatial contexts in relation to nature- and natural resource-based recreational and cultural activities (Zulian et al., 2014); preservation and enhancement of landscape values that ground regional identity.

Finally, the correlations between the spatial taxonomies of CS capacity and ESs supply with regard to the Campania regional context are detected and analyzed, in order to assess how the characteristics and specificities of the multifunctional ESs supply can be effectively used in order to maximize CS capacity, and, thus, the contribution of the Campania region to the improvement of global climate neutrality. The identification of these correlations allows, also, to identify specific recommendations in terms of plan policies in order to improve the quality of life of local societies in Campania.

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Keywords:

carbon sequestration; climate neutrality; ecosystem services;

T_05 ENVIRONMENT AND CLIMATE (A) / 803

Optimizing Carbon-Neutral Campus Renewal: A Case Study of Xi'an East Station Hub Core Area

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The dual challenges of climate change and environmental degradation place immense pressure on urban environments, making it critical to integrate carbon-neutral strategies into the early stages of planning and design. This study focuses on campus renewal, using the Xi'an East Station Hub Core Area as a pilot to explore innovative approaches for low-carbon, climate-resilient urban design. By leveraging intelligent evaluation platforms, nature-based solutions, and participatory governance structures, this research aims to establish scalable pathways for sustainable urban renewal.

Through the Urban Planning and Design Carbon Neutrality Intelligent Evaluation Platform, real-time assessments of carbon emissions and sinks were conducted, revealing a substantial gap of 100,000 tons CO₂ to achieve carbon neutrality. This shortfall was addressed through a multi-faceted approach combining renewable energy technologies, such as solar panels and ground-source heat pumps, with enhanced green infrastructure and industrial transformation. For example, three-dimensional greening and ecological corridors added 4,100 tons of carbon absorption, while converting 38% of high-density commercial areas into biopharmaceutical clusters reduced emissions by 30,000 tons. These interventions demonstrate how intelligent planning can dynamically balance carbon sources and sinks.

This case study contributes to the broader theoretical understanding of carbon-neutral urban renewal by situating campus-focused solutions within the context of urban ecological transformation. It underscores the importance of aligning technological innovation with participatory governance to address the complexity of urban climate challenges. By integrating advanced data-driven methodologies and human-machine collaboration, this research provides a replicable framework for designing inclusive and resilient campuses.

This research addresses critical themes of climate mitigation, adaptation, and environmental justice. It highlights the role of campuses as experimental spaces for testing innovative planning strategies, emphasizing renewable energy integration, ecosystem restoration, and equitable decision-making. The study also contributes to governance discussions by showcasing how multi-stakeholder collaboration and dynamic planning processes can support long-term sustainability goals.

In conclusion, the Xi'an East Station Hub Core Area exemplifies how campuses can lead the way in addressing global environmental challenges. By combining cutting-edge technology with inclusive urban strategies, this research offers actionable insights for policymakers and planners aiming to create low-carbon, climate-resilient futures.

Keywords:

Carbon Neutrality; Campus Renewal; Green Infrastructure; Climate-Resilient Planning

T_05 ENVIRONMENT AND CLIMATE (A) / 1477

Between Walls and Water: Stormwater infrastructure, everyday adaptation, and the quest for environmental justice in Mumbai

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The way in which urban planning deals with the question of land in Mumbai is invariably tied to how it imagines urban water—in its various forms and flows—in relation to land. In a city where land-use planning is dominated by real estate imperatives, the everyday life of Mumbai's inhabitants is caught in the struggle to anticipate and adapt to how water will flow and flood the city, altering and affecting their socio-spatial experiences, particularly during the monsoon every year. This paper attempts to understand how infrastructural planning practices for storm water drainage shape everyday spatial experiences in the city, focussing on water-related 'events' such as floods, landslides and infrastructural collapses. Through an in-depth case study, the paper investigates into the event of the infrastructural wall collapse that took place in Malad, Mumbai during the monsoon of 2019. It uses the extended case study method to historicise and expand the findings of the wall collapse event for tracing the evolution of storm water infrastructure and drainage in Mumbai's planning. By conducting a transect study of the Malad wall collapse site and situating it within a broader geographical and political-economic context of the city-region, the paper explores the relation between everyday adaptive practices of vulnerable residents and the environmental transformations brought about by regional planning. It develops the transect as an 'analytical tool', grounded in a political ecology framework, to uncover the linkages between everyday adaptation practices and the multi-scalar visions of infrastructural planning that have reconfigured land-water relations in the city-region over time. The paper argues that everyday adaptation practices emerge as a critical response to the inadequacies of institutional planning in addressing storm water management, revealing the intersection of local and regional planning

processes. It theorises the ‘everyday’ as a site where planning failures and environmental injustices are negotiated, highlighting the historical spatial inequalities and systemic vulnerabilities that exacerbate water-related disasters in cities of the global South. It underscores the urgency of addressing environmental and climate justice within the framework of everyday adaptation practices and calls for reimagining institutional planning by prioritising the needs of marginalised communities in cities of the global South.

Keywords:

urban water; everyday adaptation; stormwater infrastructure; infrastructural planning; environmental justice

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T.05 ENVIRONMENT AND CLIMATE (A) / 748

Communities facing floods: risk awareness and climate adaptation strategies in Polish mountains

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The ongoing impacts of climate change have led to an increase in the frequency and intensity of extreme weather events, such as floods, which pose significant threats to local communities, infrastructure, and ecosystems. In response to these challenges, this research examines flood risk awareness among residents and evaluates the effectiveness of authorities' actions during flood crises. Conducted in the Kłodzko Valley - a region heavily affected by intense rainfall and flooding in 2024 - the study provides unique insights into social needs and barriers in crisis management.

The study employs qualitative interviews conducted shortly after flood events, capturing

authentic emotions, experiences, and evaluations from residents. The results reveal critical gaps in warning systems and risk communication, emphasizing the need to integrate community perspectives into adaptation strategies. The analysis also underscores the importance of environmental education and building trust between communities and authorities to enhance the effectiveness of preventive and adaptive measures. The findings offer concrete recommendations for spatial planning and crisis management in the context of climate change. Proposed strategies, such as tailored educational initiatives, strengthened local warning systems, and greater transparency in authorities' actions, aim to increase community resilience to future climate-related threats. This research significantly contributes to the advancement of knowledge and practices in risk management under the dynamic challenges posed by a changing environment.

T_05 ENVIRONMENT AND CLIMATE (A) / 1375

Adapting urban coastlines: strategies and open questions from European regions

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In addressing the impacts and consequences of climate change, there is often a socio-political narrative—particularly at the local level—that focuses on immediate responses and short-term futures. This narrative prioritizes the restoration or maintenance of the pre-event status quo, driven by the desires of affected populations and economic stakeholders, as well as the alignment with political cycles and electoral interests. Incremental adaptation and reconstruction are the most frequently advocated approaches, especially following sudden, high-intensity shock events. However, this conservative tendency is even more pronounced when dealing with slow-onset stresses, where the short-term horizon dominates. In this context, protection measures, emergency responses, and incremental adaptations are the most implemented, often overshadowing transformative opportunities that challenge the current paradigms of coexistence between coasts, their uses, and communities. Despite the existence of transformative windows of opportunity to address impacts with a long-term perspective, they remain underexplored and underutilized.

This contribute examines the adaptation strategies employed in low-lying urban coastal regions to address the challenges posed by climate change, including rising sea levels, storm surges, and coastal erosion. By analyzing current practices, the research identifies key principles and strategies applied in coastal adaptation, referencing the four main approaches outlined by the IPCC (2022): accommodation, planned retreat, strategic expansion, and protection. These strategies vary in their transformative potential, from enhancing existing infrastructure to coexisting with water, to relocating vulnerable communities, creating new land, or building robust coastal defences.

While incremental measures appear to dominate coastal management practices, transformative approaches such as planned retreats seem to face significant political and economic barriers. There appears to be a persistent tension between the prioritization of short-term protective strategies and the pursuit of long-term sustainability for coastal ecosystems. Exploring how local and national adaptation strategies can be better aligned may be key to fostering more effective and forward-looking responses to escalating climate risks.

However, critical questions remain: how can local decision-makers be encouraged to consider transformative approaches such as managed retreats? What are the socio-economic trade-offs associated with prioritizing protection versus accommodating natural processes? And how can coastal cities balance immediate needs with the long-term resilience of their landscapes? These questions are vital to shaping the future of coastal adaptation in the face of accelerating climate impacts.

Keywords:

Climate change adaptation; Urban coastlines; Coastal Adaptation Strategies; Planning

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T_05 ENVIRONMENT AND CLIMATE (A) / 785

Through Children's Eyes: Exploring Climate Change and Flood Resilience in Indonesia's Coastal Areas

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Children are among the most affected yet least involved groups in urban flood resilience planning, particularly in coastal areas facing increasing risks due to climate change. In Indonesia, cities like Semarang, Jakarta, Demak, and Pekalongan are at the forefront of these challenges. Many children in these areas live in informal settlements where frequent flooding disrupts their daily lives. Beyond interruptions to education and family dynamics, some children are forced to join the workforce to support their families, highlighting the complex socio-economic impacts of climate change on this vulnerable group.

This study serves as a preliminary exploration of children's experiences, perspectives, and potential roles in flood resilience planning. Drawing on data from a representative sample of children across four coastal cities, the research provides insights into the multifaceted ways climate change affects their lives. Flooding has been identified as a major disruptor, leading to school closures, heightened mental stress, and strained family relationships. Children also reported challenges in accessing clean water and sanitation during flood events, which further exacerbates health issues.

The study also investigates children's awareness of climate change, their understanding of flood risks, and their views on solutions. While some demonstrate a basic understanding of climate-related challenges, their access to information and opportunities to contribute to mitigation efforts remain significantly limited. This exclusion leaves a critical gap in flood resilience planning, as children's unique perspectives and resilience strategies are often overlooked.

In response to these findings, this paper advocates for actionable interventions to integrate children's voices into urban resilience planning. Recommendations include establishing platforms for youth participation in community decision-making, integrating climate education into school curricula, and fostering intergenerational collaboration to align community priorities with children's needs. Additionally, policies should address the socio-economic vulnerabilities faced by children in informal settlements, ensuring

access to education and safeguarding their well-being during climate-induced disruptions.

By amplifying children's voices and recognizing their potential as agents of change, this study underscores the necessity of inclusive approaches to flood resilience planning. Although preliminary, the findings provide a foundation for further research and advocacy to better integrate children into climate adaptation strategies, ultimately supporting the development of more equitable and sustainable coastal urban communities in Indonesia.

Keywords:

Children's perspectives; Flood resilience planning; Climate change impacts

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T_05 ENVIRONMENT AND CLIMATE (A) / 709

Temporal-Spatial Distribution Characteristics of PM_{2.5} and Noise in the Under-Viaducts Space

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As large cities grow in size and density, they come under increasing pressure for space. Many under-viaducts spaces (UVSs) are being converted into open-air sports fields, but such spaces can cause air and noise problems for people playing sports. There is a lack of research on the pollution of the UVS. In order to finely analyse the environmental pollution in the UVS, the article takes an open-air sports ground under a bridge in Shanghai as an example, and collects PM_{2.5} concentration, noise sound level, temperature and humidity, and traffic flow by using mobile monitoring equipment such as PM:SidePak Aerosol Monitor AM520 and AWA6228 multifunctional sound level meter. The spatial and temporal distribution of PM_{2.5} and noise in winter in the UVS was investigated using descriptive statistics, spatial interpolation and visualisation. The results show that: (1) PM_{2.5} concentration and noise values at different times and points in the space under the bridge are higher than the baseline values, the spatial and temporal distribution of PM_{2.5} concentration fluctuates significantly, regional air pollution amplifies the relative exposure concentration of PM_{2.5}, and the spatial and temporal distribution characteristics of noise are more stable; (2) the daily type difference of PM_{2.5} is greater than the time period difference, while the noise time period difference is greater than the daily type difference, and both of them are nearly arterial roads are elevated and near water bodies are reduced; (3) the air quality pollution intervals at the monitoring points account for 58.0%, and the Grade 5 sound environment intervals account for 95.5%, so the air and sound environments are poor, and the suitability of activities in the space under the bridge is low; (4) Air pollution is highly correlated with the built environment and traffic flow, while noise is more closely related to traffic flow and less so to the built environment, both of which have a negative correlation with temperature. This study provided valuable empirical evidence on the exposure to air and noise pollution in the sports space under viaduct in the micro-environment, which can help planners to adequately consider pollution reduction in the planning and management of urban renewal.

Keywords:

Under-Viaducts Space; Noise, PM2.5; Spatio-temporal distribution; Urban renewal; Shanghai

T_05 ENVIRONMENT AND CLIMATE (A) / 850

An Examination of the Environmental Impacts of Mega Projects on Rural Areas: A Case Study of Two Villages in the South Marmara Region of Türkiye.

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Mega projects, including large-scale industrial zones, bridges, airports, and transportation infrastructure, represent significant investments that profoundly alter land use patterns and pose substantial risks to ecosystems. Within the context of the United Nations' Sustainable Development Goals, particularly those addressing "life on land" and "climate action," the social and environmental ramifications of these projects often extend beyond economic and regional development considerations. While substantial research has been conducted on the effects of mega projects on urban areas, their impacts on rural regions and communities tend to be more profound and destructive.

Environmental Impact Assessment (EIA) serves as a critical mechanism for evaluating the environmental consequences of such projects. Although EIA processes have been legally implemented in Turkey since the 1990s, they have often proven insufficient in mitigating environmental damage.

Mega projects are primarily concentrated in the Marmara Region of Turkey, encompassing a series of investments collectively referred to as the "Golden Ring." This initiative aims to establish a transportation corridor enabling travel across the entire Marmara Region within four hours, thereby facilitating the decentralization of industrial activities. Within this context, the provinces of Bursa and Yalova occupy a pivotal position as key junctions in the Southern Marmara region. These provinces possess unique natural assets, ecological diversity, and rural settlements, which necessitate careful evaluation from a sustainability perspective.

In this context, this study focuses on assessing the environmental impacts of mega projects on rural areas, with specific reference to Kılıç Village in Yalova (Çiftlikköy) and Taşpınar Village in Bursa (Karacabey). Both villages are strategically situated at the intersection of major regional investments. Kılıç Village is located along the Istanbul-İzmir Highway and within the borders of the Yalova Machinery Specialized Organized Industrial Zone, while Taşpınar Village lies within the Technological Organized Industrial Zone (TEKNOSAB). Notably, Taşpınar Village is also situated near Lake Uluabat, a Ramsar-protected wetland of international significance. Both villages are characterized by high-quality agricultural production and rich ecological resources, which heighten their vulnerability to environmental degradation.

A mixed-methods approach will be employed in this study, incorporating both qualitative and quantitative data. Qualitative methods will include a review of relevant literature, institutional perspectives, and interviews, while quantitative methods will involve the analysis and mapping of data on population, industry, trade, and transportation.

The study also aims to provide a comprehensive understanding of the transformation processes experienced by rural areas such as Bursa and Yalova over the past decade due to the implementation of mega projects. It will also examine the potential future impacts of these transformations. By highlighting the risks associated with prioritizing economic development at the expense of environmental sustainability, this research seeks to serve as a warning and a guide for mitigating the adverse effects on rural communities. Furthermore, the findings are expected to inform strategies for safeguarding ecological balance and rural identity before critical environmental and social thresholds are surpassed.

Keywords:

Mega Projects, Rural Areas, Sustainable Environment, Ecological Balance

T.05 ENVIRONMENT AND CLIMATE (A) / 423

Linking outdoor particulate pollution to children's negative experiences of their neighborhoods: Findings from an interdisciplinary research project in Ankara

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Past studies have raised concerns about the vulnerability of children to air pollution because of the characteristics of the places where they live and go to school (Chaix et al., 2006; König, 2024; Lim et al., 2017). Alongside these concerns, the past few decades have witnessed a substantial amount of research aimed at (i) understanding the factors associated with outdoor air pollution in children's neighborhood environments (Paciencia et al., 2022), and (ii) the negative place experiences of children in their neighborhoods, including of those related to outdoor air quality (Ozbil et al., 2024). However, to the best of our knowledge, no study has ever brought these two research topics together. The authors argue that, in the absence of experimental studies on the effects of air pollution on children's relationship with their environments, a match between low levels of neighborhood air pollution and a few negative outdoor experiences related to air quality can support the claims of researchers that there is a relationship between outdoor air pollution and outdoor place experiences of children (Börner et al., 2017).

This study aimed to (i) understand whether children report more negative experiences about outdoor air pollution in school neighborhoods with higher PM2.5 and PM10 concentrations, and (ii) whether these air pollution-related issues are related with the built environment characteristics of their neighborhoods. To respond these questions, an interdisciplinary research project was conducted between 2020 and 2024. The method consisted of several steps. First, eight neighborhoods were selected from Ankara, Türkiye. All public elementary and middle schools were selected from these neighborhoods. Thereafter, all children aged 9 to 14 years in these selected schools were asked to attend a participatory mapping activity. From 16 schools, 1687 children took part in this activity of the project where they pinpointed the negative places around their schools and discussed the reasons of their dissatisfaction with these settings. Meanwhile, built environment characteristics of children's school neighborhoods (e.g., street connectivity, building density, land use mix, neighborhood greenness, proximity to forests, proximity to industrial sites) were collected and objectively analyzed using ArcGIS. In the further stages of the study, PM2.5 and PM10 measurements were conducted in approximately 20 different locations in each school neighborhood by using DustTrak II 8530 aerosol monitors. The measurements took place twice, one in a heating and another in a non-heating season. Children's comments about their experiences of their environments were coded in a content analysis software, MaxQDA, and compared under clusters of school neighborhoods each of which represented different

characteristics based on their location (inner city and periphery) and neighborhood greenness.

Our key findings show that, in overall, children referred to nine different themes associated with air pollution issues when explaining the reasons of their dissatisfaction with different places in their school neighborhoods (e.g., presence of places that lack trees and other vegetation, places where there are construction activities, and places where people are smoking). However, the frequency and percentage distribution of these themes varied from one cluster of school neighborhood to another along with a change in the built environment characteristics and average PM_{2.5} and PM₁₀ concentrations of these environments. These results provide valuable insights for urban planners and designers, highlighting the importance of experiential and context-specific built environment factors related to particulate pollution and offering a foundation for informed decision-making in creating healthier neighborhoods for children.

Acknowledgement: This study was supported by Scientific and Technological Research Council of Turkey (TUBITAK) under the Grant Number 219K243.

Keywords:

outdoor air pollution; children's place experiences; neighborhood; participatory mapping

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T_05 ENVIRONMENT AND CLIMATE (A) / 928

Uses and limitations of community participation tools and strategies to create positive energy districts: A literature review

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The transition to clean energy systems is key to meeting carbon neutralisation targets. Positive Energy Districts (PEDs) emerged to promote local energy autonomy and flexibility. PEDs present an energy transition roadmap multifaceted with social, spatial, and technical aspects. Social aspects include the identification of stakeholders and initiating community collaboration. Establishing energy communities addresses inequalities of energy and mobility poverty by providing access to clean and reliable services. Spatial

factors involve the assessment of feasible areas for implementing positive energy infrastructure. The implementation of active systems for energy generation, low-carbon mobility options, and strategies to reduce energy consumption are technical components. Although there is a roadmap for establishing PEDs, lack of public interest, resistance to change, high costs, and lack of participatory processes prevail as challenges.

Community participation approaches are essential to achieve PEDs. Hewitt et al. (2020) put forward participatory tools are more common to support the implementation of environmental policies in many fields but are less common in the energy field. Participation involves the co-creation of energy, mobility, and climate comfort scenarios, co-monitoring of energy use, and shared governance to tailor energy goals. This has the potential to enhance social acceptance as well as develop a user-centered approach to technologies. Given the diverse disciplines involving the built environment, it is essential to identify the obstacles and opportunities of PED in an inclusive and participatory way.

This paper presents a bibliometric review that aims to explore the potential uses of digital participatory processes in energy transition initiatives. Bibliometric analysis is useful for detecting key publications and mapping research fields (Passas, 2024). The publications queried using digital, *urban design*, participation, and *citizen engagement* keywords. Keywords are chosen based on key research themes including synonyms and related concepts. The queries from databases have resulted in 565 publications. A total of 127 duplicates and 20 publications with different fields were eliminated. 418 publications obtained at this stage were uploaded to Bibliometrix software to conduct author, citation, and impact analysis. The most relevant 50 articles are detected using bibliometric analysis based on the author's local and global impact and the most relevant authors based on co-occurrence and co-citation analysis. This was followed by the snowballing technique to enhance the scope of the review, and 12 more articles were added. In the end, a total of 62 articles are examined for the literature review.

The literature review presents the advantages and limitations of digital participatory tools for establishing PEDs. Digital tools are effective in disseminating information and reaching more people in a limited time. New visualizations provided by virtual technologies can support energy transition projects by enhancing communication (Spieker, 2018). The findings suggest that digital participatory approaches can be integrated into processes as communication channels to evaluate alternatives (Spieker, 2018). Wilson et al. (2024) emphasize developing long-term trust between stakeholders using digital and analog methodologies. However, relying on a single tool to fulfill expectations on energy transition poses limitations. Although hybrid models offer bottom-up participation, digital literacy barriers, maintaining interest, and managing the alignment of views are challenging (Chaves et al., 2021). Wilson et al. (2024) refer to the capabilities of tools in terms of time, interaction, communication, and learning processes. This review paper concludes by suggesting exploring the potential of hybrid methodologies incorporating digital and analog tools in energy transition projects. The integration of social, spatial, and technical aspects would inform experts working in different fields and encourage the integration of human-centered approaches and evidence-based strategies. The direction of future research emphasizes a need for applying hybrid methodologies to address time and space constraints, level of participation, and integration of tools.

Keywords:

Positive Energy Districts; community participation; spatial planning; hybrid tools

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T_05 ENVIRONMENT AND CLIMATE (A) / 1622

Simulsoil: Sustainability-Oriented Soil Planning and Management in Turin's Metropolitan Area

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Mountain areas represent a key domain where scientific literature recognizes emerging cultural and settlement trends that attribute centrality to mountains as privileged sites for experimenting with alternative lifestyles, in contrast to those commonly characterizing lowland urban contexts (Dematteis, 2020). Moreover, at the European level, mountains have been acknowledged for their economic, environmental, energy, and cultural significance, serving as water reservoirs, sources of renewable energy, major tourism hubs, and repositories of biodiversity. At the same time, their vulnerabilities linked to climate change and its cascading effects on broader territorial contexts have also been highlighted.

These dynamics threaten the proper exchange of flows and services, including **Ecosystem Services (ES)**, originating in mountain areas and providing substantial benefits to lowland territories. Numerous studies and research initiatives have applied the ES paradigm to spatially represent ecological and environmental characteristics, supporting territorial governance processes and addressing contemporary challenges related to climate change. This raises the critical question of the appropriate scale at which ES should be assessed: ecosystem performance depends on spatial configurations that identify both service-providing and beneficiary areas (Corrado et al., 2019).

The paper examines the case of the **Metropolitan City of Turin (CmTo)** in the Piedmont Region (Italy), where mountain areas account for 53% of the territory and host 23% of its 312 municipalities. This context is part of an Alpine **metro-mountain system**, where economic, social, and cultural dynamics are shaped by mountain-lowland interactions (Dematteis, 2018).

Building on these premises, the study presents the results of an ES analysis in the CmTo area, aiming to assess the relationships and flows between mountain and lowland areas and highlight the role of high-altitude territories in the broader metropolitan system of reciprocal interactions.

This application is based on the latest scientific knowledge regarding soil ecological functions, drawing on findings from the **EU Life SAM4CP Project (2014–2018)** (1). The project, developed by CmTo in collaboration with DIST-Politecnico di Torino, ISPRA, CREA, and CSI Piemonte (Giaino & Barbieri, 2018; Giaino, Barbieri & Salata, 2019), received formal recognition from the European Commission for its results, particularly for the use of the **open-source plugin Simulsoil**.

Currently under revision (2), Simulsoil is being updated to better support metropolitan land-use planning and soil consumption monitoring. This study leverages soil analysis methodologies using the *Habitat Quality* and *Carbon Storage and Sequestration* statistical

models embedded in Simulsoil.

The findings underscore the crucial role of ES analysis as an integrated tool for supporting spatial planning processes at the territorial and municipal level.

Notes

(1) Co-financed by the European Commission –DG Environment under the LIFE+ 2007–2013 program.

(2) In May 2024, DIST-Politecnico di Torino (lead: C. Giaimo) was awarded a contract for the “In-depth study and update of the evaluation methods for key Ecosystem Services calculated by the SimulSoil software application, developed within the EU LIFE SAM4CP project, and acquisition of contextual data necessary for the biophysical and economic assessment of the considered Services.”

Keywords:

Ecosystem Services, Governance and Metropolitan Planning, Metro-Mountain.

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T_05 ENVIRONMENT AND CLIMATE (A) / 997

Social Movements and Collective Climate Adaptation: The Case of Campo do Bomba, Duque de Caxias-RJ

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Addressing climate governance in Brazil presents a significant challenge due to institutional and political barriers that hinder the implementation of adaptation projects. These challenges include a lack of institutional capacity at the local level and difficulties in integrating sectoral policies. In the Rio de Janeiro Metropolitan Area (RJMA), which comprises 22 municipalities, only two have a Climate Change Mitigation and Adaptation Plan. Despite the absence of official policies or plans for adapting to climate change, local social movements have taken the lead, advocating for better housing conditions and environmental preservation. This article analyzes social mobilization for environmental protection and climate change adaptation through a case study in Duque de Caxias, one

of the RJMA municipalities, showcasing a community-driven project to prevent floods—an essential aspect of climate change adaptation.

Duque de Caxias features a terrain of plains with rugged hills and steep slopes. Its major river basins are characterized by torrents on the slopes that become depositional on the plains, resulting in floods during heavy rains. The municipality struggles with outdated urban planning—its 2006 master plan remains unchanged—and uncontrolled urban occupation of environmentally fragile areas. Although laws prohibit real estate development in these areas, informal settlements often emerge due to the lack of social housing policies that meet the needs of low-income families. The combination of informal occupation in riverbanks and increasingly intense rainfall exacerbates the frequency of flooding episodes.

Duque de Caxias does not have a climate change adaptation plan. As noted by Wannewitz and Garschagen (2023), adapting to climate change is an increasing challenge for local communities, particularly in areas with limited formal adaptation policies, such as marginalized informal settlements. The authors argue that successful adaptation requires collaborative efforts, known as collaborative adaptation. In Duque de Caxias, local social movements advocating for environmental and housing rights have begun addressing climate change issues, embodying the principles of collaborative adaptation.

One of the primary focuses of these movements is the preservation of Campo do Bomba. This area was originally part of the São Bento Protected Area (APA São Bento), created in 1997 due to its ecological importance and role in flood regulation. However, in 2006, the municipal government removed Campo do Bomba from the protected area. In 2018, the mayor proposed a project for a logistics center in this still unoccupied area. In response, FORAS, a civil society organization comprising various social movements from Duque de Caxias, spearheaded resistance against the project.

FORAS organized three public hearings, bringing together residents, social movements, state deputies, and researchers to oppose the project. They also hosted online seminars with researchers and community members to explore alternatives that would preserve the area's ecological value. A consensus emerged to propose the creation of a state park. This initiative culminated in a state bill proposal supported by multiple state deputies.

In collaboration with FORAS, a group of scholars from the Federal University of Rio de Janeiro developed a “sponge park” project for the Campo do Bomba area, combining scientific research with community-based solutions. The proposal was discussed in several meetings with residents. Local leaders have worked to disseminate the project via social media and present it to public officials. The state government's environmental agency endorsed the project as a viable solution to the area's flooding problems and a potential leisure space for the population.

This case study highlights the potential of collective adaptation, driven by civil society, to strengthen local climate change adaptation efforts

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Keywords:

climate adaptation, social movements, floods, Duque de Caxias

T_05 ENVIRONMENT AND CLIMATE (A) / 1623

Analyzing heat-related health risks on a local level: Results

from a household survey in Dresden and Frankfurt/Main, Germany

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The multiple impacts of climate change, such as floods, heavy rainfall, and heat waves, pose major challenges to cities and their inhabitants. In order to protect urban residents from these threats implementing targeted adaptation measures is essential especially in particularly affected areas and for vulnerable groups. In this context, assessing heat-related health risks is extremely challenging and complex, as it involves understanding and considering three dimensions: hazard, exposure, and vulnerability. Integrated approaches assessing all these dimensions are rare due to the lack of small-scale and subjective data.

To address the gap in local data on heat perception and behavior, an online household survey was conducted in early September 2024 as part of a PhD-project. This study addresses two key questions and takes a closer look at two case studies, Dresden and Frankfurt am Main, in Germany:

1. Which population groups are most affected by urban heat?
2. Where in the city and in which everyday situations, such as living, working and mobility, are adaptation measures most needed?

The survey focused on six districts that were selected based on a GIS analysis of the cities' heat maps and are particularly hot. The sample households were randomly selected through the distribution of flyers to mailboxes. To ensure a high participation, the survey is available in the five most common languages of the districts (German, English, Arabic, Turkish and Russian) and focuses on heat perception, behavior during heat waves, exposure and adaptation strategies in various everyday situations (housing, work, public transport), and socio-demographic characteristics.

The results based on a statistical analysis show significant differences in heat perception between the cities, everyday situations, and socio-demographic groups (the p-value is set to 5% or less). In both cities, the perception of heat stress is highest when walking in the city center and when using public transport. Compared to other situations with lower average ranks (e.g. at home during the day, at work, or when walking in the immediate residential area), these differences in distribution are statistically significant for both cities. Furthermore, heat perception on public transport differs significantly between the two cities, being higher in Dresden than in Frankfurt/Main. No other significant deviations in heat perception in general or during other everyday situations can be detected between the cities and districts.

A closer look at the socio-demographic groups reveals some significant differences: In both cities, women report higher levels of heat stress than men when walking in the city center and in the immediate residential area. In Dresden, this is also true for public transport and at work. Health status also influences heat perception, especially in Dresden, where people with lower health status experience significantly higher heat stress in general, at home, when walking outside and on public transport. In Frankfurt/Main, this is only reported when walking in the neighborhood. Singles without children in Dresden perceive less heat than couples with children when walking in the immediate neighborhood and in the city center. In addition, individuals living on the top floor in Dresden are significantly more affected by heat at home during the day and at night than those who live on the ground floor. No such differences can be found in Frankfurt/Main.

In conclusion, the findings highlight the urgent need for spatially and socially differentiated adaptation strategies in the districts of Dresden and Frankfurt/Main. Further steps will include qualitative interviews with experts and local stakeholders to validate the results and gain a more comprehensive understanding of heat stress at the local level. This

knowledge is necessary to develop targeted strategies for adaptation to climate change in the two cities.

Keywords:

climate change adaptation; urban heat; vulnerable population; household survey

T.05 ENVIRONMENT AND CLIMATE (A) / 1152

Addressing Climate Equity Through Community Engagement on Virginia's Eastern Shore

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Rural coastal communities are highly dependent on natural resources, making them particularly vulnerable to the impacts of climate change. This is especially evident in the Eastern Shore of Virginia (ESVA), a hotspot for accelerated climate impacts, including rising sea levels, coastal and inland flooding, and groundwater salinization. These environmental pressures threaten local agriculture, infrastructure, and community livelihoods, particularly in rural and underserved regions. Exacerbating these issues are social and geographical isolation, limited access to scientific information, and the fragmented nature of local decision-making, which often prioritizes short-term solutions over sustainable, equitable adaptation strategies.

To address these challenges, the ESVA Climate Equity Project, funded by the U.S. National Science Foundation's Coastline and People (CoPe) program, has developed a participatory engagement framework that integrates local knowledge with scientific research to build community-driven climate resilience strategies.

Community engagement is foundational to this work, with activities designed to center diverse voices, particularly those from historically underserved populations. A 12-member Community Advisory Committee (CAC), inclusive of local leaders, guides the project. Broader outreach strategies—such as workshops, interviews, and focus groups—ensure inclusive participation, amplifying community concerns and integrating lived experiences into tool development. These efforts have deepened local understanding of climate risks and fostered trust, enabling effective collaboration between stakeholders.

This paper explores the outcomes of the ESVA Climate Equity Workshops and institutional stakeholder interviews. The workshops adopt an open-house format to foster dialogue between the scientific community and local stakeholders. With participation from 60-80 community members per event, the workshops cover critical topics such as sea-level rise, septic system management, and the regional climate timeline. A key outcome has been the identification of community desires for deeper, more sustained conversations about climate solutions. By employing interactive tools and tailored presentations, the workshops serve as a platform for amplifying diverse voices and addressing localized climate impacts. The institutional interviews with community organizations and service providers highlight their perspectives on the challenges, needs, and opportunities associated with climate equity and resilience. These insights provide a detailed look at the region's climate priorities, including water management, sea-level rise, housing, infrastructure, public health, and more.

Key findings reveal that collaborative engagement not only improves the community's understanding of climate risks but also enhances trust and collective action. The par-

ticipatory model underscores the importance of integrating environmental justice principles with innovative urban planning solutions to mitigate and adapt to climate impacts.

This paper contributes to the discussion on addressing the planetary crisis at the local level, with a specific focus on environmental justice and inclusive urban policies. By sharing lessons from the ESVA Climate Equity Project, this study aims to inform and inspire similar initiatives in other vulnerable coastal communities. The results emphasize the potential for community engagement to drive equitable and climate-resilient urban development, aligning with the broader goals of sustainable and inclusive urban transformation.

Keywords:

climate equity; community engagement; rural coastal communities

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T_05 ENVIRONMENT AND CLIMATE (A) / 1641

Retreat, Cooperate, Overlap. Rethinking spatial strategies for coexistence on the Medi-terranean coast within climate change

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This contribution explores innovative planning strategies, still largely underexplored in the Mediterranean context, aimed at rebalancing and rethinking the interactions between anthropic systems and ecological processes along the coastline. The Mediterranean coast presents a complex composition of diverse coastal typologies, characterized by varying degrees of human occupation and a wide array of land uses. Within this heterogeneous framework, anthropogenic systems and local ecologies coexist in a delicate balance, increasingly threatened not only by anthropogenic pressures but also by the accelerating impacts of climate change. As a stratified geographic space of interactions, the Mediterranean coastal region is undergoing profound transformations due to climate change. Recognized as both a climate change and biodiversity hotspot, it faces rising sea levels, increasing land and sea temperatures, and shifting water balances, all of which are reshaping livelihoods and ecosystems. Within this context, Mediterranean coasts can be conceived as landscapes of coexistence, continuously transitioning and highly dynamic environments. These liminal territories, situated at the interface between land and water, present a certain spatial depth and width both seawards and landwards, functioning as buffer zones where transformations of coexisting systems permeate multiple layers, influencing both natural and human-made environments.

The paper examines landscapes of coexistence by focusing on medium-scale, often highly infrastructured and sparsely populated Mediterranean coastal territories, calling them 'Medi-terranean': small villages, dispersed urban agglomerations and small deltas. Despite their intermediate scale, these configurations are among the most widespread and dominant territorial formations within the basin, occupying a significant portion of the overall coastal area and, consequently, emerging as some of the most vulnerable regions to climate change. Specifically, the study investigates the notion of coexistence within these critical landscapes, proposing an integrated approach to address contemporary environmental and socio-spatial challenges on three case studies identified along the Medi-terranean coastal region, proposing three strategic approaches - retreat, cooperation, and overlap - as analytical lenses to explore potential opportunities for fostering diverse landscapes of coexistence: (i) retreat, that entails creating space for ecological processes by stepping back, removing permanent structures that disrupt ecological continuities, and establishing open spaces that allow natural systems to regenerate. By prioritizing ecological resilience, retreat facilitates the formation of open ecological corridors and buffer zones; (ii) Cooperation fosters dialogue between different systems within a shared space, conceptualized as an intermedial zone between the built and natural environments. By designing spaces that accommodate both human and non-human inhabitants, cooperation enables a middle ground where hybrid landscapes can emerge; (iii) Overlap strategy emphasizes spatial and functional integration, promoting a network of shared uses and activities that enhance synergies between anthropogenic and ecological systems. Overlap facilitates the formation of multifunctional landscapes, where interactions between human and natural processes are reinforced, creating a common ground. The findings of this explorative analysis underscore the necessity of making space for nature at multiple scales and through diverse approaches in order to redefine systemic interactions and reimagine future landscapes of coexistence along the Medi-terranean coast. Ultimately, this paper extends an open invitation to reconsider how we engage with "nature" within the planning and design processes.

Keywords:

coexistence; mediterranean coast; climate change adaptation; coastal inhabitation; socio-ecological transition

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T_05 ENVIRONMENT AND CLIMATE (A) / 1268

Feminization of Energy Poverty in China: Contrasting Urban and Rural Experiences

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Promoting gender equality and access to affordable, reliable, sustainable and modern energy are two pivotal components of the Sustainable Development Goals (SDGs) outlined by the United Nations. Specifically, SDG7 calls for reducing dependence on biomass materials (carbon-based fuel like wood, leaves, straw, cow dung, coal, etc.) as the main source of cooking fuel. Energy poverty is considered to have a woman's face (Sánchez, Fernández and Peiró, 2020). Earlier studies have revealed that the use of biomass in cooking imposes time, health, and environmental costs on households (Bukari, Broermann and Okai, 2021), with such costs often falling on women due to their traditional roles. Furthermore, geographical inequalities in energy poverty further intensify these gendered burdens, particularly the urban-rural disparity.

According to Zhang et al. (2019), approximately 48.98% of Chinese households are still experiencing energy poverty, with over 400 million Chinese individuals relying on traditional biomass and coal for cooking. The challenge is even more serious in terms of energy disparity. More than 75% of rural households primarily used coal and firewood as fuel sources (i.e., 17.1% and 58.6% with coal and biomass respectively), while 8.2% and 36.1% of households in urban and township areas used solid fuels for cooking (Lu et al., 2022). These facts indicate that the urban-rural disparity in energy poverty is still a pressing issue in China. Undoubtedly, gender inequality in the context of energy poverty is also a critical issue in China. This issue is particularly associated with the Chinese Confucian culture (Li et al., 2023), which has long emphasized traditional gender roles and hierarchical social structures. This cultural framework continues to influence contemporary societal norms, limiting women's access to energy resources and involvement in energy-related decisions, particularly in rural areas (Tang et al., 2020). As such, households influenced by Confucian culture tend to exhibit gender bias and are more likely to experience energy poverty. Therefore, promoting gender equality in energy poverty requires not only an economic solution but also a deep understanding of the cultural norms that shaped gendered access to energy. In this, it calls for a need for a comprehensive understanding of energy poverty as both a gendered and spatially embedded issue.

This paper employs a mixed-methods approach, which combines quantitative analysis of the China Family Panel Studies (CFPS) database with qualitative semi-structure interviews to capture the multi-dimensional features of energy poverty. Quantitative findings reveal rural women are disproportionately affected by energy poverty due to limited infrastructure, restricted economic opportunities, and lower education level, leading to an overreliance on biomass and other polluting fuels. Building on these findings, the qualitative analysis delves deeper into the underlying social and cultural factors that exacerbate these disparities. It shows how traditional Confucian culture norms influence the domestic roles of females related to energy poverty, such as family status, and overall well-being. Consequently, the qualitative research uncovers systematic marginalization of women in energy planning and policy-making processes, emphasizing the cultural and structural barriers that constrain their agency and perpetuate energy poverty. Together, these findings underscore the multi-dimensional characteristics of energy poverty in China and the importance of addressing both structural inequalities and cultural norms in crafting equitable energy policies.

By examining the lived experiences of women in urban and rural China, this paper helps to see the deep-rooted cultural standards and structural obstacles that aggravate energy disparities. It emphasizes the urgency of transformative strategies that go beyond mere technical fixes, advocating for gender-sensitive policies, inclusive decision-making systems, and culturally informed interventions to address systematic inequalities. By integrating ecological sustainability with social and spatial justice, this paper contributes to the broader pursuit of equitable and resilient societies.

Keywords:

Energy Poverty; Gender Inequality; Urban-Rural Disparities; Confucian Culture; Households

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T_05 ENVIRONMENT AND CLIMATE (A) / 1269**Simulating Urban Green Space's Cooling Impact on Adolescents' Sleep Quality Using Diverse Planning Approaches****Authors:** Yuan Gao¹; Shenjing He¹¹ *Department of Urban Planning and Design, The University of Hong Kong***Corresponding Authors:** sjhe@hku.hk, gaoyuan1999hhh@gmail.com

The intensifying global warming, coupled with urban heat island phenomena, have brought a wide range of health issues related to humid heat exposure, particularly in densely populated urban areas of tropical and subtropical regions (Zhang et al., 2023). Our prior research has demonstrated that humid heat exposure significantly jeopardizes adolescents' sleep health, with wet bulb temperatures ranging from 25-30 °C causing a three to sixfold increase in the risk of sleep disorders, markedly higher than when considering dry bulb temperatures alone (Gao et al., 2025). These findings underscore the urgent need for planning interventions.

Urban Green Space (UGS) mitigates heat in surrounding areas through enhanced evaporation, provision of shade, and improved air circulation (Gunawardena et al., 2017). Trees, grass, and soil can absorb excess heat and moisture, regulating air temperature and humidity, as demonstrated a crucial pathway to reduce urban humid heat in a recent global scale work (Yang et al., 2024). While several studies have examined specific UGS types and their cooling effects in relation to landscape features and neighboring land uses (Aram et al., 2019), few have assessed the cooling potential of UGS in conjunction with public health benefits or explored the spatial mismatches from a regional scale, hampering effective planning.

Our study utilized survey data from over 100,000 adolescents across six cities in China's Greater Bay Area, alongside land use data (30m resolution) and monthly climate data (1km resolution). We applied a random forest method to develop an atmospheric temperature prediction model, incorporating land use, NDVI, and various climate indicators,

achieving an average accuracy exceeding 0.9. We evaluated four distinct planning approaches for introducing new UGS: expanding existing large UGS, expanding existing small UGS, establishing new large UGS, and creating new small UGS. All proposed UGS were based on patches that were bare ground during the survey period, with their average NDVI values equal to the existing UGS. We integrated simulated scenarios with the temperature prediction model and linked these to a nonlinear regression model analyzing sleep disorder risks. Our findings indicated that adding approximately 2.3 square kilometers of new UGS significantly reduced the risk of sleep disorders for about 50% of the sampled adolescents. Expanding existing large UGS benefited the largest number of samples, while expanding existing small UGS yielded the lowest Gini coefficient for sleep disorder risks across all samples, indicating the most equitable outcomes. Establishing new small UGS had the least impact on cooling and health benefits, likely due to their location in suburban areas.

The four scenarios we analyzed highlight the common trade-offs between economic and social factors in urban planning. In China, the hierarchical breakdown of land use indicators at the provincial, municipal, and county levels serves as a widely utilized policy tool often accompanied by mandatory UGS requirements (Lin et al., 2023). Selecting small, low-value bare land patches to meet these requirements is cost-effective and minimizes social issues; however, it may lead to inefficient resource use considering climate and public health benefits. Conversely, expanding existing large UGS in city centers incurs high development costs due to premium land values, presenting potential challenges. As public health and its equity in the planning and development of UGS has often been neglected in past practices, it is essential to prioritize these factors to attain more effective and sustainable outcomes.

Keywords:

Urban Green Space; Sleep Disorder; Cooling Effect; Social Equity

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T_05 ENVIRONMENT AND CLIMATE (A) / 1719

Understanding social acceptance of decarbonisation policies in planning towards positive energy districts

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Transformative change of the local urban energy system towards renewable energy consumption and energy efficiency is needed to diminish urban GHG emissions and pave the way towards climate-neutral cities. To secure carbon neutrality in cities, neighbourhoods offer critical sites for local action for climate mitigation and decarbonisation policies. An emerging body of literature on climate-neutral neighbourhoods and positive energy districts (PEDs) addresses how the district level unlocks potential for collective action by allowing for increased energy efficiency, flexibility and energy production. While technological interventions of the built environment are needed, pathways to PEDs need to be understood considering their social and behavioural dimensions. Therefore, it is a common understanding within the literature and as addressed within EU directive for PEDs framework that PEDs should include multidimensional objectives for ecological, social and economic sustainability. Nevertheless, most PED literature so far is technological in nature.

To understand the different social enablers and barriers to PEDs, a deeper understanding of social acceptance could provide a social lens on PEDs. An understanding of social acceptance PEDs and its social elements such as trust relations, local attitudes, social inclusivity, and behavioural change is still lacking. At the same time, a place-based approach by looking at the neighbourhood level is needed to allow for addressing context-specificities of complex sociotechnical configurations, relevant to understanding social acceptance processes. Moreover, as urban localities face different challenges such as high-density housing, limited available energy sources and a lock-in in existing local energy networks, understanding the social elements of PEDs could also further contribute to multiple approaches to social acceptance. Furthermore, neighbourhoods form complex interdependent social processes, social networks and power relations shaped by everyday practices and social interactions. Whereas traditional social acceptance literature has mainly focused on large-scale energy technologies, understanding acceptance of small-scale, decentralised and urban interventions has been limited discussed. Considering social elements such as energy vulnerability and energy justice, a local or even bottom-up renewable energy implementation could offer the possibility to empower communities while implementing technological interventions towards carbon neutrality. Nevertheless, it could also become contested spaces, addressing issues of heritage loss, displacement and social exclusion. These different elements can display the complexity of sociotechnical transformative trajectories but also address potential synergies that take place for drivers or barriers to effective energy policy implementation.

Therefore it will be argued that there is a need to incorporate a social understanding of transformative pathways to climate-neutral cities, by combining insights from PEDs literature with the wide body of social acceptance literature. While the technological focus within PED literature could benefit from social energy research, the urban context could provide new insights into social acceptance theories, by addressing the question how the urban context influences social acceptability of new energy systems. Additionally, a further critically analysis and elaboration on the meaning of the neighbourhood as site for local action is needed. As it is expected that by 2050 70% of the global population will be living in urban areas, the city as a location of renewable energy implementation will raise different encounters of resistance or potential enablers.

Keywords:

positive energy districts; social acceptance; neighbourhood planning; literature review

T_05 ENVIRONMENT AND CLIMATE (A) / 1868

Living on the edge: How do perceptions of coastal erosion risk affect residential mobility decisions?

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Sea level rise and the increased intensity and frequency of extreme weather events such as storms and related storm surges, driven by climatic change, will increase such risks to coastal populations (IPCC, 2022). In the UK alone 82,000 properties are at risk of loss by the end of the century, with 2,200 of those by 2040 according to the UK's latest climate change risk assessment. There are high financial costs of managing and slowing the rate of coastal erosion, meaning that in many locations (including in the UK) there are significant uncertainties about where current coastal management policies of protecting coastal areas will be fulfilled (Sayers et al., 2022). This means that this paper sets out to explore issues which are likely to become more common in many nations.

This paper focuses on the experiences of households affected by coastal erosion, and how the institutional frameworks regarding the management of coastal erosion affect residential decision-making, a topic which to date has received limited attention. It explores residential decision-making when a decision is made to not defend a coastline against erosion. It does so by presenting the findings of a series of interviews with residents on the Holderness coast in the UK, the fastest eroding coastline in Europe.

Its key scientific contribution is in providing an understanding of the experience and impacts of coastal erosion upon communities and how this affects risk perceptions and residential mobility decision-making. The research seeks to understand how individuals interpret, perceive and weigh up the benefits and risks from moves into, and out of properties at risk of erosion (Raaijmakers et al., 2008).

The positive experiences of living in a rural, coastal location are explored in the paper. This contrasted with the negative experiences of erosion, and the associated feelings of unfairness, physical decline and related loss of amenity and perceived abandonment by local government. This, in addition to the significant reduction in financial value of property influenced the balance between benefit and risk resulting from a residential move into or out of the study area. For some, the benefit of a discounted home served to encourage a move into the area, despite the presence of risk. For others, the range of benefits associated with living in the study area meant they were unwilling to move away, despite the risk.

Residential moves into the study area may seem irrational. An important contribution of this paper is to illustrate that they are the result of the balancing of intuitive judgments of risk and benefits in the residential decision-making process. An inward move represented an example of residential decision-making where the tangible benefit of a house at a heavily discounted price, along with a series of other less tangible benefits (e.g. place attachment and amenity benefits of living in such locations) outweighed the perceived risk. The balance between risk and benefit did not explain the situation completely. In some cases, the low value of homes meant some household's financial resources could not support a move away from risk. This underlined how the absence of compensation for the effects of erosion means the impacts of erosion fall disproportionately on lower-income households.

The paper goes on to consider the policy and practice implications, exploring the fairness of compensation regimes, and understanding how changes in governance frameworks for managing coastal change at the coast can be fairly and smoothly implemented. By doing so, the paper draws connections between climate adaptation, coastal management, public perceptions, and residential decision-making.

Keywords:

Coastal Erosion; Climate Change; Climate Adaptation; Risk Perceptions; Coastal Management.

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T_05 ENVIRONMENT AND CLIMATE (A) / 956

Forming to inform: the role of ecosystem services knowledge for climate adaptation planning

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The growing recognition of the value of nature in addressing current environmental challenges calls for widespread consideration in spatial planning and decision-making processes. Of the many ecosystem services (ES) that nature can provide, some can directly influence the reduction of extreme events severity and, therefore, help adaptation to the impacts of climate change, particularly in urban contexts. However, it is precisely climate impacts in combination with human activity that are compromising the ability of ecosystems to provide these services.

This contribution describes research developed in support of the process of updating and revising the "Piano di Governo del Territorio (PGT)", the planning tool of the Autonomous Region Friuli Venezia Giulia, Italy, taken as a case study. The administration's objective is to make the tool more flexible and capable of adapting to changing territorial, environmental and social dynamics for eco-sustainable and resilient spatial planning. Concerning the context of the PGT, this research considers the multi-sectoral and multi-scalar aspects that characterise both the ES approach and the climate adaptation processes, then investigates the interdependence between these two themes to promote their integration in plans and policies. It assumes ecosystem services to be tools for assessing territorial performances through which to analyse the territory, as they can be both enabling factors in enhancing an adaptive reading and factors exposed to natural and anthropogenic threats. In this sense, building knowledge on ES can represent an opportunity to guide the inclusion of adaptation processes in planning tools and inform sustainable decisions.

First, the research identifies the main barriers to the implementation of ES in planning from a literature review. Second, it reflects on the ways to overcome these barriers by developing an integrated decision-support model, i.e., a practical context-specific toolkit that can, at the same time, make a theoretical contribution to the discipline of spatial planning. The focus is placed on a subset of ES that can foster adaptation, which in this research takes the name of Ecosystem Services for Climate Change Adaptation (ESCCA). The model consists of three main phases: (i) assessing the supply of ESCCA, (ii) defining the demand for ESCCA and identifying deficit areas, i.e., those areas where demand is not met by supply, and (iii) based on the latter, guiding the selection of appropriate nature-based solutions.

The aim is not to reach the best solution but to inform and train decision-makers to understand the importance of these two interconnected issues and their role in ordinary planning. Thus, the discussion will not focus on the methodology but more on the results obtained and the process of building a climate action and transition-oriented reasoning as an innovative guideline to adopt a new approach rather than one more tool. That makes it possible to promote forward-looking and cross-sectoral actions, not relegated

to extraordinary planning, which appears outdated in light of the current planetary crisis. Finally, the research returns to the barriers found in the literature and, looking at Friuli Venezia Giulia's PGT, proposes valuable observations and take-home messages from the case study and beyond.

Keywords:

decision-support model; climate change adaptation; ecosystem approach; planning process

T_05 ENVIRONMENT AND CLIMATE (A) / 1357

Evaluating Black Sea Coastal Road and Reclamation Projects in the Context of Sustainable Coastal Planning

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For thousands of years, coastal areas have been shaped and their resources effectively utilized by humans. Today, coastal areas face demands for industrial, commercial, and recreational use (Kay & Alder, 1999; Akyarlı, 2002). The processes of coastal areas have been shaped by different management approaches over time, with notable periodic differences evident in the coastal management classifications by O'Riordan and Vellinga (1993). Between 1950 and 1970, sectoral approaches dominated, and ecological factors were often overlooked. From 1970 to 1990, greater integration between sectors and public participation were achieved. Between 1990 and 2000, a sustainable development-oriented approach was adopted. It is predicted that future coastal management will be based on principles of ecological empathy, precautionary management, and collaborative governance. Building on this prediction, the study examines the impact of projects implemented along the Eastern and Central Black Sea coasts on the sustainability of coastal areas.

The main issue addressed in this study is to discuss the impact of the approach adopted for the planning of coastal areas in Turkey on the sustainability of coastal areas, using case studies from cities on the Eastern and Central Black Sea coasts. In the study, approaches to coastal planning and example applications are discussed within the context of global examples, while the 'coastal legislation,' which is the primary foundation for coastal area planning and regulation in Turkey, is also examined in the context of its legal framework for implementation.

The study will be carried out in three stages:

1. A literature review on sustainable coastal planning and an evaluation of Turkish coastal legislation within this framework.
2. A total of 22 projects will be evaluated through the creation of 'project identity cards,' comprising 7 projects from Turkey—primarily the Black Sea Coastal Road Project and other initiatives completed in the coastal cities of Samsun, Ordu, and Trabzon—as well as 15 coastal projects selected from global examples. The spatial and environmental impacts of these projects will be thoroughly assessed.
3. Six reclamation projects, which stand out and show differentiation in terms of environmental impacts within the study area, will be examined in detail. Based on the findings, recommendations for sustainable coastal planning will be developed.

Global examples show diverse approaches to coastal management. In Australia and the UK, ecological value is prioritized, while in the US, Singapore, and the Maldives, economic value takes precedence. Sweden and Denmark focus on transforming idle coastal areas sustainably, balancing conservation and use. Conversely, the US, Singapore, and the Maldives often emphasize economic exploitation. Italy focuses on enhancing agricultural production, and South Korea showcases sustainable development through smart cities. The Philippines and Malaysia have large-scale artificial island projects, while Dubai's tourism-driven development has raised concerns about environmental impact and sustainability. These examples reflect how coastal management priorities vary by region, balancing ecological, economic, and social goals.

In Turkey, the Black Sea Coastal Road is a major reclamation project linking coastal cities, sparking reclamation projects in most areas except Ordu. In Samsun, the road runs partly along the coast, with reclamation projects focused on tourism and recreation. In Trabzon, the road follows the coast, with large urban developments like hospitals and stadiums, making it a unique case due to planning uncertainties. Ordu, however, stands out as the road hasn't led to reclamation projects; instead, sustainable coastal development has allowed for economic and social activities.

In conclusion, coastal area management examples emphasize the need to balance ecological, economic, and social values to prevent long-term issues, with the Black Sea Coastal Road highlighting the importance of considering coastal impact in large-scale projects, ensuring reclamation areas align with urban fabric, sustainability, and social benefits.

Keywords:

Coastline projects, Coastal cities, Coastal planning, Sustainability, Urbanization

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T_05 ENVIRONMENT AND CLIMATE (A) / 519

Exploring coastal boundaries: trasformative planning as a tool for territorial resilience

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The planetary crisis, driven by the accelerating impacts of climate change and environmental degradation, places coastal areas at the forefront of a global challenge. These transitional spaces between land and sea are home to a significant proportion of the

world's population, rich cultural heritage, and essential ecosystems. Yet, they face escalating pressures from hazards such as sea-level rise, coastal erosion, and extreme temperatures, which disrupt social, economic, and ecological systems. In this context, spatial planning emerges as a transformative tool to mediate competing interests and navigate the complexities of coastal adaptation, ensuring socio-ecological resilience.

The concept of the coast itself encapsulates the multidimensional nature of this challenge. Ketchum (1972) defines the coast as “the band of dry land and adjacent ocean space (water and submerged soil) where terrestrial processes and land uses directly affect oceanic processes and uses, and vice versa.” However, Sorensen and McCreary's (1990) distinction between coastal zones and coastal areas highlights the ambiguity and variability of these spaces, shaped by ecological, geomorphological, and socio-economic forces. This plurality complicates efforts to define, delimit, and manage coastal territories, which are intrinsically fluid and dynamic.

Historically, coasts have been recognized as fragile and high-risk environments. Bultrighini's (2013) exploration of coastalness versus inlandness in the Mediterranean underscores the intrinsic vulnerability of coastal areas and their heightened exposure to risks compared to inland territories. Climate change exacerbates these vulnerabilities, intensifying tensions linked to urbanization, tourism, and ecological degradation. Coastal territories remain exposed to overlapping hazards that transcend administrative and disciplinary boundaries, challenging the capacity of existing governance frameworks to provide effective solutions.

This contribution critically examines the interplay between definitions, delimitations, and vulnerabilities in coastal areas, aiming to inform more effective planning and governance practices. Drawing on perspectives from geography, environmental studies, and urban planning, it explores how differing conceptualizations of coastal spaces influence the identification of hazards and the design of adaptive strategies. Coastal areas cannot be managed merely as physical spaces through sectoral technical tools; they demand an integrated, interdisciplinary approach. Planning must embrace the coast as a complex system, where ecological, economic, social, and cultural variables intersect.

Spatial planning, when applied to coastal management, faces the challenge of integrating multiple scales and addressing the inherent dynamism of these areas. To become a transformative tool, planning must account for the hybrid nature of coastal systems, balancing ecological integrity with socio-economic needs, overcoming static boundaries and disciplinary silos, and fostering resilience by recognizing the fluidity and interconnectedness of coastal environments.

This initial phase of research focuses on defining and delimiting coastal spaces, recognizing that governance tools currently in place often fail to capture the complex, transboundary nature of these territories. The task of managing coastal areas requires acknowledging their hybrid and fragile character, where diverse and overlapping interests intersect. Understanding these territories as dynamic systems necessitates a deeper inquiry into the reasons, they remain central to academic and policy debates. By exploring these dynamics, the aim is to reshape coastal governance frameworks, leveraging interdisciplinary collaboration and multi-scalar approaches to transform coastal resilience and sustainability into a cornerstone of the response to the planetary crisis.

Keywords:

Climate adaptation; coastal governance; transformative planning; territorial resilience; interdisciplinary planning

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T_05 ENVIRONMENT AND CLIMATE (A) / 433**Coordinated Development and Coupling Mechanisms of Capital Flows and Carbon Emissions from the Perspective of Environmental Justice****Authors:** Ting Zhang¹; Yuanhong Qiu²; Jianzhong Huang¹¹ *Tongji University*² *Chongqing University***Corresponding Authors:** 18089545176@163.com, cqquyh678@163.com

This study addresses the critical need to balance economic development with environmental sustainability, focusing on the coordination between capital flows and carbon emissions in the economically developed Yangtze River Delta (YRD) region from the perspective of environmental justice. By investigating the coupling mechanisms between resource allocation and carbon emissions, the research seeks to uncover the dynamic interactions that drive regional sustainability. It further aims to classify and analyze the types of imbalances to offer actionable insights for addressing environmental disparities. Using micro-level data on corporate capital investment in the YRD and carbon emission network grid data, the study employs complex network analysis and a coupling coordination model to evaluate regional coordination levels and identify areas of extreme imbalance. Through a typological framework, regions are categorized based on the degree and nature of their discordance, and a multiple linear regression model is applied to explore the underlying mechanisms that link capital flows and carbon emissions. The findings reveal that the coupling mechanisms exhibit significant variation across sectors and regions. In sectors such as electricity, transportation, and finance, there is a pronounced mismatch between capital flows and carbon emissions. For instance, the electricity sector's disjointed areas are concentrated in Northern Jiangsu and Anhui provinces, reflecting inadequate investment in low-carbon infrastructure. In the transportation sector, coordinated areas are mainly found in provincial capitals and cities near Shanghai (e.g., Suzhou, Wuxi, Nantong) and Ningbo, while other regions face severe imbalances due to inefficient transportation networks and high emission intensities. The financial sector demonstrates better coordination in economically vibrant areas such as Shanghai, Hangzhou, Hefei, Ningbo, Wenzhou, and Jiaxing, with other regions lagging behind. Conversely, the agricultural and industrial sectors show relatively higher coordination, though localized imbalances persist, particularly in Anhui, Zhenjiang, Zhoushan, and parts of Northern Anhui and Southern Zhejiang. By categorizing these imbalances, the study identifies distinct factors contributing to the lack of coordination, including disparities in technological adoption, regional economic structures, and policy implementation. The coupling mechanisms reveal that regions with higher levels of capital investment in green technologies exhibit improved coordination, while areas with limited resources face heightened environmental and economic risks. This research underscores the importance of differentiated policy interventions tailored to regional contexts, advocating for equitable resource allocation and low-carbon development strategies to promote environmental justice. By integrating coupling mechanisms and typological analysis, the findings provide a nuanced understanding of the interplay between capital flows and carbon emissions, offering robust guidance for policymakers to achieve sustainable development and carbon neutrality in the YRD and beyond.

T_05 ENVIRONMENT AND CLIMATE (A) / 504**Integrating equity in adaptation planning: identifying and prioritizing projects for the biggest impact****Author:** Stephanie Erwin¹**Co-authors:** Birgitt Ouweneel¹; Jeroen Kluck¹; Sába Schramkó¹

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Climate change and urbanization are intensifying heat stress risks, threatening public health and liveability (Böcker & Thorsson, 2014; Ebi et al., 2021; IPCC, 2022). Rising temperatures disproportionately affect vulnerable populations, including those with limited mobility, low incomes, or health conditions (Ellena, Breil, & Soriani, 2020; Gronlund, 2014; Reid et al., 2009; Voelkel et al., 2018). Local governments tasked with equitable implementation often struggle to translate national, regional, and local policy ambitions into impactful adaptation projects (Ende et al., 2022). Despite the EU's commitment to prioritize vulnerable populations in adaptation, implementation of equitable planning processes remains limited (Birkmann et al., 2020; ETC/CCA-LULUCF, 2023).

Conventional heat adaptation planning focuses narrowly on hazard indicators like Physiological Equivalent Temperature (PET), often ignoring the socio-economic, health, and demographic factors that shape vulnerability (Ellena, Breil, & Soriani, 2020). This narrow approach overlooks the compounded challenges faced by marginalized communities, whose vulnerabilities result from intersecting social, economic, and environmental factors (Harlan et al., 2006; Kang, Park, & Jang, 2024). While mainstreaming supports effective adaptation (Biesbroek, 2021), municipal silos and sectoral planning hinder integrated solutions, necessitating a transdisciplinary framework incorporating diverse risk indicators, policy guidance, and stakeholder collaboration (Frans et al., 2016). By dismantling silos and fostering co-creation, this approach ensures equitable and effective adaptation planning grounded in practical realities.

Cool Cities, an EU Interreg NSR project, develops a framework for heat stress adaptation that encompasses short-, mid-, and long-term planning horizons. The approach incorporates diverse indicators—meteorological, environmental, socio-economic, health, and demographic—to ensure equitable outcomes and prioritize projects for marginalized populations. Eight partner municipalities from five EU countries serve as testing grounds to empirically validate the approach across diverse political and governance contexts, yet facing comparable heat-related threats. Effective adaptation relies on (policy) integration across sectors. This study fosters transdisciplinary collaboration, by engaging municipal stakeholders to optimize co-benefits and synergies, prioritizing locations where heat and related challenges are addressed integrally. Ultimately, the project aims to bridge the implementation gap by promoting actionable, equitable, and streamlined adaptation planning practices.

This study adopts a data-driven methodology to design “cool networks”—city-wide network of thermally comfortable locations and slow-traffic routes, consisting of pedestrian and cycling pathways. A GIS-based thermal comfort assessment is conducted using high-resolution PET maps to identify and optimize these networks. Through a zonal histogram, 100x100-meter grid cells are evaluated to determine their compliance with thermal comfort thresholds. Primary slow traffic routes, are overlaid onto this grid to map existing cool networks and identify gaps. A GIS-based risk assessment is then conducted integrating hazard indicators (e.g., PET), exposure metrics (e.g., population density), and vulnerability indicators (e.g., health conditions, socio-economic status). This approach establishes a long-term vision for a cool network, and identifies areas where adaptation interventions are most urgently needed or likely to yield the greatest impact. To ensure prioritization is inclusive, equitable, and context-sensitive, the process incorporates a policy scan and participatory framework. Co-creation sessions, utilizing Multi-Criteria Analysis with municipal stakeholders, including planners, designers, engineers, and other urban professionals, are facilitated to prioritize projects by combining qualitative insights with quantitative data. Institutional knowledge ensures that local expertise, governance structures, and practical considerations are integrated into decision-making.

This research offers planners a replicable, equity-focused framework for addressing heat challenges through cool network planning. Combining GIS-based risk assessments, policy scans, and co-creation, it ensures adaptation strategies are data-driven, context-sensitive, and inclusive. By prioritizing projects transparently based on feasibility, equity, and impact, the framework integrates heat resilience with mobility planning, emphasizes vulnerable populations, and supports broader sustainability goals like active transportation and biodiversity. This approach advances the EU's commitment to equitable climate resilience, fostering thermally comfortable, accessible, and socially equitable cities.

Keywords:

Climate adaptation planning; heat stress; climate justice; risk assessments; co-creation

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T_05 ENVIRONMENT AND CLIMATE (A) / 526

Optimizing Decision-Making for Climate-Neutral Post-War Buildings: The Architect's Role in Sustainable Transformation

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The transition to a climate-neutral building stock by 2045 is a pressing objective for the architectural and construction sectors. This research examines the decision-making processes surrounding the renovation, roof extension, and potential demolition of post-war residential buildings in Germany, with a focus on the architect's role in integrating environmental and climate considerations into the planning process. By employing qualitative methods—notably expert interviews and qualitative content analysis—the research investigates the complexities and barriers to aligning construction practices with sustainability goals.

Research Context

Architectural discourse surrounding post-war buildings from the 1950s and 1960s emphasizes their potential for modernization and densification (BSW 2023, Meyer et al. 2023, BBSR 2016). These buildings, constructed prior to Germany's first thermal insulation ordinance in 1977, exhibit low energy efficiency and limited modernization. Despite the environmental advantages of preserving and upgrading existing structures—such as reduced embodied carbon and resource conservation—demolition and new construction often dominate decision-making. Current processes are fragmented and inefficient, impeded by uncertainties in cost estimation, technical feasibility, and stakeholder alignment. These challenges underscore the urgent need for systematic, climate-neutral approaches to managing existing building stocks.

Research Objectives

This research is part of a broader doctoral study that addresses the central question: How can decision-making processes for managing post-war building stocks be optimized

to achieve climate neutrality effectively and efficiently? While the overarching research encompasses various aspects of decision-making, this paper specifically focuses on one critical element: the role of architects in influencing and guiding these processes. The study explores the following research sub-question:

- What role do architects play in influencing and guiding decision-making processes towards sustainable and climate-conscious outcomes?

While substantial literature exists on technical retrofitting and energy efficiency, limited empirical research explores the practicalities of decision-making, particularly how stakeholders interact and navigate trade-offs among competing priorities. This study bridges that gap, offering actionable insights into the mechanisms underpinning these processes.

Methodology

The research adopts a qualitative approach, combining expert interviews and content analysis to explore:

- Stakeholder Dynamics: Identifying the roles and influences of property owners, architects, and specialist planners.
- Process Challenges: Analyzing critical decision phases and disruptions, including late technical investigations and conflicting priorities.
- Sustainability Integration: Assessing how sustainability dimensions—embodied energy, resource efficiency, and climate neutrality—are embedded in decision-making frameworks.

Theoretical Assumptions

The absence of structured frameworks for evaluating renovation, extension, or demolition options hinders effective decision-making in architectural planning. Early involvement of specialized planners is essential to mitigate inefficiencies and manage costs. While sustainability is emphasized in political and social discourse, economic and technical constraints frequently overshadow these goals. Architects, as pivotal actors, can profoundly influence sustainability outcomes through their advisory and design roles. However, their potential impact is often constrained by fragmented workflows and unclear stakeholder responsibilities.

Conclusion

Optimizing decision-making for post-war building stocks is crucial to achieving climate neutrality by 2045. Prioritizing renovation and roof extensions over demolition aligns with sustainability goals by reducing embodied carbon and conserving resources. This research contributes a framework for managing Germany's post-war architecture, advocating interdisciplinary collaboration and innovative planning as transformative actions in addressing climate and environmental challenges. By highlighting the pivotal role of architects in sustainable urban transformation, this study emphasizes the importance of planning as a proactive response to the planetary crisis.

This paper aligns with the thematic emphasis on sustainable cities and climate action, illustrating the transformative role of planning in addressing contemporary environmental challenges.

Keywords:

Climate Neutrality; Post-War Buildings; Architects' Role; Sustainable Transformation; Decision-Making Processes

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T_05 ENVIRONMENT AND CLIMATE (A) / 721**Local Level Coastal Adaptation: Evaluating Queensland's QCoast2100 Program****Author:** Aysin Dedekorkut-Howes^{None}**Corresponding Author:** a.dedekorkut@griffith.edu.au

Climate change impacts such as rising sea levels and the increasing intensity of storms and cyclones pose growing risks to Australia's lifestyle, environment, and economy. Queensland is one of the most vulnerable states to the coastal climate change impacts in Australia with the highest number of residential and light industrial buildings and the greatest value of existing road infrastructure at risk from a sea level rise. More than 80 percent of Queenslanders live on the coast. In 2016 Queensland government launched the QCoast2100 program which funds coastal local governments to prepare Coastal Hazard Adaptation Strategies (CHAS). Of the 31 coastal councils participating in Phase One of the project 28 of them produced a strategy. Prior research provided a comparative analysis of adaptation to sea-level rise and coastal flooding in all Australian states and territories; however, no such assessment at the local level exists. This project examines local level coastal adaptation through the example of QCoast2100 program. The research focuses on strategies for managing the climate change impacts in Australian coastal settlements and aims to answer the following questions: "How effective has the QCoast2100 program been in improving coastal resilience? Are the Coastal Hazard Adaptation Strategies sufficient? How can they be improved?"

These questions are answered through 47 semi-structured interviews with key stakeholders involved in strategy preparation and implementation. Interviewees include local government officers, consultants, program managers, and expert panel members who reviewed the completed strategies. The semi-structured interviews aim to understand the process through which these plans were produced, areas that can be improved as well as what is needed for their implementation.

Findings indicate that the QCoast2100 program was invaluable in putting coastal hazards on the agenda of local governments. Without the funding, technical support and guidance provided by the Local Government Association of Queensland through the program most local governments would not have been able to undertake such a task. The Strategies produced are viewed as a starting point and provide an understanding of the coastal risks and timelines. In most cases, they are used as basis for funding applications for implementation of the adaptation actions identified. Without this additional funding most local governments do not have the necessary resources to implement the strategies. Majority of the councils do not have dedicated staff for this program and lack of capacity and expertise are hampering the implementation.

Most interviewees found the initiative successful and agree that the presence of uniform guidelines and all coastal local governments undertaking it at the same time was very useful. The program has been a model for similar programs in the states of New South Wales and Victoria. A limited number of consultants worked on multiple projects across the state and were able to apply the lessons they learned from one project to the others. There was overall agreement that the produced documents got better and better with the experience of the earlier ones. The local networks formed with neighboring governments to exchange information was also found to be very valuable.

One of the challenging aspects of the strategy preparation process was public engagement. Controversial topics included climate change, managed retreat, and protection structures. Most documents avoided using the term retreat and substituted transitioning and/or repurposing. In general, the strategies do not view retreat as an urgent issue, but as something that needs to be considered in a couple of decades time. Local governments are unwilling to commit to options they cannot fund and that may prove to be unpopular with their electorates. In this regard, adaptation pathways approach provides local governments a way to broadly consider retreat without making any firm commitments.

Keywords:

Coastal adaptation; Sea level rise; Local adaptation; resilience

T_05 ENVIRONMENT AND CLIMATE (A) / 586**Addressing Synergistic Health Risks of Extreme Heat and Air Pollution Under Climate Change: A Citywide Spatial Assessment in Shanghai, China**

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Background

Amidst intensifying climate change, urban regions around the globe are experiencing more frequent and severe extreme weather events. In particular, the frequency and intensity of heatwaves have risen substantially, with the urban heat island effect further exacerbating extreme heat conditions. This escalation contributes to increasing mortality and morbidity, creating a major public health challenge worldwide. Furthermore, growing evidence indicates a strong correlation between heatwaves and elevated levels of air pollutants, notably particulate matter (PM_{2.5} and PM₁₀) and surface ozone. These dual environmental pressures, extreme heat and air pollution, pose heightened health threats. Additionally, the global onset of population ageing is expected to intensify the susceptibility of individuals to environmental exposure risks, therefore increasing the overall disease burden. Although many studies have separately investigated the health consequences of extreme heat or air pollution, comparatively fewer have focused on their combined effects, especially in terms of spatial precision for assessing compound health risks.

Purpose

This study aims to clarify the synergistic health impacts of extreme heat and air pollution within a high-density urban environment under intensifying climate change. By integrating multi-source remote sensing and health outcome data at a 1 km² spatial resolution, we aim to pinpoint critical health threshold phenomena for both temperature and pollutant concentrations and discern the socio-spatial environmental health risk disparities that emerge. Through this citywide analysis in Shanghai, we endeavor to highlight key hotspots and at-risk groups, thereby informing evidence-based, region-specific public health strategies and environmental interventions for policy makers and urban planners.

Methods

Focusing on Shanghai—a prototypical high-density urban environment—we integrated a spatial resolution of 1 km×1 km multi-source remote sensing data with health outcome datasets. We then developed an interpretable spatial machine learning model to quantify the synergistic effects of extreme temperatures and air pollution on health. Additionally, by leveraging the IPCC's Hazard-Exposure-Vulnerability assessment framework, we performed a citywide, grid-level (1 km²) health risk analysis covering multiple environmental stressors. Specifically, satellite-derived land surface temperature measurements and ground-based air quality monitoring provided spatially and temporally resolved exposure indices, while hospitalization and mortality records enabled detailed evaluations

of adverse health events. This model architecture balanced predictive accuracy with interpretability, allowing us to probe complex nonlinear interactions between heat stress and pollution levels and to achieve a spatially refined health risk assessment.

Results

Our findings reveal significant nonlinear associations and threshold effects among environmental exposures and health outcomes, suggesting that the combined influence of extreme heat and air pollution cannot be seen as merely additive. Certain temperature thresholds and pollutant concentration levels were linked to disproportionately steep rises in cardiovascular and respiratory admissions, suggesting that both the intensity and duration of exposure are critical factors driving negative health outcomes. The spatially explicit risk assessment of the dual environmental exposures revealed substantial heterogeneity in exposure to both extreme temperatures and air pollution, pinpointing several high-risk zones that exhibit pronounced vulnerabilities due to demographic and socioeconomic profiles. Specifically, areas with higher concentrations of elderly populations in urban centers, as well as those adjacent to industrial sites, experienced notably elevated risk levels. These findings underscore the importance of adopting region-specific strategies and targeted interventions, particularly for populations most susceptible to environmental stressors.

Conclusion

Our research addresses a critical gap in understanding the synergistic health risks posed by extreme heat and air pollution in the context of climate change, offering a pioneering city-scale spatial precision assessment of these compound impacts. The findings accentuate the urgency of targeted urban planning and policy measures to mitigate such risks, enhance sustainability, and promote socio-spatial justice in rapidly evolving urban environments.

Keywords:

Climate change; Multi-environmental exposure; Synergistic health risk; Spatial assessment

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T_05 ENVIRONMENT AND CLIMATE (A) / 1237

Trade-offs in Urban Planning: Insights from Coordinating Green Space Preservation and Affordable Housing in Vienna

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The global climate crisis exacerbates local environmental challenges, such as human losses, negative health impacts, and loss of biodiversity. Cities in particular are highly prone to the negative impacts of a warmer climate. While cities are highly attractive to individuals, they lack of green and blue spaces, and often have high levels of social vulnerability. In response to these challenges, the question lies how we can improve our individual and societal resilience. Nature-based solutions (NbS), such as the construction or preservation of large green spaces, green roofs, tiny forest, ponds etc., are an essential solution for cities. Especially, NbS are very attractive for different actors as they can provide various ecosystem services such as cooling corridors, improved individual well-being, and biodiversity, and are often no-regret solutions, often showing a positive cost-benefit ratio compared to grey solutions such as air conditioning. Yet, increasing urbanization and housing development are putting pressure on large-scale NbS, especially historic greenbelts. At the same time, the global housing affordability crisis continues to make the construction of affordable housing a priority. Under these prevailing economic conditions, planning for affordable housing seems to be limited to peripheral, undeveloped areas where land prices are moderate and in public hand. As a result, land-use conflicts and trade-offs in urban planning are emerging over whether to protect large, biodiverse green areas or build affordable and social housing. This study examines the case of Vienna, analyzing current perceptions, trade-offs and approaches to coordinating the competing goals of green space preservation and the provision of affordable housing. The results are based on a policy analysis of greening, planning and housing policy documents, as well as expert interviews with 20 actors from city politics and administration. Preliminary results indicate that increasing density and further provision of green spaces are perceived as potential solutions. Others, however, see trade-offs between these planning solutions as inevitable and claim they remain a challenge to policy coordination. Currently, the city's climate adaptation policy prioritizes densely built-up, overheated inner-city areas for implementing small-scale NbS, while simultaneously aiming to preserve large green areas on the outskirts to prevent further soil sealing. Despite these efforts, the city has less capacity to prioritize an affordable densification of the inner-city private housing market. Instead, Vienna's urban development target areas allocate public land on the outskirts of the city for new social housing. Yet, the majority of actors do not perceive trade-offs between green space preservation and affordable housing because they only practice in one of the two jurisdictions. This case study highlights the importance of coordinating planning policies and their respective trade-offs to address local environmental challenges effectively.

Keywords:

Policy Coordination; Trade-offs; Nature-based Solutions; Affordable Housing; Vienna

T_05 ENVIRONMENT AND CLIMATE (A) / 660

The Relationship between Climate Action Plans and Spatial Planning: The Case of Gaziantep City Center

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Climate change and urban planning exhibit a strong interplay. Achieving sustainability goals critically depends on the integration of climate action plans developed at both

national and local scales into spatial plans. Having become a party to the Kyoto Protocol (2009) and the Paris Agreement (2021), Türkiye has maintained its commitments to reduce greenhouse gas emissions and, in line with these commitments, developed national-level strategies and action plans. At the local level, 18 metropolitan municipalities have prepared their own climate action plans, thus taking an active role in combating the climate crisis.

This study examines how national-level climate action plans are reflected locally and assesses the degree of integration between local climate action plans and spatial plans, focusing on the case of Gaziantep. Gaziantep prepared its first Climate Change Action Plan in 2011, updated it in 2016, and, having signed the Covenant of Mayors in 2017, established its Sustainable Energy and Climate Action Plan (SECAP) in 2018. Subsequently, in 2021, the city joined the Green Cities Program and published the “Green City Action Plan” in the same year, articulating a vision for sustainable and resilient urban development.

An evaluation of the local plans prepared after 2011 in Gaziantep’s urban center (the districts of Şehitkamil and Şahinbey) indicates that the integration of climate action plans into spatial plans has remained limited. For instance, despite the development of renewable energy projects under SECAP, direct alignment with spatial plans has not been achieved. Moreover, the Green City Action Plan particularly underscores the lack of a long-term and holistic approach within the “Land Use” sector. This underscores the need to update local land-use plans (Master Development Plans and Implementation Development Plans) in harmony with the climate action plans.

The Green City Action Plan is divided into sectors under the headings of “water, energy, solid waste, transportation, land use, buildings, industry, and climate action.” Within the water sector, under the sub-action of “developing an integrated plan for water resources management,” projects and actions focusing on rainwater management and water reclamation are proposed to combat drought risk. In the transportation sector, the sub-action of “continuing the expansion of the rail system network,” as well as the “ecological village” sub-action under the climate action sector, both have clear links to local land-use plans (Master and Implementation Plans). In the industrial sector, the sub-action of “establishing an industrial zone for renewable energy production” includes the objective of preparing the necessary zoning and parceling plans. However, research findings indicate that these sector-specific sub-goals are not sufficiently integrated into spatial planning processes.

In conclusion, in the Gaziantep case, the relationship between local-scale climate action plans and spatial plans is not at a satisfactory level in terms of enhancing resilience to climate change and achieving sustainable urban development. It is critically important for the strategies identified in climate action plans to be concretely reflected in spatial plans of varying scales and degrees of detail in order to ensure that the urban environment becomes both sustainable and climate-resilient.

Keywords:

Sustainability; Climate Change; Climate Action Plan; Spatial Planning

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Understanding the usability of climate services –An Actor Network Theory perspective

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Climate adaptation is becoming increasingly critical in urban spatial planning as extreme weather events necessitate climate-adaptive measures. Effective planning relies on climate information to provide insight in potential climate impacts and/or the effectiveness of proposed adaptive measures. Such information is often provided by ‘climate services,’ such as maps or decision support tools, which spatial planners and other stakeholders use to guide decision-making (Vaughan et al., 2016). However, usability gaps - e.g., mismatches between user needs and provided data, or a lack of user expertise to interpret the information - limit their usability (Raaphorst et al., 2020; Lemos et al., 2012).

Recent research also highlights the role of contextual factors in shaping climate service usability. Contextual influences, such as institutional settings or competing priorities, significantly impact how stakeholders perceive and interact with these services (Findlater et al., 2021; Koers et al., 2024). However, most contemporary evaluation methods focus on human-centric perspectives, emphasizing the direct interactions between users and climate services (e.g., Vaughan & Dessai, 2014). While valuable, this approach is limited as it overlooks broader contextual influences and the positioning of climate services within wider decision-making systems (Koers et al., 2024). As a result, indirect contextual factors often remain overlooked in evaluations.

To address these limitations, we propose the use of an Actor-Network Theory (ANT) perspective. ANT views the world as a collection of interacting actors—both human and non-human—within networks that shape behaviours and outcomes (Law, 2004). Applying ANT to climate service usability evaluation shifts the focus from user-centric evaluations towards understanding usability as an intrinsic property of climate services as non-human actors. In other words, an ANT-perspective examines how climate services interact with other actors within broader networks, and in turn reveals how contextual factors influence usability. This helps to identify overlooked aspects of climate service usability by examining how human actors (e.g., planners, politicians) and non-human actors (e.g., legislation, policy documents, climate services) interact with and shape usability of the climate service. This study aims to demonstrate how integrating an ANT perspective broadens the understanding of climate service usability. By moving beyond user-centric evaluations, ANT provides a more comprehensive lens to assess the interplay of human and non-human actors within complex decision-making contexts. This results in a more nuanced understanding of usability, enabling the identification of barriers and opportunities for improving the use of climate services in practice.

For this paper, we follow and analyse a project of the municipality of Dordrecht (the Netherlands). Within this project, the municipality is utilizing a climate service to support decision-making among spatial planners, water managers, project leaders, and politicians to develop new policies for improving the climate resilience of the neighbourhood of ‘Dubbeldam’. Data collection includes interviews with stakeholders, observations during project meetings, and analysis of policy documents, agendas, and reports. Furthermore, found contextual factors are analysed following the method utilized by Koers et al. (2024). This allows for comparison with the results from this state-of-the-art overview to identify previously overlooked contextual factors that were identified with our proposed ANT-approach to show the added value of such a perspective.

Keywords:

Actor Network Theory; Climate services; Urban climate adaptation; The Netherlands

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T_05 ENVIRONMENT AND CLIMATE (A) / 1760**Nature's renaissance: rethinking brownfields through ecological regeneration**

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How can the spontaneous renaturation of brownfields contribute to sustainable urban regeneration while integrating ecological, social, and economic objectives? The study examines the potential of spontaneous renaturation in brownfields, with the purpose of valorising the ecological regeneration methodology.

The rapid deindustrialisation of the 20th century left behind a vast number of brownfield sites, profoundly reshaping urban landscapes across the world (Adams et al., 2010). Often characterised by environmental contamination and degradation, brownfields have contributed to socioeconomic decline (Mikelbank, 2008), reflecting broader demographic and planetary urban shrinkage trends. Furthermore, both human and non-human populations are impacted by their ecological degradation, which has serious health repercussions (Bambra et al., 2014). Despite these challenges, brownfields present a strategic opportunity for sustainable urban redevelopment (Jacek et al., 2022).

In line with European directives, such as the EU Soil Strategy 2030 and the EU Biodiversity Strategy 2030, brownfields have often been redeveloped to contain urban sprawl and

limit land consumption. Their transformation, however, has mainly served commercial and residential purposes (Preston et al., 2023). Nevertheless, given the ongoing global environmental crises, it is imperative to re-think these spaces as ecological resources (Graham & Healey, 2017). Land consumption and biodiversity loss, two of the main consequences of uncontrolled urban sprawl and human activities, weaken the capacity of cities to sustain resilient ecosystems and exacerbate their vulnerability. Ecological regeneration of brownfields is therefore crucial for sustainable urban planning reducing environmental impacts while fostering livable and adaptable cities.

In this context, the contribution explores how brownfields that have developed an intrinsic ecological value over time can be preserved and integrated into urban development, shaping regeneration projects in synergy with ecological preservation and fostering urban resilience. Brownfield ecological regeneration is not only a response to environmental challenges but also an opportunity to innovate urban design on a global scale (Kirkwood, 2001): classic remediation approaches are often too costly, time consuming and have high impact on the economics of the project, so much that they are themselves a constraint on the realization of transformations. Moreover, traditional remediation techniques and regeneration strategies frequently pursue invasive interventions focused solely on contaminant removal, aiming to restore an idealised “clean” condition — often neglecting subsequent urban development contexts. Rethinking these processes raises the question of whether spontaneous renaturation offers an added ecological value. Observing natural ecological evolution and regeneration in brownfields could inspire sustainable urban design strategies that reconcile city development with emergent territorial dynamics.

Through the comparative analysis of three case studies the paper analyses the motivations behind the choice of strategy and explores the environmental, social and economic reasons why it may be a preferable solution in certain circumstances. Focusing on the potential value deriving from more natural management of contaminated sites and its integration into urban policies—despite significant differences in regulations and practices internationally—the contribution does not seek to provide a universal assessment but to extrapolate the logic and potential of this type of regeneration. This investigation is part of the PE3 RETURN research project, funded by the National Recovery and Resilience Plan - Spoke TS1, Task 5.4.4 “Towards a circular metabolism for urban and metropolitan settlements”.

The selected case studies—Liberty State Park (Jersey City, USA), Gas Works Park (Seattle, USA), and La Goccia Park (Milan, Italy)—illustrate how local communities, in collaboration with urban planning initiatives, can transform brownfields into functional ecological resources. Particular attention is given to the interaction between ecological and urban needs and how these can be reconciled in degraded areas redevelopment. Recent studies suggest that spontaneous renaturation is both an environmental asset and a powerful tool for strengthening social cohesion (Graham & Healey, 2017).

Keywords:

Ecological regeneration; metabolism; biodiversity; brownfield

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The Thresholds of Urban Parks' Characteristics on Heat Mitigation Effect—Case Study of 120 Parks in Foshan, China

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In the context of the increasingly severe global environmental crisis, where the urban heat island effect is seriously eroding the ecological health of cities and threatening human well-being, it is extremely urgent to deeply explore the cooling mechanism of urban green spaces. (Farshid, 2019; Lin, 2021). Urban green spaces are crucial for alleviating urban overheating and play a vital role in achieving sustainable urban development if planned and utilized effectively (Soltanifard H, 2024). This research aims to address the following key questions: How to accurately assess the cooling capacity of urban parks in water network cities? How to determine the key factors and their thresholds that affect the cooling effect of parks? And how to formulate reasonable planning strategies based on the cooling performance of parks? This research focuses on the unique Lingnan water network cities in the southern China. Foshan, being a typically rapidly developing city in the Lingnan region, confronts representative environmental problems during its urbanization process, thus making the performance of its urban green spaces in coping with the heat island effect highly worthy of in-depth study.

This research takes 120 urban parks as example, aiming to comprehensively assess their cooling capabilities. To achieve this, four indicators are introduced: Park Cooling Area (PCA), Park cooling efficiency (PCE), Park cooling intensity (PCI), and Park cooling gradient (PCG) (Sun, 2024). Using the multi-ring buffer analysis tool in ArcGIS Pro, the surrounding area of each park is divided into 30 concentric buffers (extending to 900 meters), and the average temperature of each buffer is analyzed to comprehensively evaluate the cooling capacity of the park, with a particular focus on exploring the application of the law of diminishing marginal utility of cooling efficiency (Farshid, 2019; Lin, 2021).

The study is divided into five steps. First, the cooling performance of different park types is compared to determine the most effective park type (Chander, 2009; HEALEY, 2005). Second, the spatial landscape characteristics of urban green spaces are analyzed from three dimensions: morphology (covering park area, perimeter, landscape shape index, and normalized difference vegetation index), structure (such as water surface area ratio and blue-green space proportion) (Chen, 2014), and distribution (including the aggregation degree of ecological patches and water bodies). Thirdly, the Boosted Regression Tree (BRT) model is used to quantify the contribution of parks to reduce the land surface temperature under the combined influence of multiple environmental elements (Han, 2022). Fourthly, the marginal effect threshold of park characteristics on cooling is measured, and the nonlinear relationship between these factors and cooling benefits is elucidated (Friedmann, 2004; Zhang, 2024). Finally, the Geographically Weighted Regression (GWR) model is used to cluster the parks based on their cooling performance. The results are quite enlightening. (1) In summer, despite the significant urban heat island effect, urban parks still play a significant role in cooling. From a spatial perspective,

the cooling effect gradually weakens from the suburban green belt to the city center. (2) The key determinants of the cooling effect include park area, distance to the riverbank, and the proportion of blue-green space within the park. (3) Notably, green infrastructure exhibits threshold effects, and specific marginal values are determined for park area, normalized difference vegetation index, water surface area ratio, distance to the riverbank, and ecological patch aggregation degree. (4) These 120 parks are divided into five different categories based on their cooling-dominated factors.

This research not only enriches the theoretical understanding of the cooling role of urban green spaces but also provides practical insights for optimizing the planning, layout, and design of green infrastructure, thereby contributing to strengthening urban climate regulation and promoting sustainable urban development.

Keywords:

Urban Heat Island Effect; Urban Parks; Green Infrastructure; Cooling Mechanism

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Airscapes: Understanding Urban Air Quality Through Data-Driven Mapping

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As cities continue to face the challenges of climate change and environmental degradation, understanding the spatial variability of urban air quality is essential for fostering sustainable and resilient development. Air pollution, a critical determinant of public health and environmental well-being, is especially problematic in high-density urban environments where complex interactions between the built and natural landscape drive its dynamics (Liang & Gong 2020). Yet, traditional air quality monitoring methods often fall short, relying on sparse or elevated sensor placements that fail to capture pollution

at the “human level” (Hoek et al. 2008). This study addresses these limitations by developing a novel methodology for high-resolution spatial mapping of air quality in Songdo, South Korea, using an integrated approach that combines low-cost sensor networks (Jayaratne et al. 2020), Gaussian Mixture Models (GMMs), and Computational Fluid Dynamics (CFD) simulations.

Key pollutants, including PM_{2.5}, PM₁₀, and NO₂, are measured through a dense network of strategically deployed sensors covering diverse urban contexts such as residential zones, traffic corridors, and green spaces. Advanced spatial interpolation techniques are used to identify nuanced patterns in pollutant concentrations, while CFD simulations model the interaction between urban morphology, wind dynamics, and pollutant dispersion (Guo et al. 2021). The resulting high-resolution maps reveal localized pollution hotspots and the factors driving air quality disparities at a granular level.

Preliminary findings highlight the significant influence of urban design on air quality. For instance, dense building configurations and narrow streets can trap pollutants, creating “canyon effects” (Guo et al. 2021), whereas strategically placed green spaces and open corridors enhance airflow and reduce pollutant concentrations (Łowicki 2019). These insights underscore the critical role of urban planning in mitigating pollution exposure and improving public health outcomes.

By combining advanced computational tools with cost-effective, scalable monitoring systems, this study overcomes the limitations of traditional air quality assessment methods. The detailed maps generated provide actionable insights for policymakers and urban planners, enabling targeted interventions to mitigate air pollution and enhance urban livability. The methodology also emphasizes the importance of addressing environmental justice by identifying and alleviating pollution burdens that disproportionately affect vulnerable communities (Manisalidis et al. 2020).

This research advances the understanding of urban air pollution dynamics and provides a scalable framework that other cities can adopt to assess and manage air quality challenges. Bridging scientific innovation with practical application, the findings offer a valuable resource for creating healthier, more equitable, and more resilient urban environments.

Keywords:

Urban air; Spatial mapping; Computational Fluid Dynamics; Gaussian Mixture Models

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Urban Polarization: A Barrier to Carbon Neutrality

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Research Background

Urban and regional carbon neutrality is fundamentally a sustainability issue (Park, 2023). Carbon neutrality cannot be deemed successful if it results in economic decline or diminished social equity. Fossil fuel-based energy systems are inherently incompatible with growth models that promote sustainable development. Consequently, considerable attention has been devoted to energy transitions aimed at reducing greenhouse gas (GHG) emissions. However, the issue of social equity has received comparatively less attention than climate change adaptation agendas, such as urban hazard mitigation. Achieving carbon neutrality inevitably transforms the socioeconomic fabric of cities, which may either enhance or undermine social equity. Therefore, it is imperative to understand how urban disparities influence the pursuit of carbon neutrality.

Method

The purpose of this research is to assess the impact of intra- and inter-urban disparities on greenhouse gas emissions. A multilevel model was developed using data from metropolitan and basic local governments in South Korea. Two primary data were utilized. GHG emissions were analyzed using data from the National Greenhouse Gas Inventory Center of South Korea, while case studies were conducted using data from the Ministry of Land, Infrastructure, and Transport's Carbon Spatial Map (carbonmap.kr). The spatial information provided by the Carbon Spatial Map enabled a more detailed and nuanced multilevel analysis.

To measure urban disparities, key variables were selected, including GRDP per capita, local income tax per capita, life expectancy, the ratio of beneficiaries of national basic livelihood, and the proportion of budgets allocated to carbon neutrality initiatives. Additionally, the impact of urban spatial structures was examined through the development of the Urban Compactness Index (UCI). The UCI comprises four components: Development Density, Land Use Mix, Activity Centering, and Street Accessibility. Variables such as employment density were used for Development Density; building use diversity and job mix were applied for Land Use Mix; regional Global Moran's I was used for Activity Centering; and plot coverage ratio was employed for Street Accessibility.

Results

The analysis revealed that while the impact of urban disparities and spatial structures on per capita emissions was minimal at the basic local level (141 cities in South Korea), significant differences were observed at the metropolitan level. Regions with lower local income tax per capita and a higher ratio of beneficiaries of national basic livelihood exhibited higher per capita emissions in the building and transport sectors. Regarding urban spatial structures, higher values of Land Use Mix and Activity Centering were associated with lower per capita emissions. Intra-urban disparities were most pronounced in Seoul, Busan, and Daegu. Inter-urban disparities varied by city size; cities with populations exceeding 1 million exhibited minimal disparities, whereas small and medium-sized cities with populations under 500,000 demonstrated significantly higher per capita emissions.

Policy Implications

South Korea's legislative framework mandates carbon neutrality goals to be achieved at the basic local level. This framework emphasizes accountability at the city level to meet the nation's carbon neutrality targets. However, intra- and inter-urban disparities present significant barriers to implementing these policies. For instance, cities lacking public transportation systems face greater challenges in reducing transport-related GHG emissions compared to other municipalities. Addressing both intra- and inter-urban disparities can yield greater benefits for achieving carbon neutrality. Additionally, ensuring the maximum utility for the most disadvantaged regions aligns with the principles of sustainable development. Therefore, to achieve the national carbon neutrality goals

through urban and regional initiatives, it is essential to minimize disparities while advancing carbon neutrality policies.

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Keywords:

Carbon Neutral City, Sustainable Development, Urban Polarization

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Providing Strategies for Sustainable Cities by Comparing the Carbon Sink Benefits of Blue and Green Spaces: Evidence Based on Multiple Sources of Data

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Cities are a major source of carbon emissions, and in a time of frequent extreme weather, how to realize sustainable urban development through emission reduction and sink enhancement has a bearing on the fate of mankind globally. Urban blue-green infrastructures have outstanding carbon sink benefits and potentials and are the baseline ecological carriers for carbon sequestration and sink enhancement in cities. However, with the rapid expansion of cities, the destruction of nature by cities has led to the phenomenon of the fracture and fragmentation of blue-green infrastructures, which in turn has led to a significant reduction in their carbon sink benefits. Relevant scholars have carried out in-depth research on this issue, but the current research, on the one hand, separates blue infrastructure and green infrastructure and discusses them separately, ignoring the comprehensive benefits of blue-green infrastructure. On the other hand, the measurement of the carbon sink efficiency of blue-green infrastructure is also limited by low data precision, fuzzy measurement boundaries, and complex influencing factors, which makes it impossible to accurately identify the carbon sink efficiency of the space. Therefore, exploring scientific, high-precision carbon sink measurement methods and integrating natural elements such as water bodies and green spaces in cities is an important direction for current research.

In this study, we take blue-green infrastructure as the research object and climate suitability as the target and discuss the overall carbon sink benefit and its influencing factors under the coupling of green space, vegetation, water systems, and soil in the city in a comprehensive way. Firstly, by combining macro satellite remote sensing data and micro field research data, the limitations brought by single data are compensated, and the

scientificity and feasibility of the study are enhanced. Based on this, the spatial distribution map of carbon sink elements of blue and green infrastructures was constructed and visualized by ArcGIS. Secondly, the quantitative calculation of carbon stocks in green areas, water systems, and soils was carried out by carbon sink coefficients, and the carbon sink benefits of blue infrastructures and green infrastructures were discussed and reconciled with the score in a holistic perspective. Again, we constructed a linkage model between carbon sink benefits and blue and green infrastructure and further discussed what influences the carbon sink benefits of blue and green infrastructure. Finally, based on the above analysis, we propose optimization strategies for urban blue-green infrastructure for climate suitability objectives.

It is found that there are spatial differences in the distribution of carbon sinks of blue-green infrastructure in Nanjing's river-reading building area, and that the spatial aggregation of blue-green elements and the area of green space are the main factors affecting the carbon sink benefits. Further analysis shows that trees are the main vegetation type to enhance the carbon sink capacity. In addition, we propose optimization strategies for urban blue-green infrastructure from the levels of spatial pattern and blue-green elements and enhance the comprehensive benefits of carbon sinks by optimizing the plant communities in the space, widening the area of waterfront green space, and the reasonable ratio of blue-green space, with a view to improving the quality and efficiency of the comprehensive carbon sink benefits and ecological resilience of the city, so as to enhance the spatial climatic appropriateness and provide a solution path for the city to cope with global warming and promote the sustainability of the city. In this way, we can improve the climate suitability of the space, provide a solution path for the city to cope with global warming, and promote the sustainable development of the city.

Keywords:

Carbon sinks, blue-green infrastructure, sustainable cities, climate-resilient planning

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Climate Gentrification in Florida: Perspectives from City Officials, Housing officials and Advocates in Tampa and Miami

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“Climate gentrification” is the new turn of phrase used to highlight the disproportionate impacts of climate change on low-income populations of color. Sea level rise threatens to dramatically reshape life on the Florida coast. As waters breach the tops of sea walls and bubble up from below, they erode the risk tolerance of wealthier residents to remain on the coast as inundation becomes more permanent than a nuisance. Consequently, higher elevation neighborhoods are increasingly primed to become gentrification hotspots through speculation and permissive development incentives for migrating populations facing eventual retreat from the coast. The process of inland retreat may also lead to secondary displacement of long-term residents as the pressures of gentrification, investment and development take hold particularly in lower income communities of color. While there is growing attention to the potentials for mass migration and retreat from the coast, there is limited empirical analysis of the dynamics of displacement related to sea level rise and the planning mechanisms in place to manage impending neighborhood change in higher elevation communities.

This paper examines the planning efforts to address the risks of first order displacement from the coast related to sea level rise impacts and mitigate second order displacement in low income inland communities on higher ground. We employ a multi-staged research design to explore how major urban centers in Florida are planning for and developing policies to address the disproportionate impacts that marginalized communities are likely to experience in the face of sea level rise. The three stages of the research methodology include 1) mapping of displacement risk indicators, 2) a modified network of plans policy analysis, and 3) semi-structured interviews conducted with key resilience, housing, and planning actors in Miami and Tampa Bay regions.

This paper draws from our policy analysis and interviews with city officials, housing officials, and advocates. We find through the plan analysis there is a disconnect between resilience and environmental policies concerned about the effects of sea level rise and housing protection policies used to manage neighborhood change and prevent displacement. Likewise, our interviews show that all regions are operating in a pro-development political context and as long as property values remain high, the misalignment in timelines of developers working on short-term returns with the realities of the eventual long-term implications for these new developments on the coastlines will persist. In inland communities for each region, we find ongoing tensions between the interplay of revitalization initiatives and neighborhood preservation, where communities that receive upgrades, urban greening or flood proofing witness increasing property values and become targets for displacement of existing residents.

Local variations across the comparative cases reveal divergences in the salience of climate displacement perceptions and responses. In Miami-Dade areas that are primed for potential displacement are explicitly identified as inland communities of color which are already undergoing neighborhood change. In Tampa Bay-Pinellas, planners are in the process of understanding the vulnerabilities related to sea level rise, sources of affordable housing stock and identifying potential areas where primary and secondary displacement may occur.

This paper advocates for a more anticipatory model of planning and proactive examination of climate planning and housing policies focused on anti-displacement strategies to identify gaps in coverage and opportunities to promote greater equity and address the risks associated with first order and second order displacement.

Keywords:

Sea level rise; displacement risk; gentrification; affordable housing; Florida

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The Expansion of High-Tech Zone Development and Regional Carbon Emissions: A Synergistic Exploration of Spatial Heterogeneity and Environmental Justice

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High-tech development zones (HTDZs) play a critical role in driving economic growth and technological innovation, but their rapid development also poses significant challenges to regional carbon emissions. This study focuses on 168 HTDZs in China, aiming to explore the dynamic relationship between the expansion of development scales and regional carbon emissions. The research seeks to address two key questions: How does the development scale of HTDZs influence regional carbon emissions? And what spatial heterogeneities and environmental justice implications arise from these interactions? To answer these questions, this study adopts a comprehensive methodological approach. Data on inputs, outputs, and innovation performance were collected for each HTDZ. The entropy method was employed to construct a development scale index, providing a robust measure of HTDZ growth. Coupling coordination models were used to assess the synchronization between HTDZ development and carbon emissions, while geographically weighted regression (GWR) models were applied to identify spatially varying relationships and uncover underlying mechanisms. The findings reveal a complex and heterogeneous relationship between HTDZ development and carbon emissions. HTDZs with higher development scales often benefit from economies of scale and advanced green technologies, resulting in a relatively lighter carbon emission burden. In contrast, less developed HTDZs face disproportionate environmental risks, as their limited technological and financial capacities hinder their ability to adopt low-carbon practices. Additionally, the spatial heterogeneity analysis indicates significant regional disparities: coastal HTDZs tend to exhibit better coupling between development and emissions reduction, while inland and economically underdeveloped HTDZs struggle with higher carbon intensities. This study contributes to the literature by highlighting the dual effect of HTDZ expansion on regional sustainability. On one hand, HTDZs are engines of economic growth and innovation; on the other, they exacerbate regional disparities in carbon emission burdens. The findings underscore the need for differentiated policy interventions that account for local contexts. Specifically, policies should prioritize targeted support for underperforming HTDZs, promoting equitable access to green technologies and fostering collaborative regional governance. In conclusion, this paper proposes a framework for integrating environmental justice into sustainable planning for HTDZs, emphasizing the importance of balancing economic development with

environmental responsibility. The insights from this study provide theoretical underpinnings and practical guidance for policymakers, offering actionable strategies to advance the low-carbon transition of HTDZs and contribute to broader regional carbon neutrality goals. This research offers a valuable perspective on the intersection of urban planning, environmental economics, and climate policy, making it highly relevant to sustainable development agendas globally.

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Deep Learning-Based Building Energy Consumption Prediction Model Considering Occupant Density Using Mobile Network Big Data: A Case Study of Seoul

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In today's world, the rapidly increasing urban population and the corresponding rise in energy demand have made optimizing energy consumption in buildings a critical issue for urban planners and policymakers. Traditional energy consumption prediction models typically focus on static building features and environmental factors, yet they may not fully capture the influence of population density in the surrounding area. However, the relationship between building design, urban form, and energy consumption is complex, with user behavior playing a decisive role in energy consumption patterns (Holden & Norland, 2005). This study aims to overcome the limitations of traditional models by incorporating user density data into energy consumption prediction models through machine learning techniques, providing more accurate predictions for various building types across Seoul.

The research analyzes hourly mobile user data from 50m x 50m grid areas across Seoul to investigate the impact of fluctuations in occupant density on energy consumption. Using data from 2013 to 2023, the study integrates real-time occupant density data alongside static building features and environmental conditions into energy prediction models to improve prediction accuracy. The research proposes an activity-based building classification, recognizing the differences in usage patterns across various building types. For instance, energy consumption in residential buildings tends to increase during nighttime hours, indicating a correlation with the nighttime population. In contrast, energy consumption in commercial buildings peaks during working hours, reflecting their dependence on daytime activities. Public buildings, on the other hand, exhibit varying occupant density profiles throughout the day. These diverse density patterns are expected to contribute to more accurate energy consumption predictions.

The dataset used in the study not only reflects changes in user density throughout the day but also enables more precise predictions of building usage types and energy consumption profiles. This approach goes beyond traditional models to achieve higher accuracy in energy consumption predictions. Notably, a similar study by Diao et al. (2017) demonstrated that incorporating occupant density data significantly improved energy prediction models. In this context, the research highlights that traditional land use classifications may lead to inaccuracies in energy prediction models due to the dynamic nature of urban activities. By offering an activity-based classification system, this research proposes a more advanced method for understanding and optimizing energy consumption in urban areas. This approach aligns with Santos et al.'s (2019) work on utilizing urban mobility data in energy prediction models.

The research methodology includes the use of Long Short-Term Memory (LSTM) networks for time-series forecasting and Cluster Analysis for activity-based building classification. Additionally, regression models will be employed for statistical analysis to isolate the impact of user density on energy consumption and understand the relationships between variables. These analyses will provide a more detailed evaluation of factors such as building age, type, and environmental conditions on energy consumption.

The findings from this study are expected to contribute to more efficient and targeted

urban energy planning and policies. Accurately analyzing the impact of fluctuations in occupant density on energy consumption can provide a significant advantage in developing energy-saving strategies. Integrating dynamic human activities and user density data into energy prediction models offers an innovative approach to deep learning-based urban energy optimization. This method can enhance the efficient management of energy distribution systems and support the development of sustainable energy policies in cities.

Keywords:

Energy Consumption; Occupant Density; Deep Learning; Mobile Network Big Data

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T_05 ENVIRONMENT AND CLIMATE (A) / 947

Accounting Beyond Boundaries: Exploring consumption-based carbon approaches in Paris and Gothenburg

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As cities increasingly commit to achieving carbon neutrality, they engage in greenhouse gas (GHG) inventories to measure their emissions. These inventories are typically guided by international frameworks, such as the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC), and primarily rely on production-based accounting (PBCA). This approach focuses on emissions produced within the city boundaries. However, a growing body of literature highlights the limitations of PBCA, emphasizing that it captures only a partial view of urban emissions (Lombardi et al., 2017; Millward-Hopkins et al., 2017). These scholars support a shift towards consumption-based carbon accounting (CBCA), which considers emissions embedded in goods and services consumed within cities, regardless of their production location.

This transition is deemed critical mostly for Western cities, where production-based emissions are declining while consumption-based emissions are projected to increase

(Harris et al., 2020; Sudmant et al., 2018). Furthermore, production-based mitigation efforts might be offset by the rise in consumption emissions (Millward-Hopkins et al., 2017). Overall, CBCA is considered to offer a more comprehensive and equitable framework for addressing urban GHG emissions, incentivizing the adoption of policies that promote less carbon-intensive consumption and the reduction of carbon leakage processes (Grasso, 2016). In policy circles, international networks such as C40 are increasingly acknowledging the role of cities in global consumption emissions and advocating for their reduction.

However, existing studies predominantly address methodological issues, such as data collection and calculation techniques (Yin et al., 2022), and research on the governance and political dimensions of CBCA at the city level remains scarce. Research in this area has primarily been conducted at the national level (Grasso, 2016), leaving a critical gap in understanding the local governance conditions to account for and tackle consumption-based emissions. Therefore, this article aims to address that gap by investigating the governance and political conditions necessary for developing CBCA in cities, using Paris and Gothenburg as case studies. Both cities have established ambitious consumption-based emissions targets and corresponding strategies to address them.

The research employs a mixed-method approach, combining desk research, qualitative analysis of cities' official documents, and in-depth interviews with city officials. Preliminary findings reveal several key governance factors driving the adoption of a CBCA. First, national-scale institutions, including research organizations and government agencies, play a pivotal role by providing cities with data, standards, and methodologies. Despite some methodological struggles, these contributions enhance the legitimacy of urban efforts to address consumption-based emissions. Second, the cases demonstrate a high awareness among policymakers about the embodied emissions associated with urban consumption and their global impacts. This awareness is, in part, linked to a historic commitment to climate mitigation. Third, embedding numerical consumption-based targets within climate plans, along with the development of sector-specific roadmaps, are critical enablers to ensure the accounting and tackling of these emissions in the long term. To do so, the development of partnerships with the local private sector emerges as a key strategy to tackling emissions which are outside of municipal jurisdiction.

The study provides a valuable insight into the governance conditions required for CBCA implementation and highlights the best practices from leading cities. These findings can inform the development of CBCA approaches in cities and support institutions such as international city networks.

Keywords:

Consumption-based carbon accounting; Carbon neutrality; Climate governance; Production-based carbon accounting

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T_05 ENVIRONMENT AND CLIMATE (A) / 1468

Participatory Methods for Climate-Resilient Urban Development: Case Studies from Finnish Municipalities

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Adapting urban planning practices to mitigate and respond to the impacts of climate change is an urgent global challenge. In Finland, urban typologies and planning practices significantly influence the amount and structure of residential greenery (Leppänen et al., 2024). For instance, single-family housing areas, which dominate urban land use in many Finnish regions, present unique opportunities and challenges for integrating climate resilience into urban planning. These areas offer potential—or pose challenges—in implementing vegetation-integrated stormwater management, enhancing habitat diversity, and supporting ecological networks (Tahvonen, 2018). This article examines the role of workshops as participatory methods for fostering innovation in climate-resilient planning, with a focus on two workshops conducted in collaboration with municipal planners in the Finnish municipalities Pori and Joensuu.

Part of the Climate-Resilient Single-Family Housing Areas (ILPI) project, the workshops aimed to evaluate the applicability of three planning tools: green factor metrics, limits on impermeable surfaces, and the 3-30-300 guideline. These tools seek to balance urban densification with vegetation preservation and biodiversity enhancement. The process integrated theoretical discussions with practical site visits to small-scale housing areas, enabling participants to contextualize planning challenges and develop locally tailored solutions. Stakeholder participation in adaptation planning is often conducted through structured workshops, which organize both the content (e.g., data and information) and the process (tasks, steps, and interactions) (McEvoy et al., 2018).

Key insights from the workshops included the value of incorporating local knowledge into planning processes, particularly in identifying site-specific barriers to implementing climate-resilient measures. The collaborative format encouraged critical reflection on existing practices and co-development of innovative strategies for enhancing the ecological character of single-family housing areas. Small-scale interventions, such as permeable paving and strategic vegetation placement, emerged as practical solutions for managing stormwater, mitigating urban heat islands, and enhancing biodiversity.

Interdisciplinary collaboration proved essential. By engaging planners, environmental experts, and other stakeholders, the workshops fostered a comprehensive understanding of the interplay between urban design, environmental resilience, and community well-being. Site visits grounded theoretical discussions in tangible contexts, offering examples of the challenges and opportunities in achieving climate resilience within single-family housing areas. Field observations highlighted the predominance of impermeable surfaces, often driven by car parking requirements, at the expense of green space.

The findings suggest that workshops can serve as effective tools for creative innovation in urban planning, especially in addressing the multifaceted challenges of global warm-

ing. Field observations highlight the essential need to educate households on the importance of permeable surfaces to facilitate the transition from grey to green spaces. However, the study identifies areas for improvement, such as establishing clearer frameworks to translate workshop outcomes into actionable policies and ensuring sustained collaboration beyond workshop settings.

This article contributes to the growing research on participatory planning methods by documenting experiences from Pori and Joensuu. It provides valuable insights for practitioners and researchers aiming to integrate innovative approaches into the planning and design of single-family housing areas. Ultimately, the study highlights workshops' potential to bridge the gap between global climate goals and local planning practices, offering a replicable model for addressing critical environmental challenges.

Keywords:

Climate resilience, Participatory planning, Single-family housing, Green infrastructure, Workshops

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T_05 ENVIRONMENT AND CLIMATE (A) / 1203

The Socio-ecological Transformation: A Class Question?

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This paper revisits the class question in the context of socio-ecological transformations. More specifically, it examines how socio-spatial analysis understood as a method can better respond to both social and ecological conditions. Socio-spatial methods have been widely applied in the redesign of public spaces. They are often used as a basis for competitions, planning processes, and participatory practices. Socio-spatial analysis comes in various forms, yet it often lacks depth and thus fails to capture the multi-layered nature of social space, particularly in terms of class. To address the class dimensions of space adequately, this paper suggests to consider social relationships and practices that, in the Bourdieusian sense, are “inscribed” in specific places, yet that also reflect and reinforce existing, translocal social hierarchies (Bourdieu 1979). This deeper consideration is essential to understand who participates in planning processes, who is excluded, who uses public space and has access to it and who does not. It is also critical for understanding the social behaviors that emerge within different groups and societies. Environmental challenges, especially climate change, disproportionately affect marginalized, low-income, and vulnerable communities, which have contributed the least to the crisis yet suffer its harshest impacts.

In this light, the class question becomes even more pressing, particularly in relation to the multiple crises currently affecting spatial planning. Socio-spatial analysis offers a crucial tool for critically reflecting on and uncovering the different power relations and

structures of domination that shape spatial development. This analysis, in turn, is vital for addressing socio-economic and socio-spatial inequalities. The guiding question of the article thus becomes: What class-specific dimensions and criteria should be integrated into socio-spatial analysis to make it a critical planning tool? This question is particularly relevant in the context of socio-ecological transformation, where understanding the intersections between class and environmental change is crucial.

This paper is conceptual in nature and draws on contemporary class theories to identify criteria for reforming socio-spatial analysis understood as a method. A key example of this approach is Klaus Dörre's work, in which the relevance of both the socio-ecological crisis and class conflict is particularly prominent. By exploring these connections in different current class theories, the paper aims to eliminate the "class blindness" that often characterizes the socio-spatial analysis and design of spatial transformations.

Keywords:

class theory; socio-ecological transformation; socio-spatial analysis; critical planning tool

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Receiving Communities During COVID-19: Lessons for Climate Migration

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Increasing climate impacts motivate migration across the globe (United Nations Network on Migration 2024). Although climate-induced migration is projected to impact US communities, literature on the numbers, locational choices of the movers, and implications for receiving communities is scarce. This study, focuses on recent population mobility towards rural areas in Northeast (NE) Region in the United States and explores *whether climate-induced migration is evident in rural NE*. Based on the recent population mobility in the area, this research also uncovers *what infrastructure-related and socioeconomic outcomes can be expected in receiving communities*, if climate-induced migration pushes populations towards rural (inland) Northeast, as suggested by projections (see for example Robinson et al. 2020). It presents on-the-ground data derived from focus group participants (n=27)—local housing experts in *hotspots*, i.e., 22 rural counties of NE which experienced the highest relative numbers of in-movers between 2016-2020. The findings of this study revealed that movements were mainly driven by socioeconomic and technological changes, catalyzed by COVID-19 that pushed urbanites towards rural areas. Although communities received a limited number of newcomers from climate-impacted areas, climate was not a major motivation for movers. The influx created significant challenges for housing market, physical and social infrastructure, and socioeconomically disadvantaged groups. COVID experience opened a window of opportunity to prepare communities for just and sustainable outcomes of future mobilities driven by hazards of many kinds. It highlighted the need to understand uncertainties—e.g., timing and amount of climate migration, by focusing on the longer horizon. Receiving communities can achieve desirable outcomes if they integrate climate migration into their plans and address existing challenges to attainable/affordable housing supply, while also enhancing climate resilience, and the integration of newcomers into host communities.

Keywords:

Climate migration; COVID; rural communities; receiving communities; Northeast

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T_05 ENVIRONMENT AND CLIMATE (A) / 1500**Assessing Green Transition Initiatives: A European Comparison Perspective between Paris, Milan, and London**

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Cities stand at the frontline of the climate crisis, and are set to transform every aspect of urban life —from sustainable mobility and energy systems to food security, water management, and inclusive housing. As places of both vulnerability and innovation, they offer great potential for redefining urban living by implementing bold, forward-looking solutions. Among them, housing has emerged as a critical focus, given its role as a highly climate-exposed and energy-consuming sector. Our work lies in examining trade-offs and relationships between Environmental and Energy Policies (EEPs), and housing challenges through a comparative approach across different European contexts.

This project is conducted as part of the master's programme "Governing Ecological Transitions in Cities" at the Urban School of SciencesPo Paris, in partnership with AESOP. It is developed in collaboration with the French team working on the European research project ReHousIn, which examines the interconnections between housing, social inequalities, and urban environmental transitions.

The first objective of our research is to map EEPs alongside socio-economic indicators to assess the current state of Paris and the potential for green gentrification. The analysis focuses on three types of EEPs: (1) Nature-based Solutions, i.e., actions inspired by or modeled after nature to address urban challenges; (2) Energy Retrofitting, i.e., renovation work within residential buildings, including heating, cooling, ventilation and renewable energy integration; (3) Urban Densification, i.e., policies aimed at limiting urban sprawl and promoting sustainable urban growth. The cartographic representation of both EEPs and socio-economic indicators in Paris reveals three key trends. First, Paris is prone to green gentrification due to the lack of control on the private housing market, as rent prices are consistently higher near major green and blue spaces, even in poorer neighborhoods (map 1). Second, citizen-led initiatives are more prevalent in low-income areas (map 2), and especially in the richest areas of the poor neighborhoods. Third, wealthier dwellings, despite similar levels of energy retrofitting as social housing, have significantly higher energy consumption due to both the rebound effect (i.e., an increase in consumption due to improved energy efficiency) and a lower population density, which increases heating demands (map 3).

The second objective of the project is to analyze and compare green transition initiatives both at the national (Orléans and Sens) and European (Paris, Milan, and London) level, focusing on their impact on housing inequalities. Paris, London, and Milan, as major European cities with distinct dynamics, provide valuable case studies for understanding how

green transitions influence housing disparities across diverse contexts. At the national level, the comparison between Paris (a large city), Orléans (a mid-sized city), and Sens (a small city) sheds light on the situation in France, revealing that the impacts of green transitions vary significantly depending on the city's size and characteristics.

The third objective of the project is to develop targeted policy recommendations to promote greater equity in urban development. Our results allow us to draft some preliminary conclusions: (1) Since the implementation of NbS tends to be a strong factor of green gentrification, in the absence of new municipal instruments to control prices on the private market, increasing green coverage in the city tends to increase the eviction process of poorer working classes. (2) As the residential energy consumption seems more related to the income of dwellers than to the quality of their insulation, energy retrofitting, while being socially useful, seems insufficient to largely reduce energy consumption in Paris. As such, our work not only contributes to the academic discourse on equitable urban transitions, but also provides practical insights for policymakers to build both greener and fairer cities.

Keywords:

Housing Inequality; Green Gentrification; Energy and Environmental Policies

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T_05 ENVIRONMENT AND CLIMATE (A) / 1474

Transforming a consolidated City into a resilient City: Lessons from Lisbon's recent strategies

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Over the past decades, cities have faced increasing environmental, social, and economic challenges, which are complex to resolve not only due to its complexity but also because of the intricate chain of causes and consequences among phenomena (Hardoy and Ruete, 2013). Additionally, the adaptation of densely populated urban areas with consolidated urban fabric poses significant constraints for any strategy involving structural changes (Marchigiani & Bonfantini, 2022). Nevertheless, some cities have sought to adapt to the challenges of climate change while promoting the quality of life of the

population from an inclusive perspective, particularly for the most vulnerable communities, through a combination of intervention strategies in the city, in domains as urban mobility, green spaces, access to goods and services, etc.; and especially revaluing the local/neighborhood level.

Triggered by the AccessCity4All Project - Adapting the 15-Minute City concept to support active mobility in neighborhoods with different levels of accessibility, this paper aims to understand how a consolidated and dense city, like Lisbon (Portugal), developed an urban policy framework towards a more resilient, sustainable and inclusive city. This qualitative analysis examines recent urban planning strategies in Lisbon that promote a new city model, identifying their objectives, specific actions, goals, geographical areas of intervention, and types of interventions. According to the execution level, key findings demonstrating substantial city improvements will be identified whenever possible.

Lisbon is a paradigmatic case in the European context as a city that, in recent years, has transformed to combat growing challenges. Awarded as the European Green Capital in 2020 for its strong intervention in the area of environment and sustainability (including water management and energy efficiency, sustainable urban mobility and green areas). Beyond the environmental component, the local scale is being revalued by applying the concept of the 15-minute city, proposed by Moreno in 2016, that aims to create urban spaces where daily needs are accessible within a 15-minute walk or bike ride (Moreno, 2020; Moreno et al., 2021), continuing programs that were previously in development, such as "One Square in Each Neighbourhood", implemented to reinforce micro-centralities and upgrade public spaces for community interaction. After the emergence of Moreno's concept, one program - "There's Life in My Neighbourhood", was explicitly founded on the 15-Minute City approach, aimed to enhance neighborhood identity, quality of life, active mobility, safety, comfort in public spaces, and access to local services (Câmara Municipal de Lisboa, 2022). Consequently, beyond the commonality in the direction of various strategies towards a more resilient, sustainable, and inclusive city, and especially to accomplish the 15-minute city model, it is important to emphasize the concern for a distributive intervention throughout the city, considering the specificities and needs of each parish and community, especially those who are more socially and economically vulnerable. The combination of these strategies means that the city is committed to effective adaptation to climate change, and at the same time, seeking to increase the quality of life and well-being of the population.

In conclusion, despite the challenges that a consolidated city may face when restructuring towards a more resilient and sustainable situation, political and technical will are crucial for the implementation of the necessary strategies. In Lisbon, this intention was clearly converted into action. Furthermore, it is evident that this urban paradigm shift required a combined intervention of various domains (e.g., urban planning, transport, environment, etc.) to maximize overall outcomes, even if the outcomes of this decision will need time to manifest and be accounted for.

Keywords:

Climate Change Adaptation; 15-Minute City Concept; Sustainable Cities; Lisbon

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T_05 ENVIRONMENT AND CLIMATE (A) / 221**Analysis of the relationship between changes in greenhouse gas impacts due to changes in urban form in sub-regions of Korea****Author:** SANGWON OH¹**Co-author:** Juchul Jung ¹¹ *Department of Urban Engineering, Pusan National University***Corresponding Authors:** ohssang1006@naver.com, jcjung@pusan.ac.kr

Urban forms change as a result of economic growth and transformations aimed at maximizing economic and social benefits. In this context, the role and importance of cities that incorporate the concept of sustainable development as practical solutions to enhance the social and physical value of regions have been emphasized. As interest in sustainable and carbon-neutral cities grows due to the climate crisis, the demand for sustainable urban forms has increased. This highlights the need for growth and changes in urban spatial structures from an environmental perspective. It is therefore necessary to examine the impacts of these changes to identify environmentally favorable urban transformations. A review of previous studies reveals that understanding urban forms requires analytical methods that consider spatial similarities and interactions through density clustering and dispersion patterns among regions. However, existing methods for identifying urban centrality and measuring urban forms often fail to adequately explain spatial interactions and autocorrelation.

Moreover, most studies analyzing the effects of urban forms on greenhouse gas (GHG) emissions have focused on emissions from specific sectors as dependent variables. However, it is critical to examine the impacts of urban form changes on total energy consumption and GHG emissions. Therefore, there is a need for research that comprehensively investigates the structural and emission characteristics of cities using total regional emissions as the dependent variable, rather than emissions from specific sectors. The primary objective of this study is to examine the environmental impacts of monocentric and polycentric transformations in urban forms. Specifically, this study aims to measure urban form changes and analyze their effects on GHG emissions. The study utilizes employment data as the basis for spatial analysis to identify urban centers. To ensure detailed analysis, individual index values were used to assess urban forms and determine the degree of polycentricity. Subsequently, spatial panel regression analysis was conducted to measure the impacts of urban form changes on GHG emissions. The results of this study propose effective and efficient urban spatial structures from an environmental improvement perspective. These findings provide insights into desirable directions for environmentally-conscious urban development and management.

Keywords:

GreenHouse Gas;Urban Form;Urban Environmental impact;Spatial panel regression

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T_05 ENVIRONMENT AND CLIMATE (A) / 657

Landscape Assessment for Climate Adaptation: A Strategic Approach to the Nature Restoration Law

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Landscape assessment tools are fundamental to the Environmental Assessment framework (EIA and SIA). They enable a comprehensive evaluation of aesthetic, cultural, and ecological dimensions during the planning and implementation of plans and projects (Geneletti, 2011). The recent adoption of the Nature Restoration Law (NRL), a crucial regulatory measure aimed at reversing ecosystem degradation and safeguarding biodiversity (EP, 2024), underscores the urgency of aligning landscape assessment tools with the contemporary challenge of climate change adaptation. According to the European Commission, over 80% of European habitats are in unfavorable conditions, and many species are at risk of extinction (EEA, 2021). The NRL aims to reverse this trend through specific and measurable restoration targets, emphasizing the integration of environmental protection, socio-economic development, and cultural heritage conservation.

In this evolving context, landscape assessment tools acquire a strategic role that extends beyond identifying potential environmental impacts. They foster resilience to climate change and support the sustainable management of natural resources (Harker et al., 2021). A critical analysis of current landscape assessment methodologies within Environmental Assessment procedures provides an opportunity to evaluate how these tools can contribute to achieving the multifaceted goals of the NRL while addressing legal, environmental, and social requirements. Traditional approaches, such as visual impact analysis, perceptual surveys, and geomorphological evaluations, have proven effective in delivering valuable insights (Simensen et al., 2018). However, these tools reveal notable limitations, particularly in addressing contemporary demands such as biodiversity conservation and the integration of climate resilience (Opdam et al., 2018). Advanced quantitative methods, such as GIS-based models and ecosystem service assessments, are increasingly advocated as potential solutions to these challenges. These methods offer robust frameworks for evaluating landscape impacts (Medeiros et al., 2021).

Climate change introduces profound challenges to landscapes. These challenges manifest in ecosystem alterations, impacts on cultural landmarks, and changes to visual aesthetics, while also undermining their adaptive capacity (IPCC, 2023). Integrating climate adaptation into landscape assessment methodologies is therefore essential to ensure that projects not only minimize environmental harm but actively enhance the adaptive potential of affected areas. In this context, the deployment of landscape quality indicators emerges as a cornerstone of effective decision-making within Environmental Assessment procedures (Shames & Scherr, 2019; Reed et al., 2020). These indicators, derived from ecological, cultural, and aesthetic criteria, provide critical metrics for evaluating landscape health and functionality. Key ecological indicators include habitat connectivity, species richness, and vegetation cover, which are vital for ecosystem assessment (Finotto, 2011; Cushman et al., 2019). Cultural indicators, such as historical site preservation, local knowledge integration, and community attachment to the landscape, provide insights into the socio-cultural significance of an area (Tengberg et al., 2012; Ridding et

al., 2018). Similarly, aesthetic indicators, including visual coherence, scenic value, and landscape character, ensure that visual and perceptual aspects are integrated with ecological and cultural considerations (Ode et al., 2008; Fry et al., 2009). Combined, these indicators can form composite indices, offering a holistic perspective on landscape quality (Aad et al., 2024).

The proposal advocates for a multidimensional approach to landscape assessment that integrates ecological, cultural, and aesthetic dimensions through the development of an online platform. Aligning landscape assessment methodologies with the objectives of the NRL, therefore, represents a strategic opportunity to strengthen environmental governance and improve territorial planning. This transformative approach moves beyond conventional technical evaluations to embrace a broader socio-ecological perspective (Reed et al., 2020; Harker et al., 2021). By adapting environmental assessment tools to address current challenges and regulatory imperatives, landscape assessment can become a pivotal instrument for promoting sustainable development, enhancing climate resilience, and driving ecological restoration (Shames & Scherr, 2019; Medeiros et al., 2021).

Keywords:

Nature Restoration Law; Environmental Assessment; Climate change; Landscape; Ecosystem Services

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T_05 ENVIRONMENT AND CLIMATE (A) / 1892

Migrants' housing energy commons in Thessaloniki

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Up until recently, significant studies have been published on the living conditions of migrants in Greece, notably in state-run camps (Tazzioli 2024), rented apartments from UNHCR (United Nations High Commissioner for Refugees) programs (Kourachanis, 2022) and self-managed housing squats (Tsavdaroglou and Kaika 2022). However, the issue of energy in relation to migrants' housing appears to have been overlooked until now. Yet, energy infrastructure and energy as a social relation are critical to the daily lives of migrants and the sustainability of their houses. Concomitantly, despite several studies (Bouzarovski 2014; Chatzikonstantinou et al. 2022) on households' energy access, energy poverty and the transition to renewable energy systems in the European and Greek contexts, the energy needs and infrastructures of the migrant population remained under-researched. The few studies published on the energy needs, infrastructures and practices of migrants concern countries outside Europe pointing to a significant research gap or "darkness" (Rosenberg-Jansen, 2025), regarding the energy conditions, needs and activities of migrants in European countries. This paper addresses this research gap. Migrants' energy needs have not yet been examined, and there is no knowledge of their practices and infrastructures, which are often based on relationships of mutual support, care, and solidarity.

In this context we introduce the concept of "migrants' housing energy commons" to highlight the self-organised ways, the commoning practices and shared infrastructures that migrants invent and construct to navigate and cope with the energy landscape they encounter in their places of arrival. We approach energy as a social relationship, whose lack results in energy poverty and deprivation but that may also acquire a transformative aspect in migrants' personal lifecourses and trajectories through collective actions. At the same time, we take into account approaches related to energy commons (Bauwens et al. 2024;), migrants housing commons (Tsavdaroglou and Kaika 2022) and migrants' infrastructures (Meeus et al. 2019), to develop a framework for examining the self-constructed and self-managed housing energy infrastructural practices of migrants. The paper focuses on the case of migrants who face homelessness in Thessaloniki (Greece) and seek abandoned buildings like the wall houses in the area of Upper Town as a housing solution. The paper underscores the collective ways in which migrants repair, build, sustain and use energy as a means of covering heating, cooling, insulation, cooking and communication needs and shows that the housing commoning practices and the infrastructuring energy practices are also a means of mutual care, community building and rebuilding life trajectories.

Keywords:

housing, energy, migrants, Thessaloniki, commons

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T_05 ENVIRONMENT AND CLIMATE (A) / 1384

Overcoming systemic governance barriers for city-civil society collaborations in urban green infrastructure: Lessons from 121 German cities

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Urban green infrastructure (UGI) is widely recognised as an effective tool to address pressing environmental challenges. Successful UGI implementation depends on effective **collaboration between city administrations and civil society**, fostering democratic decision-making, aligning grassroots initiatives with municipal strategies, improving resource distribution, and ensuring more sustainable outcomes. However, city-civil society interactions remain inconsistent, often hindered by systemic governance barriers that emerge across different phases of UGI development, including idea development, implementation, and management.

Research conducted in Munich identified three major **systemic barriers** hindering city-civil society collaboration: **limited communication** at the idea development phase, **knowledge ownership** at the implementation phase, and **ambiguity in responsibility frameworks** during the management phase. Addressing these barriers requires a nuanced understanding of the governance conditions that either enable or hinder interactions, as well as the strategies needed to overcome them.

While much of the existing research on overcoming barriers to better collaboration between actors has focused on specific sizes of cities, this study advances existing research by examining governance barriers across 121 German cities through survey, complemented by semi-structured interviews with selected city representatives. By comparing municipalities of **varying sizes**, it investigates whether barriers identified in Munich persist across different governance contexts or vary based on local institutional structures. Additionally, it explores the **methods used to overcome systemic governance barriers** and examines the governance conditions that enable city-civil society interactions.

By analyzing these dynamics, the findings from Germany within this research provides practical insights for improving UGI governance and offers valuable lessons for cities facing similar challenges.

Keywords:

barriers; governance; urban green infrastructure; city-civil society collaboration

T_05 ENVIRONMENT AND CLIMATE (A) / 1390

Using Participatory GIS for Sustainable Campus Planning: Insights from GreenHack Hackathon

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Climate change is one of the most significant challenges facing humanity on a global scale. Addressing environmental degradation and sustainability challenges requires not only the efforts of governments and large corporations but also the active participation of individuals and communities in developing innovative solutions. This paper presents findings from GreenHack, a student hackathon organized at Istanbul Technical University (ITU) in December 2023, which aimed to address sustainability challenges through the use of participatory geographic information systems (PGIS). The event focused on ITU's "Green Campus" initiative, aligning with UI GreenMetric criteria, a global green-campus and environmental sustainability initiative, to design practical and user-centered solutions.

Participants developed application prototypes addressing themes such as energy efficiency, waste management, water conservation, and green space planning. The prototypes demonstrated the potential of GIS-based tools to visualize data, engage users through gamification, and provide actionable insights for sustainable campus practices. Participants developed approaches in different scopes throughout the event; they addressed sustainability goals from various angles with solutions that included both technical and social dimensions.

The hackathon itself was a participatory activity, as students, key stakeholders in the campus ecosystem, were directly involved in shaping its future. By participating in the event, students had the opportunity to voice their perspectives, share their ideas, and contribute to creating solutions that reflect their priorities and needs. This collaborative approach not only generated innovative prototypes but also fostered a sense of ownership and responsibility among participants, strengthening their connection to the campus and its sustainability goals.

This paper further explores the dual role of PGIS in GreenHack: as a technical tool for collaborative problem-solving and as a mechanism for empowering stakeholders in planning processes. The findings highlight how participatory methodologies like hackathons can bridge the gap between environmental objectives and community engagement, creating actionable and inclusive solutions. While GreenHack was designed for a university setting, its outcomes demonstrate the scalability of these approaches to broader urban contexts, offering a replicable model for addressing sustainability challenges through participatory planning.

By demonstrating the intersection of technology, community participation, and environmental planning, this study underscores the transformative potential of PGIS in delivering solutions for a sustainable future. GreenHack serves as a case study for how participatory planning can bring together global sustainability efforts with the values and needs of its stakeholders, ensuring long-term impact and relevance.

Keywords:

Campus sustainability; Climate change; Green campus; Public GIS; Hackathon

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T_05 ENVIRONMENT AND CLIMATE (A) / 35

Zero carbon, some nuisance: Exploring the viewpoints of heat pump owners and their neighbors in Groningen, Netherlands

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The domestic use of natural gas for heating is the prevalent option in the Netherlands. However, heat pumps will be mandatory in most Dutch households by 2026. Therefore, insights are needed in how citizens perceive this technology, by taking into account various societal, technological, economic, environmental, and political aspects. Our research offers a systematic investigation of the multiple viewpoints of heat pump users and their neighbors in Groningen, northern Netherlands. Using Q-methodology, we identified three distinct but interrelated and shared viewpoints: the realistic users, the hesitant neighbors and the enthusiastic advocates. All three shared viewpoints incorporate social influence and cognitive considerations, with the positive environmental impacts of heat pumps being highlighted in unison. Cognitive considerations relate mainly to technical and economic concerns. Social influence considerations often hint at the necessity of making prior agreements with the neighbors. We argue that the findings of this study can support policymakers toward the development of an integrated heat transition strategy.

Keywords:

energy transition; heat pumps; social acceptance; Q-methodology; viewpoint analysis

T_05 ENVIRONMENT AND CLIMATE (A) / 331

Spatio-temporal evolution and influencing factors of urban carbon emission efficiency in six major urban agglomerations in China

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Global warming has become one of the major challenges facing the world today, and the effective control of carbon emissions as a significant source of greenhouse gas emissions is particularly critical. As a major country in charge, the Chinese government proposed at the 75th United Nations General Assembly that carbon dioxide emissions should aim to peak by 2030 and strive to achieve carbon neutrality by 2060, demonstrating China's determination to actively address climate change. Nevertheless, in contrast to the absolute carbon emission reduction achieved by developed countries, China's current coal-based energy consumption structure is challenging to swiftly modify. Consequently, enhancing GDP-related energy efficiency has emerged as a viable option for achieving energy savings and emissions reduction. Concurrently, as the strategic support and growth pole of China's future economic development, population and industry will continue to concentrate in urban agglomerations, and it is of great importance to effectively improve urban carbon emission efficiency and build low-carbon cities to achieve the dual-carbon goal. The six major urban agglomerations in China selected for the present study are as follows: Beijing-Tianjin-Hebei, the Yangtze River Delta, the Pearl River Delta, the middle reaches of the Yangtze River, Chengdu-Chongqing, and the Central Plains urban agglomerations. Firstly, a carbon emission estimation model was constructed based on XGBoost machine learning with Bayesian optimization, and the carbon emissions of 119 cities from 2014 to 2023 were measured. Secondly, the super-efficient SBM model was

employed to measure the carbon emission efficiency, taking into account the undesirable outputs. The different characteristics of urban agglomerations in terms of their carbon emission efficiency and spatial agglomeration characteristics were then analysed. The cities were also classified into megacities, metropolis and large cities to compare the differences in carbon emission efficiency between different types of cities. The STIRPAT model was then constructed, with five indicators: population density, industrial structure, economic development, energy intensity and scientific and technological innovation, were selected as influencing factors. These factors were analysed to determine their impact on different types of cities. The results are as follows: (1) The accuracy of the carbon emission estimation model reaches 96.2%; the total carbon emissions of each urban agglomeration show an increasing trend, and the growth rate decreases after 2022, among which the total carbon emissions of the urban agglomerations in the middle reaches of the Yangtze River and the Beijing-Tianjin-Hebei urban agglomeration decrease in 2023. (2) The average carbon emission efficiency of the six major urban agglomerations shows a downward and then upward trend, with a U-shaped dynamic development during the study period. (3) The regional differences in carbon emission efficiency of the six major urban agglomerations show an increasing trend, and there are obvious spatial clustering characteristics, and the carbon emission efficiency of each type of city shows the difference characteristics of "megacities > large cities > metropolis". (4) Economic development and scientific and technological innovation have obvious promoting effects on carbon emission efficiency, and population density has a two-way promoting and inhibiting effect. Based on the conclusions of the study, appropriate emission reduction policies are proposed for different urban agglomerations and cities.

Keywords:

Urban carbon emission efficiency Urban agglomerations Influencing factors Spatio-temporal evolution

T_05 ENVIRONMENT AND CLIMATE (A) / 1555

Post carbon cities: Reducing GHG emissions using campuses as a decentralizing energy system

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As the global community intensifies efforts to mitigate climate change, the role of urban areas in reducing greenhouse gas (GHG) emissions has become increasingly critical. This paper explores the potential of university campuses to serve as decentralized energy systems that contribute to GHG reduction. Campuses, with their diverse energy demands and capacity for innovation, present unique opportunities for implementing sustainable energy solutions. By leveraging renewable energy sources, energy efficiency measures, and smart grid technologies, campuses can transition from traditional energy consumers to proactive energy producers and managers.

This study examines Torino campuses as decentralized energy systems. The findings suggest that campuses can play a pivotal role in the broader transition to post-carbon cities, serving as microcosms of sustainable urban development. The paper concludes with policy recommendations and strategies for scaling up these efforts, emphasizing the importance of collaboration between academic institutions, local governments, and the private sector in achieving long-term sustainability goals.

Keywords:

Sustainable cities; Energy; Climate change; Green campus

T_05 ENVIRONMENT AND CLIMATE (B) / 365

Bridging policy and practice: a dual approach to spatial planning for climate resilience in the Delta Po Area

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In an era marked by an escalating planetary crisis, the need to rethink spatial planning as a transformative action becomes ever more pressing. Addressing the interconnected challenges of climate change, environmental degradation, and socio-spatial inequalities requires a paradigm shift that moves beyond conventional approaches, embracing adaptive frameworks capable of fostering resilience and sustainability. Cities and regions, as both epicenters of climate impacts and laboratories for innovative solutions, offer fertile ground for the development of new methodologies. This paper proposes the “+ Methodology”, an innovative framework designed to integrate vertical and horizontal dimensions of planning to create adaptive strategies and actionable solutions. The name “+ Methodology” reflects its conceptual foundation: the vertical axis represents the analysis of multi-level policy and institutional frameworks, while the horizontal axis encompasses the operational and thematic dimensions of territorial analysis and strategic planning. This dual structure facilitates a systemic understanding of territorial vulnerabilities, ensuring that local actions align seamlessly with broader strategic goals while remaining responsive to the specific needs of each context.

The vertical approach focuses on a comprehensive examination of multi-level policies and planning frameworks, tracing their evolution from international directives to regional and local implementations. It highlights how overarching initiatives, such as the European Green Deal, provide foundational guidance for territorial priorities, encompassing themes such as decarbonization, biodiversity restoration, sustainable mobility, and the promotion of circular economies. This dimension establishes a reference framework that not only prioritizes key objectives but also ensures coherence across scales, thus laying the groundwork for targeted territorial analyses.

In parallel, the horizontal approach operationalizes the insights derived from the vertical dimension through a structured methodology comprising three key phases: analysis, diagnosis, and visioning. The process begins with an in-depth examination of the territorial context, which includes a detailed assessment of climate risks and local vulnerabilities. Building upon this diagnostic phase, a shared vision of a sustainable and resilient future is articulated, capturing the aspirations of the territory under consideration. This vision is subsequently translated into macro-objectives and actionable goals, guiding the formulation of tailored strategies designed to address specific challenges while enhancing overall territorial resilience. The horizontal approach thus ensures that solutions are not only practical and implementable but also deeply rooted in the unique characteristics of the territory.

The proposed methodology was applied to the Delta del Po, a fragile Mediterranean delta system characterized by its significant ecological value and socio-economic complexity. This region faces numerous climate-related challenges, including sea-level rise, saline intrusion, coastal erosion, and biodiversity loss. By integrating vertical policy priorities with horizontal territorial insights, the study facilitated the development of adaptive strategies to address immediate risks while fostering long-term resilience. Additionally, the case study demonstrates how locally derived solutions can inform and refine higher-level planning frameworks, creating a feedback loop that strengthens governance across multiple scales.

This research underscores the transformative potential of the proposed methodology in addressing climate change through spatial planning. By uniting policy analysis with operational planning, it provides a replicable framework capable of guiding vulnerable territories toward sustainability and resilience. The dual focus on strategic coherence and

contextual sensitivity ensures that the approach is both adaptable and scalable, making it applicable to a wide array of complex territorial settings.

Keywords:

Spatial planning, territorial resilience; climate adaptation; methodological framework; multi-level governance

T_05 ENVIRONMENT AND CLIMATE (B) / 1235

Assessing the Interplay Between Policies for Climate Change-Induced Disaster Risk and Urban Growth in the Case of Istanbul, Türkiye

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As cities continue to expand, the increasing pressures of climate change and disaster risks have revealed significant gaps in conventional growth-driven urban strategies, which often fail to address ecological balance and social equity adequately (Pelling, 2011; Ahern, 2011). Urban growth patterns, when poorly managed, can intensify vulnerability to climate hazards while neglecting critical aspects of social justice and sustainability (Anguelovski et al., 2016). In Türkiye, rapid urbanization results from infrastructure-led development and economic expansion, which continue to reshape urban areas while often prioritizing spatial growth instead of long-term climate resilience and disaster risk reduction (Balaban, 2012). Despite the existence of national and local policy frameworks addressing climate change and disaster risks, there remains a significant gap in the integration of urban growth policies with these strategies, particularly in the context of rapidly transforming metropolitan regions like Istanbul.

This study evaluates the extent to which climate change-related disaster risk policies in Istanbul, Türkiye are integrated with urban growth strategies. A dual-focus analysis explores how disaster risk policies impact urban growth patterns and how unregulated urban expansion can exacerbate climate vulnerabilities. Within the framework of ecological balance and social equity, the research critically examines the limitations of economic and physical expansion-driven growth models and their implications for urban risks. A total of seven policy documents, including four national policies (12th Development Plan, National Earthquake Strategy and Action Plan, Türkiye Disaster Risk Reduction Plan, and National Climate Change Action Plan) and three local policies (Istanbul Vision 2050 Strategy Document, Istanbul Climate Change Action Plan, and Istanbul Provincial Disaster Risk Reduction Plan), were analyzed using strategic policy analysis methodology. The analysis focused on target groups, core strategies, key performance indicators, and key measures. The research also considers how effectively these policies have been translated into practice and their real-world implications for urban risks and sustainability.

Findings reveal a significant disconnection between disaster risk management and urban growth strategies, with disaster policies predominantly emphasizing technical and structural measures while neglecting social resilience, spatial justice, inclusive governance, and implementation tools. The results highlight limited policy coherence with national frameworks emphasizing top-down control while local strategies vary in their capacity to address both spatial vulnerabilities and social inequalities. This research advocates for a paradigm shift beyond growth-driven development models by promoting a more integrated framework that prioritizes ecological sustainability and social equity in urban development and disaster risk management strategies.

Keywords:

climate change; disaster risk policies; urban growth strategies

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T_05 ENVIRONMENT AND CLIMATE (B) / 143**ALLEVIATING NEGATIVE SOCIAL CONSEQUENCES OF SUSTAINABILITY POLICIES IN URBAN AREAS**

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Sustainability policies achieved increasing attention in the last decades, with the EU green transition initiatives, especially the European Green Deal, taking a leading role (Almeida, et al, 2023). There are now a series of concrete ideas adopted and under implementation in many cities and metropolitan areas, such as greening public space, renovating buildings, avoiding to develop unbuilt areas.

However, evidence shows that there are many potential negative socio-spatial consequences of these good-willing sustainability policies (Anguelovski and Connolly, 2021). Such unwanted social externalities might include green or ecological gentrification due to the price increase following greening initiatives, renoviction following the renovation and ecological retrofitting of buildings, displacement of the original residents during densification of urban areas.

The fundamental research question (linked to the Horizon Europe project „ReHousIn”, which started in 2024 under the coordination of Metropolitan Research Institute) is: what type of public policies might alleviate such types of negative social externalities of environmental policies? The paper examines this question through critical overview of the research literature (e.g. the analysis of the newly emerging ideas of 'sufficiency' and 'stationary city', Bihouix, 2024) and carrying out a 'resilience test' examination on long term development strategies of European cities (Berlin, Brno, Budapest, Ostrava, Stuttgart, Torino, Warsaw), in discussion with urban planners of these cities.

Emerging key findings indicate special importance of metropolitan level coordination of sectoral policies. Besides restraining and modifying development ideas in each sector of development (e.g. renovation of the existing stock instead of building new, ensuring accessibility instead of increasing mobility, densification of built-up areas instead of building in greenfields), there is also an over-arching vision needed, based on a post-growth oriented strategic thinking. This can best be developed on the metropolitan level of governance, ensuring sectoral, horizontal, and vertical integration across the municipalities of the functionally connected urban area.

Keywords:

sustainability policies; ecological gentrification; renoviction; displacement, metropolitan areas

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T_05 ENVIRONMENT AND CLIMATE (B) / 1345**Adaptive Governance for Urban Heat Resilience in Xi'an's Vulnerable Communities****Author:** Xiaolin Lao¹**Co-authors:** Aura Istrate¹; Francesco Pilla¹¹ *University College Dublin***Corresponding Authors:** francesco.pilla@ucd.ie, xiaolin.lao@ucdconnect.ie, aura.istrate@ucd.ie**Background:**

Urban heat exacerbates pre-existing vulnerabilities in Xi'an's vulnerable communities, characterized by ageing infrastructure, socio-economic inequality, and a concentration of rural-to-urban migrants. These communities frequently face resource shortages, limited awareness, and insufficient institutional support to mitigate heat-related challenges, underscoring the urgent need for equitable and effective adaptation solutions. Addressing these issues requires a shift from reactive responses to proactive governance frameworks that prioritize resilience and climate justice.

Research Gap and Objective:

While urban heat has been extensively studied globally, limited research explores how adaptive governance can address its impacts in resource-constrained, rapidly urbanizing cities like Xi'an. Existing literature often focuses on technical solutions, such as carbon reduction or heat mitigation technologies, without integrating governance perspectives or addressing the systemic barriers to adaptation. Moreover, research rarely examines these challenges at the grassroots level, where vulnerabilities are most pronounced. This study investigates the impacts of urban heat on Xi'an's vulnerable communities, identifies governance barriers to grassroots adaptation, and explores how adaptive governance principles can promote equitable and sustainable community resilience.

Methodology:

From October to December 2023, 31 semi-structured interviews were conducted with stakeholders, including residents' committees, street offices, NGOs, professionals, academics, and government officials. Using purposive and snowball sampling, the interviews explored perceptions of urban heat, adaptation challenges, and opportunities for collaboration. Thematic analysis of the transcribed data was conducted using NVivo software.

Findings:

Urban heat intensifies vulnerabilities in Xi'an's vulnerable communities due to governance inefficiencies, such as policy rigidity, understaffing, and limited local autonomy. Adaptive governance principles, which balance flexibility (loose coupling) with policy alignment (tight coupling), emerged as a promising framework for addressing these challenges. Collaborative community engagement initiatives, supported by capacity-building efforts and grassroots innovation, were identified as critical mechanisms for fostering societal engagement and enhancing resilience.

Conclusion:

This study advances the theoretical understanding of adaptive governance in urban heat adaptation and offers actionable policy recommendations for addressing heat risks in Xi'an's vulnerable communities. By emphasizing equitable adaptation, stakeholder collaboration, and locally tailored initiatives, it aims to support the transition of a highly urbanized city like Xi'an toward a more resilient and sustainable urban future.

Keywords:

Adaptive governance; Bouncing-forward resilience; Vulnerable community; Community-based adaptations

T_05 ENVIRONMENT AND CLIMATE (B) / 831

Mapping Norrbotten's green transition: A preliminary study to achieve the sustainable development goals

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This study examines Norrbotten's transition towards sustainability by analyzing and mapping regional indicators in relation to the United Nations Sustainable Development Goals (SDGs). Using GIS-based spatial storytelling, it visually represents the current state of prioritized SDGs in Norrbotten, Sweden. This story map integrates data-driven insights with region-specific indicators to provide an overview of the opportunities and challenges faced by Norrbotten and its municipalities in achieving SDGs. The visualization serves as a practical tool for policymakers, enabling informed and targeted decision-making. The study begins by defining the region and conducting a population analysis to examine both current demographics and future projections. A literature review, complemented by stakeholder workshops, was undertaken to conceptualize the green transition within the context of the Norrbotten region. Central to this green transition is the county's carbon neutrality goal, which is explored through three future scenarios developed by Länsstyrelsen for carbon emissions. The study then examines greenhouse gas emissions across various sectors, encompassing the entire region and its 14 municipalities. To prioritize sustainability efforts, an online survey was distributed to urban planners across Norrbotten's municipalities, gathering insights into their SDG priorities. Based on these responses, four key SDGs—SDG 3 (Good Health and Well-being), SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 11 (Sustainable Cities and Communities)—were identified for detailed mapping and analysis. These findings were synthesized into an interactive story map, offering a comprehensive visualization of Norrbotten's progress toward sustainability. The platform was presented to stakeholders in the Norrbotten region to gather feedback and ensure its relevance to regional sustainability planning. The results demonstrate the feasibility of integrating global sustainability goals into regional contexts and highlight key areas for intervention to achieve the green transition. Here is the link to the story map: <https://arcg.is/1a491C2>

Keywords:

sustainable development goals; story map; green transition; Norrbotten county

T_05 ENVIRONMENT AND CLIMATE (B) / 430**Integrating Heat Resilience into Urban Planning: Lessons from Greater Sydney Heat Taskforce Influence on the NSW Planning System****Author:** Nicky Morrison¹**Co-authors:** Patrick Harris²; Vanita Yadav¹; Judith Bruinsma³; Kelly Gee³¹ *Western Sydney University*² *UNSW*³ *WSROC***Corresponding Authors:** nicky.morrison@westernsydney.edu.au, judith@wsroc.com.au, patrick.harris@unsw.edu.au, kelly@wsroc.com.au, vanita.yadav@westernsydney.edu.au

The intensifying impacts of climate change have underscored the need for effective governance and long-term planning to ensure heat resilience in urban environments. Greater Sydney, with its exposure to extreme heat events, presents a compelling case study in the challenges and opportunities of integrating heat resilience into urban planning. Heatwaves have long been under-recognised in planning legislation, with a fragmented approach across Greater Sydney's thirty-three Local Government Areas, often leaving heat management to ad-hoc responses rather than systematic, long-term planning (WSROC 2022).

This paper explores the role of the Greater Sydney Heat Taskforce, a multistakeholder alliance, in advocating for legislative responses to embed heat resilience into urban planning policies and frameworks (2023). Heat resilience refers to the ability of urban environments to adapt to and mitigate the impacts of extreme heat, ensuring the protection of public health, infrastructure, and vulnerable communities. This includes measures like urban cooling strategies, green spaces, and building designs that reduce heat exposure. Using evolutionary governance theory, this research examines how governance structures and planning systems evolve—or fail to evolve—in response to climate risks such as heat. Evolutionary governance theory highlights the dynamic, non-linear interactions between institutions, actors, and policy, and the role of path dependencies in shaping governance adaptations (Birchall et al., 2021).

The paper argues that the efforts of the Greater Sydney Heat Taskforce have been crucial in bringing heat resilience to the forefront of urban planning discussions, specifically in advocating for stronger legislative frameworks. Despite the importance of addressing heat resilience, there are significant barriers to embedding this issue within planning legislation, such as conflicting economic priorities and political inertia. Developers, for instance, often resist the implementation of stronger planning controls, while political and economic pressures limit the development of robust statutory frameworks.

Achieving meaningful and lasting progress requires embedding heat resilience within statutory planning controls, ensuring that governance mechanisms are institutionalised and sustainable over the long term. This paper underscores the importance of critical junctures—moments when political, economic, or social conditions create opportunities for significant governance change. These junctures can align stakeholder interests, overcome resistance, and push forward stronger legislative frameworks for long-term urban planning. However, entrenched interests and path dependencies often hinder the implementation of enduring change. The lessons from Greater Sydney's experience offer valuable insights for other jurisdictions aiming to integrate climate resilience into urban planning legislation.

Keywords:

Heat resilience; Urban planning; Climate adaptation; Governance; Planning legislation

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T_05 ENVIRONMENT AND CLIMATE (B) / 1361

Positive Energy Districts (PEDs) as a Climate-Resilient Solution for Social Housing

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Climate change significantly impacts urban areas, intensifying extreme weather events such as floods, droughts, and storms, which strain infrastructure, compromise housing, and threaten public health and livelihoods. Cities also contribute approximately 70% of global CO₂ emissions, mainly from transportation and buildings (IPCC, 2022). Addressing these challenges requires integrated strategies to reduce emissions, enhance resilience, and promote sustainable urban development.

Global frameworks such as the Paris Agreement drive nations to develop Nationally Determined Contributions (NDCs), outlining specific emissions reductions and climate actions. Similarly, regional initiatives like the European Green Deal and Sustainable Energy Action Plans (SEAPs) aim to decarbonize urban areas through integrated approaches, including Zero Energy Buildings (ZEBs), Net-Zero Energy Districts (NZEDs), and Positive Energy Districts (PEDs) (Sassenou et al., 2024). These strategies focus on scaling solutions from individual buildings to entire neighborhoods, integrating energy efficiency, renewable energy, and retrofitting to achieve carbon neutrality and net-positive energy performance (Albert-Seifried et al., 2022). PEDs also provide solutions for both new developments and the revitalization of vulnerable urban areas, fostering resilience and sustainability.

Among urban areas, social housing neighborhoods with low socioeconomic status (SES) are particularly vulnerable to climate change due to aging infrastructure, inadequate public and green spaces, and poor energy efficiency (OECD, 2022; Snep et al., 2023). These challenges amplify social and health inequities, requiring inclusive, climate-adaptive strategies to ensure equitable sustainability.

This study explores the potential of Positive Energy Districts (PEDs) to address urban sustainability and climate adaptation challenges in social housing neighborhoods. This study adopts a holistic approach by integrating buildings, public spaces, and green areas into climate-resilient, carbon-neutral frameworks. Using case studies from Portugal, it combines Nature-based Solutions (NbS) with technological and social innovations to evaluate how Positive Energy Districts (PEDs) enhance urban resilience, promote social equity, and align with Sustainable Development Goals (SDGs). The findings highlight that locally adapted PEDs can serve as scalable and equitable models for sustainable urban development, providing transformative pathways toward achieving global sustainability objectives.

Keywords:

Positive Energy Districts (PEDs), Social housing, Integrated frameworks, Case study

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T_05 ENVIRONMENT AND CLIMATE (B) / 390**Retracing Critical Energy Fictions with Youth through a Comparative Analysis of Community-Based Interventions**

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In recent years, human and more-than-human histories twine together in creating the Anthropocene, and scholars need to learn to notice more of the threads in these knots (Gan and Tsing, 2018). To address these unseen threads, participatory approaches involving pluriversal (Escobar, 2018) stakeholders in the planning process are crucial (Kambunga et al., 2024). Neglecting the essential role of youth (Nilsson, 2024) in shaping these dynamics is another unnoticed thread. This study explores community-based interventions that utilize participatory design approaches to engage youth and other stakeholders in reimagining one particular human / more-than-human relationship, namely around the issue of energy production and consumption (Murto et al., 2018).

Critical fictions have emerged as a powerful participatory tool for thought-provoking exploration and reframing existing knowledge on ecological issues such as energy production and consumption. At the side of co-creating alternative futures, these interventions address systemic inequalities and promote social justice, particularly in diverse geographies. The 'Greta Thunberg effect' has demonstrated the potential of youth participation in shaping policy discussions around climate change (Haugseth et al., 2022).

This study examines five case studies of community-based interventions by (1) Architecture Workroom Brussels, BE, (2) La Pile, BE, (3) Transisthor, BE, and (4) Architecture for All, TR, (5) Center for Spatial Justice, TR. All of which employed critical fiction strategies to engage stakeholders in their projects. Three of the projects explicitly focused on the potential of energy transitions.

The comparative analysis draws upon principles of participatory design, highlighting the significance of youth participation and critical fictions in different contexts. The paper surveys how the critical fiction approaches behind the five projects can foster creative thinking, promote ecological awareness, and address environmental issues. By inspecting how the five approaches help to retrace the complex interplay between youth and more-than-humans, this study offers (i) novel perspectives on energy systems that can inform planners, NGO practices and (local) authorities and (ii) a framework that helps these actors to codesign Critical Fictions for participatory processes with youth.

This research traverses to a growing body of work emphasizing (i) comparing frameworks for evaluating the effectiveness of community-based interventions using participatory design approaches, (ii) highlighting the importance of narrative framing in shaping stakeholder perceptions and behaviors, and (iii) underlining the importance of co-creation in addressing systemic inequalities and promoting social justice.

Keywords:

energy transitions; youth; participatory design; critical fiction; more-than-human; co-design

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T_05 ENVIRONMENT AND CLIMATE (B) / 202

Urban Water in Nationally Determined Contributions (NDCs): A Global Analysis

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Climate change significantly impacts urban water systems through rising sea levels, erratic rainfall patterns, and increased occurrences of floods and droughts. This research, conducted by the UNESCO Chair in Urban Resilience at the University of Southern Denmark in collaboration with the UNESCO Urban Water Division, analyzed the urban water focus in 194 Nationally Determined Contributions (NDCs) submitted to the UNFCCC by June 2023. The study employed a five-phase methodology to compare the national and urban water content in the NDCs, assessing the extent to which these national climate policies address urban water issues and how this aligns with the critical role of cities in climate action. This analysis emphasizes the need for multi-level governance frameworks that effectively integrate urban water perspectives and empower local actors in climate change policies.

The analysis revealed that only 15% of NDCs explicitly address water adaptation challenges within urban contexts, compared to 78% at the national level. Similarly,

only 8% of NDCs address water mitigation challenges within urban contexts, compared to 47% at the national level. This disparity highlights the limited attention given to urban-specific water challenges and underscores the need for a stronger urban focus in national climate policies.

Furthermore, the analysis revealed a significant gap in including adaptation and mitigation responses within urban contexts. While 81% of NDCs outline water adaptation responses at the national level, only 26% do so at the urban level. Similarly, 38% of NDCs outline water mitigation responses nationally, compared to 14% at the urban level. This result indicates a significant disconnect between acknowledging water-related challenges and outlining concrete actions to address them within urban areas.

The research emphasized the need for a multi-risk perspective to address interconnected water-related hazards, such as floods and droughts, whose interplay is increasing due to climate change. For example, while 73% of NDCs identify drought as a climate hazard nationally, only 7% do so at the urban level.

Moreover, the analysis highlights the need to learn from best practices observed in countries such as Nigeria, Myanmar, Chad, and the Central African Republic, which comprehensively address urban water challenges and responses for both mitigation and adaptation.

To address these gaps, the study recommends: 1) strengthening the urban water focus of NDCs, including the identification of challenges and responses for both mitigation and adaptation, as well as climate hazards; 2) enhancing the identification and alignment of urban water challenges and responses, ensuring coherence between national and urban levels in relation to water provisions; 3) improving the understanding of climate hazards related to urban water, particularly from a multi-hazard perspective; 4) expanding the inclusion of exposure and vulnerability to water hazards in NDCs at both national and urban levels; 5) increasing the focus on mitigation challenges and responses for urban water within NDCs; 6) maintaining and enhancing the focus on adaptation challenges and responses for urban water within NDCs; 7) integrating adaptation and mitigation actions for urban water within all NDCs to avoid negative rebound effects; and 8) strengthening the identification of urban water challenges within NDCs for both mitigation and adaptation.

In conclusion, this study provides crucial insights for policymakers and urban planners to enhance urban water resilience and effectively contribute to the goals of the Paris Agreement and the Sustainable Development Goals. By prioritizing urban water considerations in national climate policies, countries can better address the implications of water-related climate challenges on urban ecosystems and transboundary resources.

Keywords:

Urban water; Climate Change; Nationally Determined Contributions (NDCs); Paris Agreement

T_05 ENVIRONMENT AND CLIMATE (B) / 1534

Navigating estuaries in a changing climate through collaboration? Insights from a comparative study of the Scheldt and the Elbe

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Estuaries are dynamic and contested spaces of high environmental, economic and social relevance in Europe and worldwide. Over decades, offshore port locations have

been developed in estuarine regions, creating strong economic dependencies at the national level, such as the ports of Antwerp and Hamburg. In addition to unregulated economic growth in these multifaceted spaces, estuaries face increasing pressures from competing use conflicts and growing impacts of climate-induced environmental change. These developments have led to conflicts among estuarine actors and stakeholders due to competing interests such as shipping, coastal protection, renewable energy development, agriculture, housing, ecosystem preservation, and recreation. Collaborative governance regimes have emerged as an approach to foster multi-stakeholder engagement in pursuit of overarching goals, such as the sustainable development of these sensible estuarine regions. This paper presents a comparative analysis of two examples of collaborative estuary governance regimes - the Schelderaad (Scheldt) and Forum Tideelbe (Elbe) - applying a conceptual lens of collaborative governance. The findings highlight that collaboration in these regions presents both challenges and opportunities, depending on the level of stakeholder engagement. Key factors influencing the success of these governance arrangements include stakeholder motivation, leadership, dealing with (lack of) knowledge, building and losing trust, shared goals and visions, and long-term commitment. Initial positive responses to environmental contexts underline the potential of collaboration as an effective governance instrument. However, the success of such initiatives depends on the sustained commitment of all stakeholders and the implementation of collaborative recommendations within (trans-)national decision-making structures.

Keywords:

estuaries, estuary governance, collaborative estuary governance, sustainable development

T_05 ENVIRONMENT AND CLIMATE (B) / 377

From pilot to paradigm: A call for entrepreneurial planning to scale-up the implementation of nature-based solutions

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As extreme weather events are becoming more common, the urgency to transform cities worldwide to become more resilient and adaptive is steadily increasing. Both in literature and practice nature-based solutions (NBS) have been identified as a key approach to making cities more adaptive, as they offer multiple co-benefits such as recreation, biodiversity, aesthetic qualities, and health improvement in often dense urban neighborhoods. However, their implementation remains slow and mostly limited to urban experimentation or pilot projects, while the need to scale-up NBS is enormous. In this contribution we ask what kind of planning is needed to accelerate the uptake of nature based solutions in adaptation plans. Spatial planning has repeatedly been identified as a key tool to govern urban adaptation to climate change in an urban context. Yet, especially in the West, spatial planning has often been reduced to mechanisms of control or prevention based on policy, codes and/or regulation, requiring private initiatives to lead urban transformations. This reliance on private initiatives to drive urban transformation has rendered spatial planning more 'passive' than 'active' and less oriented toward implementation.

Our research is based on the results of the FWO (Research Foundation Flanders) funded research project 'InnoFiNS' on planning and financing NBS in four Flemish cities (the northern region of Belgium). This contribution focuses on the cities of Genk and Antwerp

specifically, as both have developed spatial visions related to ‘water strategies’ based on NBS to become more adaptive, and both are now focusing on upscaling implementation. Despite both cities working in a context of austerity, they have each developed strategies to acquire resources, expand collaborative partnerships (both public and private), and seize opportunities to maximize implementation. Additionally, spatial planners involved in both cities are continuously expanding their knowledge base, both within partnerships and through learning-by-doing.

In conclusion, we argue that accelerating the adoption and implementation of NBS requires cities to adopt more proactive and entrepreneurial planning approaches. Developing climate-adaptive cities necessitates innovative transformations of the urban landscape-infrastructure layer. Current project-based practices, in which NBS development is negotiated as part of private developments, alongside ‘passive planning,’ are no longer sufficient.

Keywords:

Climate change adaptation, Nature-based solutions, urban planning, urban intrapreneurialism

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T_05 ENVIRONMENT AND CLIMATE (B) / 345

Exploring Low-Carbon Urban Development at the Plot Scale: A Study of Carbon Emission Mechanisms and Empirical Exploration of Micro-Renovation for Emission Reduction

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In the context of global efforts to address climate change, cities, as the core spatial carriers of human activities, bear significant responsibility for emission reductions. Urban carbon emissions account for more than 70% of global emissions, and with the acceleration of urbanization, population density and urban expansion have further driven the growth of carbon emissions (Shi et al., 2016). How to optimize urban spatial elements (such as building density, land use, etc.) to reduce carbon emissions has become a critical issue that needs to be addressed. Existing research has primarily focused on carbon emission analysis at the city and urban agglomeration scale (Zhang et al., 2017), while studies on carbon emission mechanisms at the internal urban scale, especially at the plot level, are relatively scarce. Given that national planning is often based on land plots as the basic unit, it is of practical significance to develop low-carbon planning strategies at this scale. Moreover, most studies rely on model results to provide low-carbon recommendations (Hurlimann et al., 2021; Woodruff et al., 2022), lacking quantitative assessments based on actual plots and failing to verify the actual emission reduction effects of low-carbon strategies. Therefore, this study focuses on the micro-scale of urban plots, exploring the mechanisms between urban elements and carbon emissions, and provides guidance for low-carbon urban construction through practical low-carbon micro-renovation and effect assessment.

This study focuses on the central urban area of Nanjing, China. Using global 1 km carbon emission grid data from the Open-Data Inventory for Anthropogenic Carbon dioxide (ODIAC) and multi-source big data, the spatial-temporal evolution of urban land carbon emissions from 2000 to 2022 is analyzed. Combining literature review and planning perspectives, the study divides the influencing factors of urban land carbon emissions into three categories: functional attributes, spatial form, and carrying capacity. Using the Multiscale Geographically Weighted Regression (MGWR) model and Geo Detector model, the study reveals the mechanisms and interaction effects between urban elements and carbon emission intensity. The results show that the carbon emissions in Nanjing's central urban area have experienced three stages: expansion (2000-2010), stability (2011-2017), and contraction (2018-2022). The impact of functional attributes, spatial form, and carrying capacity on carbon emission intensity has significant spatial heterogeneity, with carrying capacity factors contributing the most to the spatial differentiation of carbon emissions. In addition, about 60% of the influencing factors show synergistic effects, indicating that carbon reduction planning should consider the interactions between elements to accurately identify carbon emission driving mechanisms and propose low-carbon planning strategies suitable for the micro-scale of urban plots.

To verify the practical effects of the theoretical model, the study implements a low-carbon micro-renovation plan for an actual plot in the Liuhe District of Nanjing and conducts a quantitative carbon emission assessment. The results show that the annual carbon emission intensity has decreased from 6.96 kg/m² to 6.38 kg/m² (an 8.38% reduction), and the total annual carbon emissions have dropped from 1827.33 tons to 1674.20 tons (a reduction of 153 tons). This result validates the significant effect of the low-carbon micro-renovation strategy in reducing both carbon emission intensity and total emissions, further demonstrating the important role of plot-level low-carbon planning in urban emission reduction.

This study further emphasizes the core role of urban planning in low-carbon city construction by demonstrating that comprehensive carbon reduction strategies at the micro-plot scale can effectively lower urban land carbon emission intensity, thereby providing strong support for achieving low-carbon city goals. The effort proposes an actionable low-carbon construction spatial paradigm and stresses that future urban planning must promote sustainable urban development through multi-dimensional, multi-scale collaborative optimization.

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Keywords:

Carbon emissions; Micro perspective; Multiscale Geographic Weighted Regression; Low-carbon micro-renovation

T_05 ENVIRONMENT AND CLIMATE (B) / 1429

Green inequalities and Public space deprivation: emerging patterns and new forms of polarization in the case study of Palermo.

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This paper articulates a reflection on the intersection between socio-economic inequalities, spatial segregation, and environmental justice in cities focusing on green inequalities and public space. Urban green plays a dual role: providing essential ecosystem services and mitigating climate risks, while also serving as a key component of public space. Green deprivation can therefore impoverish public space, undermining its role in fostering social interaction and mutual recognition, and limiting the ability to exercise the right to the city.

In contemporary cities, green inequalities - both in accessibility and distribution - interact with rising socio-economic inequalities, with spatial complex patterns of intersectional exclusion and polarization. These dynamics challenge the conventional center-periphery model, revealing more intricate spatial configurations, and consequently demanding new analytical and interpretative frameworks.

In this paper, based on the case study of Palermo (Italy), we describe an approach based on quantitative data analysis - including remote sensing and GIS data - and qualitative research, to map green inequalities and identify their correlation with specific urban morphologies and urban growth processes, as well as with socio-economic factors. In particular, the study investigates the distribution and accessibility of various types of urban green spaces - i.e., urban parks, local gardens, urban tree canopy - distinguishing between public and non-public domains and examines their interplay with socio-economic indicators of inequality. By mapping these relationships spatially, the analysis seeks to reflect on the relation between green deprivation and the quality and inclusiveness of public space, revealing the role of environmental inequalities in fostering exclusionary dynamics.

The study, part of the research project "Mapping the New Spatial Inequalities Within Southern European Cities" funded by the Italian Ministry of University, shows that the geography of green inequalities in Palermo can be described with more granular patterns, rooted in similar morphological and socio-economic conditions. Nevertheless, findings reveal that there is no linear correlation between wealth and accessibility to green public spaces, with high levels of deprivation observed even in high-income contexts. This can lead to processes of retreat into private spaces or collective, pseudo-public spaces, which ultimately undermine the ability of public spaces to serve as arenas for interaction among diverse social groups. Findings emphasize the need for context-specific policies and strategies to tackle the intertwined dynamics of public space, social polarization, and environmental inequalities.

Keywords:

Green inequalities; environmental justice; public space; Southern-european cities

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T.05 ENVIRONMENT AND CLIMATE (B) / 441**Urban Form Shapes Bird Community: Insights from the green capital of Europe 2024**

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The anthropogenic activity resulting from urbanization has significantly contributed to biodiversity loss (Das et al., 2024) and part of this transformation involves buildings, streets, and sidewalks. Urban biodiversity studies frequently investigate the relationship between the degree of urbanization and its effects on species (Yang et al., 2023). Particular attention has been given to the role of green spaces in maintaining biodiversity within cities (Winardi et al., 2023), as well as to the ways birds respond to various landscape features in urban contexts (Cristaldi et al., 2023). However, the influence of other urban elements, such as the built environment itself, remains less understood.

There remains a lack of understanding regarding the specific effects of urban characteristics, such as building typologies, age, or façade composition, on biodiversity. While some studies have broadly examined the relationship between urbanization and species diversity, they often overlook the finer-scale attributes of urban environments that may play a critical role in shaping biodiversity patterns. Moreover, the spatial arrangement and connectivity of these urban features may determine the availability of nesting sites and feeding options. Previous studies have yet to comprehensively assess how different urban configurations—beyond generalized classifications of urban and non-urban spaces—affect the capacity of cities to sustain and promote flora and fauna (Flégeau et al., 2021).

This study highlights the importance of incorporating biodiversity considerations into urban planning, examining how diverse urban structures can support bird populations and contribute to the resilience of urban ecosystems. Specifically, it investigates whether significant differences exist in species richness and individual abundance across three urban configurations: historic centres, open blocks, and closed blocks. The research was conducted in Valencia, Spain, utilizing urban composition data from open-access

platforms and bird data from a citizen science program.

By emphasizing the ecological implications of urban development and advocating for biodiversity-friendly measures, this study contributes to the understanding of how urban planning can promote conservation and mitigate biodiversity loss in urban landscapes. It provides critical insights into how specific urban configurations, such as historic centres with their unique architectural elements, as well as open block and closed block layouts, differ in their capacity to support avian biodiversity. The findings highlight not only the role of urban structures in providing habitat opportunities but also their potential to foster ecological resilience in cities facing increasing pressures from urban expansion.

Keywords:

biodiversity; urban birds, landscape, urbanization, citizen science.

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T_05 ENVIRONMENT AND CLIMATE (B) / 355

The Impact of Urban Compactness on the Urban Heat Island Effect - Evidence from 119 Cities in China

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In recent years, the ongoing phenomenon of global warming and the frequent occurrence of extreme and unusual weather events have posed significant challenges to the human living environment and public health. Among these challenges, the issue of the urban heat environment has garnered particular attention, as evidenced by the prominence of the urban heat island (UHI) effect in research and discourse. The urban spatial morphology is indicative of the patterns of human production and living activities. These activities can exert an influence on the spatial configuration of land cover and land use, thereby affecting the intensity of the UHI effect (Xian et al., 2021). Existing studies have predominantly focused on the influence of urban micro-region morphology on local climate (Yang et al., 2021), employing district morphology as the primary driver to explain the urban thermal environment. The spatial clustering of thermal clusters (compact hot areas) has been shown to significantly increase the intensity of UHI (Atri et al., 2021). The compact city concept, which is prevalent in China, has further intensified the agglomeration of human activities within cities, resulting in larger urban thermal clusters. Therefore, it is crucial to explore the impact of urban compact morphology on UHI from a more

macro perspective. However, there is a lack of compactness-focused explorations in existing studies, and how UHI responds to various urban compactness patterns remains poorly understood. In this study, we selected 119 cities across six major urban agglomerations in China as our research sites. We employed the city clustering algorithm to delineate the urban cluster boundaries and determined the UHI footprint based on the spillover effect of UHI (Liu et al., 2020), to evaluate and analyse the intensity and the spatial distribution characteristics of average SUHI of July in 2014, 2020, 2023 and 2023. Furthermore, urban compactness was measured in terms of the centrality, Landscape Shape Index (LSI), Aggregation Index (AI) and cohesion of urban cluster, the centrality of population and the centrality of green space. By employing two regression models, Random Forest and Geographical Weighted Random Forest, and the Shapley Additive Explanation method, the drivers of SUHI and their spatial heterogeneity were analyzed. The study has the following main findings: (1) The average SUHI exhibited a relatively smooth change in each urban agglomeration during the study period, while their spatial distributions reflected distinct climate-driven patterns, and the SUHI of cities in the subtropical zone was significantly higher than that in other regions; (2) Except for the centrality of population and the LSI and cohesion of urban cluster, the remainder of the urban compactness indicators have significant impacts on SUHI. The increase in AI of urban cluster will evidently enhance SUHI, while the increase in centrality of urban cluster and green space can effectively alleviate SUHI, but the alleviation effect will diminished once a threshold value is exceeded. (3) The result demonstrates substantial spatial heterogeneity in the relationship between urban compactness indicators and SUHI. The AI and centrality of urban cluster in the southwestern cities have a stronger enhancement effect on SUHI, the centrality of green space in the central cities has a stronger mitigating effect on SUHI, and all indicators in the eastern cities have a weaker effect on SUHI. The results provide effective targeted heat-adaptive compact development strategies for cities in different regions.

Keywords:

Surface Urban Heat Island; Urban Compactness; Geographical Weighted Random Forest

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T_05 ENVIRONMENT AND CLIMATE (B) / 858

Towards a better integration of urban agriculture into urban planning for healthier cities. Results from a systematic review

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Integrating health issues into planning and urban development is becoming urgent (UN-Habitat and WHO; 2023) in this context of concurrent crises and climate change. It is about understanding how to minimize the exposure of populations to risk factors (pollutants, social isolation, etc.) while maximizing exposure to protective factors (practice of physical activities, access to green spaces, food security etc.). Through its multifunctionality and diversity, urban agriculture is likely to act on several health determinants (well-being, physical activity, diversified diet, job creation) (Audate et al., 2019) by responding to major challenges (food supply, sustainable development, social cohesion) as well as climate change challenges (urban heat island, food insecurity) of contemporary cities (Pradhan et al., 2024).

This contribution aims to gain an understanding of the academic literature which explores the links between planning, health and urban agriculture. In order to do this, we undertake a systematic review of the literature based on PICO protocol (Eriksen and Frandsen, 2018) including peer-reviewed articles demonstrating that urban agriculture has one or more effects on human health or its determinants using qualitative and/or quantitative analyses. We have selected scientific articles published in English up to December 2024 and referenced by PubMed and ScienceDirect. Starting from an in-depth reading of 98 articles selected out of the 1026 identified, some findings could be addressed to planning. Almost two-thirds of the articles were published since the covid health crisis, showing how these topics have had a renewed interest. Most of the studies report case studies revealing concentration on studies set in certain geographical areas (United States and Europe) or concerning few forms of urban agriculture (family and community gardens).

Ours first results show that urban agriculture is a practice that can contribute significantly to urban sustainability and population well-being, but also lead to some risks that should not be underestimated. We observed that the risk factors (pollutants, social isolation, exclusion, etc.) and protective factors (physical activity, healthy eating) associated with urban agriculture vary according to the forms (family or shared gardens, peri-urban farms, indoor farms, etc.), the levels of influence (individuals, households, neighborhoods), the types of actors (communities, project leaders, city dwellers, socio-economic partners), the spatial scales (plots, projects, neighborhoods, territories) and temporal scales (project design, implementation, operation). Our literature review also illustrates the prominence of certain approaches and determinants of health (pollution, food supply, nature-based solution), in contrast to others subjects and population (urban agriculture mobilizations, disadvantaged groups) that are more original, but less studied (gentrification, environmental justice).

Finally, based on those results we operate a first attempt to associate the constitutive elements of urban agriculture (types, scale, actors, etc.) with the determinants of health to provide planning guidance. We will also be able to show at which scales it seems more relevant to develop policies to promote urban agriculture.

Keywords:

urban agriculture; healthier cities; health determinants; urban planning; climate change

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T_05 ENVIRONMENT AND CLIMATE (B) / 1467**Waterfront Transformations in Danish Port Cities: Urban Regeneration and Climate Adaptation****Author:** Alberto Innocenti¹**Co-author:** Martin Valinger²¹ *University of Southern Denmark*² *University of Ljubljana***Corresponding Authors:** alinn@iti.sdu.dk, mv6442@student.uni-lj.si

Since the late 20th century, coastal cities worldwide have initiated efforts to regenerate and redevelop their waterfronts. This was driven by shifts in the maritime industry, particularly the rise of containerization, which left many former industrial and port areas characterized by underutilized land and infrastructure (Bruttomesso, 2001; Girard et al., 2014; Hein, 2016). In response, major port cities have leveraged these changes to improve their environmental conditions and create more livable urban spaces (Carta and Ronsivalle, 2016).

In recent decades, European port cities have emerged as key examples of waterfront transformations, implementing solutions that prioritize improved livability, water quality enhancement, and climate responsiveness (Smith and Ferrari, 2012). This paper conducts a spatial planning analysis of five case studies in Denmark to compare and identify the urban planning and design solutions that contribute to higher urban resilience.

The research highlights how Danish port cities have enhanced urban livability by transforming them waterfronts into vibrant urban spaces that integrate residential, commercial, and recreational functions. The findings also indicate that some ports have actively pursued strategies to enhance environmental conditions and water quality, including measures to address sedimentation of pollutants and relocation of port activities away from densely populated urban areas. In terms of climate actions, Danish ports are also aligning the city's climate adaptation strategies where possible, while developing various design solutions to mitigate the risks of sea-level rise and storm surges. By analyzing these case studies, the paper aims to provide insights into the intersections of urban regeneration and climate adaptation in Danish port cities, offering valuable lessons for port cities around the world striving to improve their resilience and livability.

Keywords:

Port-cities; climate adaptation; urban regeneration; resilience

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T_05 ENVIRONMENT AND CLIMATE (B) / 1669**Exploring Two Interpretative Models of Eco-Cities in The United Arab Emirates: Masdar City and The Sustainable City Dubai****Author:** Marco CARLOTTI¹¹ *Sorbonne Université, Médiations - Sciences des lieux, sciences des liens, F-75006 Paris, France***Corresponding Author:** marco.carlotti@etu.sorbonne-universite.fr

Since the early 2000s, a new paradigm has emerged focused on the creation of eco-cities (Nguyen & Vu, 2023), positioning them as one of the three models of the future city alongside the smart city and the knowledge-based city (Ingallina, 2019). As an umbrella concept encompassing various types of cities—such as sustainable cities, green cities, and others (Jabareen, 2006)—the development of eco-cities is seen as an appropriate response to the challenges of urbanization, aiming for greater urban sustainability in a world where 68% of the population is predicted to live in urban areas by 2050 (United Nations, 2018). As the name suggests, eco-cities seek to achieve urban sustainability through multiple solutions addressing environmental, socio-economic, and cultural branding dimensions, among others (Joss, 2011). However, despite their promising goals, there is a lack of consensus around this concept in the scientific literature, as well as in the implementation of numerous urban projects labeled as such. Priorities and strategies vary significantly depending on the regional context and the environment in which the project is situated (Rapoport, 2014). This has led to diverse interpretations of the eco-city model, referred to here as “interpretative models,” where project stakeholders shape and create eco-cities in their own image—reflecting varying urban, architectural, and socio-economic approaches to sustainability.

In this context, the United Arab Emirates (UAE) provide a fertile ground for study, as they host the development of different interpretative models of eco-cities, two of which are highlighted in this article: Masdar City in Abu Dhabi and The Sustainable City in Dubai. Developed at different times, these projects share common goals centered on sustainable development (social, economic, and environmental) but also illustrate contrasting visions specifically adapted to the challenging Emirati context—characterized by oil dependency, car dependency, extreme temperatures, and other significant challenges. On one hand, Masdar City focuses on advanced technologies, renewable energy, and net-zero ambitions to position itself as a global hub for businesses, innovation and cutting-edge sustainability solutions. On the other hand, The Sustainable City Dubai adopts a community-centric approach, emphasizing resource efficiency, green living, and social cohesion. It also aims to be a scalable and replicable working model, serving as a global benchmark and framework for achieving net zero emissions by 2050.

Using an inductive methodology that combines on-site observations, interviews with project stakeholders, and analysis of secondary data (press, brochures, reports), this study examines these models. By juxtaposing these interpretative models, the study highlights two distinct visions of eco-cities, underscoring the importance of contextual adaptability and multi-dimensional approaches in addressing the complex challenges of urban sustainability in arid environments and beyond. This research contributes to a deeper understanding of how eco-cities can serve as testing grounds for new solutions, offering valuable insights for policymakers, urban planners, and researchers.

Keywords:

eco-city ; UAE ; Masdar City ; The Sustainable City

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T.05 ENVIRONMENT AND CLIMATE (B) / 1631

Life BEEadapt project: climate risk assessment for pollinators. An ecosystem services and collaborative governance approach

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Climate change represents a critical global issue for urban, periurban, agricultural, and natural areas, where significant alterations to ecosystems and habitats are occurring. According to the European Pollinator Initiative (EC, 2018), approximately 80% of crop and wild plant species in the EU depend, at least in part, on animal pollination. In this context, the Mediterranean basin is experiencing rising temperatures, prolonged drought periods, and extreme weather events, which affect both the phenology of plants and, consequently, the feeding opportunities for wild pollinators and the survival of these pollinators themselves.

This contribution presents the methodological framework of the Life 'BEEadapt' project, which links the ecosystem services provided by pollinators with climate change adaptation measures in urban, periurban, and rural areas. The project defines a collaborative governance framework for implementing pollinator-oriented solutions, alongside forms of cooperation between institutions, private entities, and associations for territorial protection.

The project includes applied experimentation in four different Italian territorial contexts: Parco Nazionale dell'Appennino Tosco-Emiliano, Riserva Naturale Montagna di Torricchio, the Agro Pontino, and the Protected Areas of RomaNatura. The selection of these case studies has enabled the analysis and comparison of very different territories, not only in terms of climatic, morphological, habitat, and agricultural characteristics but also due to the variety of key actors and stakeholders involved in the collaborative governance process.

This paper also presents the first results of the Climate Risk and Vulnerability Assessment, developed through the risk impact chain tool, based on the definition and conceptual framework of the IPCC AR5 (Hagenlocher et al., 2014; GIZ and EURAC, 2017), structured around the interaction of three main elements:

1. Hazard, which considers the effects of climate change, such as rising temperatures and drought, which alter ecosystems and resources. In our case, the global climate models used include temperature, precipitation, and extreme weather events. These

integrate historical data (1970-2000) and CMIP6 climate projections (Eyring et al., 2016), based on Shared Socioeconomic Pathways: SSP1-2.6 (low emissions, <2°C) and SSP5-8.5 (high emissions, fossil fuel use).

2. Exposure, which refers to the presence of populations, infrastructure, ecosystems, or economic assets exposed to the dangers of climate change. In our case, the exposed subjects are agricultural companies in the area and the pollinator species (Lepidoptera and Apoidea). The data used comes from the 2020 Agricultural Census of ISTAT (ISTAT, 2021) and species richness models.

3. Vulnerability, which measures the ability of a system to withstand and adapt to climate impacts. In our case, data on the presence and vegetative vigour of flora (NDVI Index) (Rouse et al., 1974), environmental mosaic heterogeneity (RAO Index) (Rao, 1982), presence of green infrastructure and ecological corridors (Copernicus Small Woody Features) (ESA, 2018), and the suitability of the territory for pollinators (LC classes) were combined.

To obtain an overall risk assessment, the three analysed components were integrated using GIS tools, allowing for a coherent and homogeneous spatial representation. This approach enabled the identification of the most at risk areas of losing ecosystem services of pollination in each case study, providing a foundation for the analysis and planning of targeted interventions.

The results of the BEEadapt project aim to initiate a first consideration about the role that an ecosystem services-based approach can play in supporting governance and the implementation of climate change adaptation policies and strategies.

Keywords:

Climate Change; Pollinators; Ecosystem Services; Collaborative Governance; Risk Assessment

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T_05 ENVIRONMENT AND CLIMATE (B) / 1660

Fostering Resilient and Healthy Cities: MAINCODE Urban Climate Shelters as Cooling Demonstration Projects

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Climate change is significantly increasing the frequency and intensity of extreme heat events, posing severe risks to health. According to the Lancet Countdown (2023), heat-related deaths among the elderly have risen by approximately 85% in recent years. Additionally, a recent study published in *Nature* estimates that, without effective mitigation, extreme temperatures could result in an additional 2.3 million deaths in European cities by the end of the century (Masselot et al., 2025). COP29 has emphasized that “health is the argument for climate action,” highlighting the urgent need to prioritize health in climate adaptation strategies.

The critical link between climate change and health is one of the most pressing challenges for planners, as extreme heat is a major driver of rising mortality rates and has become the most frequent natural disaster. Moreover, record-breaking temperatures are already transforming how people experience urban life and public spaces. Planners are helping cities worldwide develop strategies such as green infrastructure to enhance resilience and adaptability to multiple hazards. These solutions mitigate urban heat islands (UHI) by providing cooling benefits while also facilitating natural processes that improve soil water absorption and reduce runoff (Keith et al., 2020). To achieve meaningful results, adaptive solutions must be systematically implemented, focusing on replicable, flexible, and cost-effective measures that generate co-benefits for health, the environment, and the economy (Orsetti et al., 2022). Additionally, green and accessible public spaces incorporating nature-based solutions (NbS) can play a crucial role in improving urban health and well-being (UN-Habitat, 2025).

Building on these premises, this paper examines the potential of climate shelters in schoolyards as a strategy to reduce heat exposure and promote health in urban environments (Caldarice et al., 2025). Specifically, urban climate shelters offer a promising approach to maximizing the co-benefits of urban nature, from climate change mitigation and adaptation to improved health, well-being, and social equity, particularly for children and other vulnerable populations exposed to extreme heat (Pincegher et al., 2025). As highlighted in the 2025 Trend Report for Planners by the American Planning Association, cooling centres play a vital role in providing shelter from extreme heat. However, while these facilities are being implemented more frequently and for longer periods, encouraging residents to use them remains a challenge. Planners can play a key role in raising public awareness about cooling centres and integrating supportive services to reach those most in need as extreme heat events become more common. To address this challenge, this paper will present the primary findings of the ongoing EU-funded project MAINCODE -MAINstreaming nature to CO-Design urban climate shelters in schoolyards. As part of the Driving Urban Transitions Partnership, MAINCODE promotes the integration of NbS in schoolyards and public access to these spaces as a climate adaptation measure. The project emphasizes the importance of embedding cooling solutions within schoolyards and incorporating them into broader urban adaptation strategies and policies to foster healthier and more resilient cities. Ultimately, MAINCODE views urban climate shelters as a viable solution to mitigate extreme temperatures, manage heat-related hazards, and enhance health, well-being, and social cohesion, particularly for those most vulnerable to climate extremes.

Keywords:

Climate shelters; Climate change; Extreme heat; Nature-based solutions (NbS); Health

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T_05 ENVIRONMENT AND CLIMATE (B) / 1277

Functional Adaptation Areas: Rethinking functional areas for climate adaptation governance.

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It is increasingly understood that the impacts of climate change transcend traditional administrative boundaries, necessitating innovative, cross-boundary policy actions (Leck and Simon, 2013). Emerged in the 1990s as a way to reinterpret the evolving interplay between cities and their surrounding regions, the concept of 'functional areas' may be useful in this concern, indicating a shift in spatial governance and planning dynamics towards models pivoted around rigid, matryoshka-style administrative units towards more flexible, place-based approaches aimed at meeting actual territorial needs (Barca, 2009; Cotella, 2023). More in detail, the functional area aims at tailoring policy actions on the ongoing political, social, economic, cultural, and geographical interdependencies, on the one hand favouring more place-based and context-dependent actions (i.e. the "third level of intervention" outlined in the New Leipzig Charter (European Commission, 2020)), on the other hand, however, raising issues in relation to the legitimacy and accountability of this 'new territorialism' (Swyngedow, 2005; Faludi, 2018).

Developing from the theoretical roots of city-regionalism, this study revisits the foundational concepts of 'functional area', to explore its pertinence and added value to climate adaptation governance. Although the main objective of city-regionalism has emerged as a response to the increasing complexity of urban systems (Davoudi, 2008), early proponents anticipated key elements of the functional area concept. Geddes (1915) recognised the limitations of traditional municipal boundaries in addressing the interconnected social, economic, and environmental dynamics of city regions. He advocated for regional cooperation, integrated planning, and unified governance to effectively manage shared resources and overlapping challenges. Similarly, McKenzie (1933) emphasised that a city is not merely an aggregation of people or buildings but an organised system of activities and functions operating as an economic and social organism. He argued for viewing cities and their surrounding regions through a functional lens, highlighting the evolving relationships between institutions and services.

While these frameworks have proven effective for urban and regional planning, their focus on economic metrics has limited their capacity to address broader sustainability goals, particularly in climate adaptation. This study bridges this gap by examining the intersections between the functional area approach and climate adaptation governance. It introduces the "Functional Adaptation Areas" (FAAs), a territorial framework designed to tackle climate adaptation challenges. Unlike traditional functional areas, FAAs prioritise the spatial realities of climate risks and the adaptive capacities of territories requiring tailored governance models. In order to support this conceptual opening, the contribution presents the preliminary findings of a comparative analysis of 'functional

areas' definitions based on an extensive literature review. The analysis aims to analyse the 'functional area' conceptual framework and the relationships that characterise them to determine a set of potential criteria and approaches for mapping FAAs.

Keywords:

Functional area; Functional Adaptation Areas; Climate adaptation; Territorial governance

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T_05 ENVIRONMENT AND CLIMATE (B) / 617

What if the Butterfly effect was real? Assessing the contribution of greening plans to urban biodiversity in Italy

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As the world population living in cities continues to increase –expecting its current size to double by 2050–the need to consider the more-than-human as an integrative part of urbanization, inspiring broader thinking about ecological processes and human-nature relationships, has become more pressing. Alongside the capacities and resources that all levels of government and society need to mobilize to achieve a nature-positive future, there is increasing evidence in the scientific and policy debate that local governments can play a pivotal role in attaining global biodiversity conservation targets, goals and

commitments (Bulkeley et al., 2021), through initiatives that preserve species and habitats, improve ecological connectivity, mainstream biodiversity-sensitive planning, and enhance residents' knowledge and stewardship of biodiversity (Rega-Brodsky et al., 2022). One approach through which local governments organize their effort to address biodiversity loss and sustain the multiple benefits of biodiversity in cities in addressing the climate crisis is the development of Urban Greening Plans (UGPs), recognized by the EU Biodiversity Strategy as key tools to comprehensively guide and sustain the nature restoration process in urban areas and systematically incorporate and promote green infrastructure thinking and nature-based solutions (European Commission, 2021).

This research assesses the contribution of UGPs to achieving objectives of biodiversity conservation, restoration, and enhancement within the challenges of climate transition. Through a systematic content analysis of UGPs adopted by provincial capital cities in Italy, the study investigates which biodiversity-related attributes are relevant for greening plans and what level of commitment local governments demonstrate in planning, implementing, and monitoring biodiversity actions (Lazzarini et al., 2024). The research highlights that, despite being sectoral, voluntary, and soft-policy instruments, quality UGPs have the potential to metaphorically generate a "butterfly effect," sparking small-scale transformations that lead to broader, transformative changes, influencing socio-ecological structures and re-orienting institutional dynamics. However, the analysis poses significant challenges, including a lack of baseline data and standardized protocols for measuring urban biodiversity, which undermines the translation of the objectives into concrete actions (Hjortsø et al., 2023; Pierce et al., 2024). Additionally, a weak commitment to implementation, reflected in the limited use of monitoring indicators and biodiversity-related targets, is underlined. The study identifies examples of high-quality greening plans that benefit from strong political support and institutional backing, as evidenced by the allocation of financial and human resources, and the use of shared governance tools that foster collaboration among diverse stakeholders and enhance the likelihood of successful implementation.

Keywords:

Urban greening plans; urban biodiversity; shared governance; climate transition

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T_05 ENVIRONMENT AND CLIMATE (B) / 468

Seeking a possible Positive Energy Districts (PEDs) location choice from a local context, a case study in Tainan City, Tai-

wan

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In response to the global trend of transitioning from carbon reduction to achieving net-zero emissions, the transformation of energy systems must simultaneously address challenges across social, economic, technological, and environmental dimensions. European countries have realised that relying solely on individual buildings, such as Zero Energy Building (ZEB) and Net Zero Energy Building (Net ZEB), is insufficient for effectively managing and efficiently utilising renewable energy on the district scale. As a result, they have begun to shift towards district-scale zero-energy or even positive-energy transformation pathways. By coordinating renewable energy at district and cross-district scales, overall energy efficiency can be better achieved. However, from the urban planning perspective, energy transition has been rarely taken into account when making land use plans due to the deployment of renewable energy varies significantly across different regions. Also, energy consumption differs greatly based on factors such as land use types and building typologies. Current research primarily focuses on identifying suitable locations for individual renewable energy sources.

Therefore, the importance of Positive Energy Districts (PEDs) lies in their ability to comprehensively plan multifaceted relationships such as renewable energy production and land use patterns in different regions (Erkinai et al., 2022). The European SET-Plan (Strategic Energy Technology Plan) has set a goal of establishing 100 PEDs across the EU by 2025, with 23 sites or laboratories across 13 countries as of the end of 2023 (Haase et al., 2024). As Europe is still in the early stages of this transition, there is no clear definition of the key impact indicators for assessing the potential locations and defining spatial boundaries of PEDs. From the current cases, it is obvious that developing localised evaluation methods tailored to specific local conditions is essential.

As an island, Taiwan views the development of renewable energy efficiency as one of the most critical strategies for achieving a net-zero path. This study will first review previous literature about indicators related to PEDs in order to understand the energy production potential and energy consumption in different regions. Energy production potential may include indicators such as potential locations for solar power as well as urban development factors like new development areas or transformation areas, and the current state of energy infrastructure, including pipelines and power grids. Energy consumption may cover factors such as the distribution and proportion of various land use types, population density, and current electricity consumption patterns. In the second phase, Tainan City in Taiwan will be selected as the research area. Since 2011, the Tainan City Government has been the top one city for promoting solar photovoltaic installations. Considering its well-preparedness for renewable energy development, Tainan demonstrates greater potential for promoting PEDs. Based on the local contexts of Tainan City, an appropriate evaluation framework for PEDs will be developed. Finally, a spatial analysis is performed on a map that identifies the most suitable administrative districts to implement PEDs. The results of this study can serve as a strategic guideline for prioritising micro-scale priority areas. Furthermore, the findings can assist Taiwan and even the Asia-Pacific region in formulating effective spatial planning strategies for energy transition.

Keywords:

Positive Energy Districts; PEDs potential; Renewable Energy; Spatial Multi-criteria

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T_05 ENVIRONMENT AND CLIMATE (B) / 531

Party politics and local administrative capacity in climate governance: a comparative study of the heat transition in German cities.

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Motivation and research question

Cities contribute 70% of total greenhouse gas emissions (IPCC, 2022), with the heat sector as a major, hard-to-decarbonize contributor. Solutions such as transitioning to renewable energy, electrification, and improving building efficiency require coordinated local action involving multiple stakeholders and varying infrastructure needs.

To guide the decarbonization of the heat sector, municipalities must develop heat plans that identify areas with potential heat sources. Germany's Heat Planning Act mandates these plans but, due to the federal government's inability to directly delegate tasks to municipalities, relies on the Länder for implementation while offering financial support. Progress varies widely across cities—some have finalized their heat plans, while others are yet to begin. This raises critical questions about the factors and challenges shaping the process. This study seeks to answer: *Why does progress in heat plan development vary across cities?*

Theory

To address this question, we draw on theories of local climate policy implementation, urban governance, and multi-level climate governance. Existing research highlights barriers to stringent climate policy, including private sector influence (Wansleben & Neumann, 2023), political dynamics (Wurster & Hagemann, 2018), and resource constraints (Eckersley et al., 2023).

The first factor we examine is the understudied role of politics (Hughes, 2017; Ryan, 2015), particularly the influence of mayors, city councils, and political parties at both local and state levels. Given the Green Party's growing presence in government, we anticipate that cities with strong Green Party representation will prioritize heat planning. Thus, we hypothesize that a strong Green Party influence at local and state levels positively affects heat plan progress.

The second factor is the constrained capacity of municipal administrations, which can hinder progress in implementing heat planning (Fernández-I-Marín et al., 2023; Kern, 2019). Complex climate policies introduce coordination-heavy tasks with overlapping responsibilities and limited resources (Christensen et al., 2019). The heat sector's intricacies demand localized solutions, exacerbating resource strain, which likely varies by capacity (Herreras Martínez et al., 2022). Therefore, our second hypothesis is that higher administrative capacity, including financial resources and staffing, improves heat planning.

Data and methods

To explore our research question, we compile a dataset with information on the progress of heat planning, governing parties, administrative capacity, and ownership of energy

infrastructures of all German cities with populations over 100,000. According to federal law, these cities must finalize their plans by June 30, 2026—two years before smaller municipalities, making them more likely to show progress.

The dataset informs the selection of four cities for in-depth case studies, chosen for their high variation in administrative capacity, political leadership, and progress in heat planning. These case studies enable us to evaluate the relative impact of political and administrative factors alongside other indicators. Using process tracing, we investigate the mechanisms driving differences in policy outcomes and effectiveness. Data is collected through semi-structured expert interviews (ten per city) scheduled from January to March, as well as desk research.

Contribution

This study contributes to the limited literature on urban heat transition governance by examining the interplay of political dynamics and administrative capacity in climate policy implementation. It provides valuable insights into the importance of these factors within the framework of multi-level climate governance.

Keywords:

heat planning; heat transition; urban governance; building sector decarbonization

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T_05 ENVIRONMENT AND CLIMATE (B) / 734

Framework for prioritising water body restoration: a context of Indian populated cities with climate challenges

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With the constant dependence on groundwater and diminishing recharge capacity, along with untreated sewage and garbage dumping onto the water bodies, India is likely to be the most severely affected by water scarcity by 2050. As the most populous country with unique climate risk challenges, urban India has significantly stressed water resources. To address this, India recently completed its first water census of more than 24 Lakh water bodies across all states and union territories. This has provided essential information on the typologies of water bodies, their sizes, conditions, status, current use, ownership, storage capacity, seasonal fluctuations, etc.

With climate extremes and a dearth of open spaces, there has never been a more urgent need to restore these damaged ecosystems than now - both socially and environmentally. Although enormous funding for water body revival and restoration is in place for both alleviating climate change and creating public spaces in Indian cities, the lack of an evaluation method to determine the most critical sites, eventually lead to failure of the restored water bodies. Hence, the study use the first water census of India with focus on dried up water bodies, assess the restoration potential of critical, government-owned water bodies in most populated cities in India with a comprehensive evaluation framework.

The study propose a three-stepped research method to create a score-based prioritisation index to select the most critical water bodies. Firstly, the study identify the dried-up, rarely filled up, and never-filled-up water bodies against their ownership status in populated cities and compared the change in the physical characteristics in the last ten years. This help in the primary selection of the water bodies. In the second stage, through literature review and case studies, the authors document different models of water body restoration to understand environmental aspect of microclimate control, ecosystem services, as well as the socio-recreational benefit of water bodies. In the third stage, the study propose a framework with four key dimensions: a) physical parameters, such as size, hydrological status, and pollution levels; b) social co-benefits, including ecosystem services, cultural significance, and community reliance; c) contextual understanding, addressing regional climatic, geographical, and infrastructural factors; and d) ownership patterns, assessing governance structures, legal statuses, and stakeholder responsibilities. By assigning scores across these dimensions, the framework generate a prioritisation index to identify water bodies requiring urgent intervention.

The authors argue that this evaluative methodology enables a systematic approach to addressing urban water scarcity, ensuring the inclusion of ecological and socio-economic factors in decision-making. The framework further offer policymakers and urban designers actionable insights for the targeted rehabilitation of water bodies, fostering urban resilience and sustainable water resource management in the context of India's unique climate challenges.

Keywords:

water census; framework; prioritisation index; climate challenges; water restoration

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Investigating the impact of Urban Form Elements on carbon emissions at Different Development Stages: Based on GWR and Random Forest Models

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Paper Title: Investigating the impact of Urban Form Elements on carbon emissions at Different Development Stages: Based on GWR and Random Forest Models

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Topic Category: Carbon emissions, Urban development Levels, Urban forms, Geographically Weighted Regression Model, Random forest

Abstract Text:

With rapid urban expansion, cities, the main vehicles for human activity, consume 78 percent of the world's energy. Massive carbon emissions have led to a rise in global average temperatures and frequently triggered extreme weather events. Due to the uneven urbanization process and socioeconomic differences, Chinese cities are at various stages of development. Consequently, the relationship between urban form and carbon emissions varies significantly among cities. Therefore, understanding the characteristics of carbon emissions and their influencing factors at different stages of development is crucial for formulating differentiated carbon emission reduction policies, promoting the development of low-carbon cities, and achieving the goal of carbon neutrality.

To more accurately reveal the impacts of urban form elements on urban carbon emissions at different development stages and to explore targeted sustainable development models, this study aims to use Geographically Weighted Regression (GWR) and Random Forest Model to analyze the impact of urban form elements on carbon emissions in Chinese cities at different development stages for 10 consecutive years, from 2012 to 2022, such as the total area of the city, road network density, average building height, etc. (Wang et al., 2019)

The main steps of this study include the following five aspects:

1. Classification of Development Stages: Relevant literature was consulted to classify Chinese cities into distinct development stages, enabling a comparative analysis of urban carbon emissions across different stages.

2. Carbon Emission Estimation: National emission inventories and Night Time Light (NTL) data were used to estimate city-level carbon emissions and validate the accuracy of the estimates with city-level carbon emission statistics.

3. Spatial Autocorrelation Analysis: The spatial autocorrelation of carbon emissions was analyzed, and regression analysis and the GWR model were used to examine the spatial heterogeneity in the relationship between urban form elements and carbon emissions.

4. Random Forest Model Construction: The random forest was constructed to learn the nonlinear relationship between urban form elements and urban carbon emissions and evaluate the impact of various **urban form elements on carbon emissions**.

5. Results and Recommendations: The results from the GWR and Random Forest models were analyzed to provide evidence-based recommendations for carbon reduction strategies and sustainable urban development policies.

The findings reveal that the factors influencing urban carbon emissions vary significantly across different stages of urban development. Notably, the average building height and the number of buildings emerge as key contributors to carbon emissions. These results underscore the importance of tailored approaches to urban planning and policy-making that consider the unique characteristics of cities at different developmental stages.

By combining the GWR and Random Forest Models, this study provides a more nuanced and accurate assessment of the relationship between urban form and carbon emissions. The insights gained from the analyses provide practical recommendations for reducing carbon emissions and promoting sustainable urban development. Ultimately, this study aims to support the broader goal of achieving carbon neutrality by identifying the most effective urban planning strategies for different development contexts.

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Keywords:

Carbon emissions; Urban development Levels; Urban forms

References:

Wang, S. et al. (2019) Examining the spatial variations of determinants of energy-related CO₂ emissions in China at the city level using Geographically Weighted Regression Model, *Applied Energy*, 235, pp. 95–105.

T_05 ENVIRONMENT AND CLIMATE (B) / 758

Unraveling the mechanisms of extreme heat on urban mobility resilience: a cycling perspective

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Global climate change has led to an increase in extreme heat events, affecting urban mobility, particularly bike-sharing systems, which are crucial for sustainable urban development. Although the built environment has a considerable influence on bike-sharing usage, there is limited research on its impact on urban mobility resilience (UMR) of bike-sharing. This study investigates the effect of extreme heat on UMR in Shanghai's urban center, utilizing machine learning techniques, specifically the LightGBM model, SHAP explainability model, and Bayesian parameter optimization. The research explores how the built environment and other factors shape UMR under extreme heat conditions.

A novel quantitative method was developed to measure UMR, using the ratio of bike usage during extreme heat to normal conditions in a spatial unit. The model demonstrated significant explanatory power, with R^2 values of 73.5% on weekdays and 63.7% on weekends, reliably explaining UMR variations in bike-sharing systems. The results indicate that extreme heat has a more severe negative effect on UMR during weekends, as weekend trips are more leisure-oriented and thus more vulnerable to heat. Additionally, UMR in peripheral urban areas is lower compared to the city center, with high UMR areas in the city center showing a clustered distribution.

In terms of mechanisms, the study found followings: (1) Development intensity and land use diversity have a positive impact on UMR, especially on weekdays. For example, increasing building density (from 0 to 0.3) significantly boosts UMR by nearly 0.1. Similarly, increasing floor area ratio and building height on weekdays also leads to substantial improvements in UMR; (2) The importance of a well-developed public transportation network and infrastructure is emphasized. Proximity to metro stations (within 1,000-1,500 meters) enhances UMR, and bus stop density plays a crucial role in increasing resilience; (3) The reasonable concentration of population and economic activity is vital for enhancing UMR, particularly on weekends. Population density positively affects resilience up to a threshold of 20,000 people per km², beyond which the impact diminishes. Economic agglomeration on weekends contributes more than 0.2 to resilience, while a reasonable population concentration increases resilience by over 0.05.

The study challenges some conventional views. Increasing road density does not always

enhance resilience. In fact, higher road density can reduce UMR by up to 0.1 on weekdays. Similarly, while greening is often considered beneficial, it can lower UMR by up to 0.15 on weekends, indicating the need for more nuanced urban planning approaches. From a policy perspective, the study offers several key recommendations. High-density development areas, such as commercial and residential zones, tend to show higher UMR under extreme heat, suggesting that promoting moderate high-density development in urban centers is a viable strategy. However, it must be balanced with careful attention to green space optimization and microclimate design. Transportation planners should focus not only on increasing road density but also on ensuring the accessibility of public transportation systems, particularly integrating high-density development areas within a reasonable distance of transportation hubs. Special cycling paths and slow-moving transportation networks should be developed to encourage bike-sharing, reduce barriers to cycling, and improve overall urban mobility resilience. Additionally, urban planning should prioritize functional diversity through mixing land use and the population and economy should be moderately agglomerated. In conclusion, this research provides a comprehensive framework for assessing and enhancing UMR under extreme heat conditions. The study offers valuable insights for urban planners and policymakers, providing a robust tool for improving UMR in the context of climate change.

Keywords:

Urban mobility resilience; Climate change; Extreme heat; Built environment; Bike-Sharing

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T_05 ENVIRONMENT AND CLIMATE (B) / 609

Exploring the Carbon Emission Impact of Community Life Circle Shared Clusters: A Case Study of Nanjing, China

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The community life circle is a key unit in urban built-up areas and serves as the daily spatial domain through which individuals interact with the city. It supports diverse human activities and, as an urban design concept, emphasizes density, mixed-use, and pedestrian accessibility, becoming increasingly popular for its sustainability and livability benefits. In high-density cities, community life circles are interconnected through

shared facilities and functional linkages due to construction limitations. The hierarchical structure and spatial configuration of these circles shape the area's functional structure and potentially influence its carbon emissions. While existing studies primarily focus on how spatial morphology and infrastructure configurations influence carbon emissions through regional microclimates and human mobility behaviors. Less attention has been given to the differentiated carbon emission effects arising from the interrelationships between community life circles, as well as the spatial fragmentation caused by community life circle clusters and its manifestation in urban carbon emissions.

The present study uses Nanjing, China, as a case to investigate community life circle clusters formed based on facility-sharing patterns, examining their spatial distribution characteristics and impacts on carbon emissions. First, community activities are classified into self-sufficient, neighborhood, and shared categories based on typical activity areas, and linked to specific facility types (3 categories, 15 facility types) along with their spatial locations using urban point-of-interest (POI) data. Second, based on Nanjing's community life circle planning, 611 community points in the central urban area are identified, and facility packages are formed for each point, consisting of facilities within 5-, 10-, and 15-minute walking distances, along with the nearest facilities meeting the activity requirements. Next, after analyzing the facility overlap within the 611 facility packages, including the number and types of overlapping facilities between any two packages and their categorized proportions, shared clusters with high overlap are identified and categorized. Subsequently, using carbon emission data at the block scale from the ODIAC Fossil Fuel Emission Dataset, the impact of carbon emissions on each shared cluster is analyzed based on indicators such as cluster type, the proportion of shared facilities, and facility types. Finally, Nanjing's natural landscape and spatial elements are considered to discuss the external factors that contribute to the formation of community life circle clusters, and recommendations for community building to promote urban sustainability and social equity are proposed.

Preliminary results indicate significant differences in the extent of facility sharing among different types of community life circle clusters. The carbon emission levels of shared clusters vary according to the types of shared facilities, with the sharing of higher-level activity facilities (e.g., large commercial and entertainment facilities) typically leading to increased carbon emissions. Clusters with more basic shared facilities tend to maintain relatively low carbon emission levels. Additionally, higher facility overlap may contribute to increased carbon emissions. Certain facility types, such as green spaces and public transportation stations, appear to have a more direct positive effect on reducing carbon emissions. Future analysis will further explore the specific impact of facility sharing on carbon emissions and, considering Nanjing's natural landscape and urban structure, offer targeted community optimization recommendations to promote sustainable urban development and equitable service provision.

Keywords:

Community life circle; Facility sharing; Carbon emissions; Urban sustainability

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DESIGNING [FROM] THE SEA Challenges, methodologies and scenarios for planning with water

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Setting the context: global pressures/water challenges

Cities are under pressure due to multiple and conflicting social, economic, and environmental challenges. Water cities such as coastal territories, river cities and delta regions are particularly vulnerable to the effects of climate extremes which are pushing public authorities to identify adaptive interventions across scales and time. According to a recent UN report (2022) sea levels could rise up to two metres by 2100, challenging the life of large cities located along the coasts. Researches have warned that using seawalls or massive storm surges to protect cities against sea level rise can be counterproductive and make rising waters even worse in the long run. Rigid infrastructures alone will not save water cities from flooding. On the contrary, adapting to changing water conditions will require more structural changes and cultural shifts. This contribution argues that we need new interpretative models to approach and understand cities in order adapt them to changing water condition.

Why does water matter today?

Water is the physical and liquid space where today many challenges are coming together. Dealing with water today means understanding how to adapt to changing water condition. It means dealing with global economies, considering that 90% of world trade passes through the sea. It means studying cultures and history as it is thanks to the sea and ports that countless civilizations, religions and languages were born which we still look at today with respect and admiration. It means dealing with energy and landscapes of the new industrialization together with a system of territories in crisis, infrastructures and architectures to be rethought in the short, medium and long term.

Water is about migration, wars and political games of powerful actors who aim to control the sea as an instrument to control the world. Port cities, river cities, coastal and delta landscapes are therefore characterized by a constantly changing conditions at the intersection of land and water, always looking for new balances.

They are porous, very fragile and complex systems subject to spatial, social and environmental transitions. They are also among the most vibrant spaces due to the presence of fertile soils, natural landscapes, cultures and the histories of long-durée that make them worth studying. Urban disciplines, however, have traditionally considered planning, limiting its scope mainly to terrestrial areas, while delegating the planning and management of maritime spaces to sector-specific disciplines (e.g. port regulatory plans). There is a need to guide urban disciplines towards a broader and more organic vision able to incorporate the water dimension.

Methodology: scenario thinking

This contribution brings together different materials and educational experiences based on scenario thinking approach. It analyses three scenarios developed within the “Adaptive Strategies” and “Urban Archipelago” design studios at the TU Delft. Scenarios fit perfectly within contemporary design approaches and the idea of spaces that Bauman has defined as liquid. In a liquid and porous society different visions coexist and collide and the role of the scenario is that of defining a vision, a fascination, an image capable of tracing a direction, leading the current, in a context made up of differences, complexities, and conflicts. Scenarios become reflections, points for a discussion. They are not meant to be implemented but to create awareness and to generate new narratives for the future of cities dealing with water.

Keywords:

water, port cities, scenarios, adaptive strategies

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T_05 ENVIRONMENT AND CLIMATE (B) / 260

A Model for Energy Transition Towards the 2050 Climate Neutrality Goal: Positive Energy Districts (PED)

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The 2050 climate neutrality goal is a central strategic priority for the European Union. Cities, as primary contributors to global greenhouse gas emissions, are simultaneously vulnerable to climate change impacts. To achieve this goal, **urban areas must prioritize the transformation of energy systems and the adoption of sustainable innovations. Positive Energy Districts (PEDs)** represent a key approach to accelerating **energy transitions and contributing to climate neutrality** targets.

PEDs are urban zones designed to balance local energy production and consumption, potentially generating a surplus. These districts, composed of diverse buildings, manage energy flows to achieve an annual **positive energy balance**, with concepts like Zero-Energy Buildings and Energy-Positive Neighborhoods reflecting different PED models.

Positive Energy Districts (PEDs) play a significant role in **reducing greenhouse gas emissions and mitigating the impacts of climate change in cities**. The sustainable solutions implemented in **these districts offer a comprehensive approach to addressing climate-related urban challenges by integrating renewable energy sources, smart city systems, energy storage solutions, active mobility, and nature-based solutions**. The structure of these districts is not limited to the renewal of energy systems; it also encompasses a multifaceted framework that integrates urban planning, technical solutions, and social, political, and economic innovations.

The planning of Positive Energy Districts (PEDs) requires flexible implementation models that can integrate with urban systems. These models also necessitate the inclusion of social and institutional elements, such as citizen participation, business models, governance structures, and legal frameworks, into the transformation process. In this context, the success of PEDs depends not only on technical solutions but also on the harmonious integration of social and institutional structures. Furthermore, the development and implementation of new information technologies play a key role in this transformation. Digitalization and data-driven systems are critical for enhancing the efficiency of energy management and urban infrastructure.

However, **the implementation of Positive Energy Districts (PEDs) faces several challenges**. Technical difficulties, such as the development of sustainable energy technologies, the integration of appropriate energy systems, and deficiencies in existing infrastructure, are among the primary issues that need to be addressed for the

widespread adoption of PEDs in cities. Additionally, multifaceted challenges such as high investment costs, lack of financing, societal adaptation to new technologies, securing public support, lack of political will, coordination issues among public institutions, unaligned legislation, and bureaucratic complexities represent significant barriers to this transformation process.

In this context, **understanding the concept of Positive Energy Districts (PEDs) and adapting it to the needs of different cities, regions, and countries is of great importance to transform PED areas into a tool for energy transition and enable cities to achieve their 2050 climate neutrality goals.** It is necessary to analyze the hierarchical scale relationship between PEDs and cities, develop the required urban strategies at different scales, and adapt elements such as energy systems and building solutions to urban planning approaches.

The comprehensive approach to be developed in this regard must not only address technical engineering or economic dimensions but also encompass the social and environmental aspects of cities. **This paper aims to discuss the technical, economic, social, and administrative challenges of PED applications in Türkiye and Europe, explore the holistic approach required to overcome these challenges, and analyze the variables that should be considered when designing this process while developing planning scenarios and implementation strategies for PEDs.**

Through the discussion of the implementation challenges of Positive Energy Districts (PEDs) and the necessity of a holistic planning approach presented in this paper, it is proposed that PEDs can be developed as a tool to contribute to the creation of more sustainable and climate-friendly cities.

Keywords:

Positive Energy Districts, Climate Neutrality, Energy Transition, Renewable Energy, Planning

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Inspiration for Pathways towards Multi-Scale Green Urban Regeneration and Planning Construction under Dual Carbon Goals

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In response to the escalating urban ecological challenges induced by global climate change, the pursuit of sustainable development and green low-carbon regenerations under the goals of peaking and neutralizing carbon emissions (dual carbon) has emerged as a pivotal approach to bolster urban resilience and enhance urban ecology. However, systematic research on the integration of urban regeneration and green low-carbon technology remains nascent. This study scrutinized the practices of urban regeneration and planning within the dual carbon framework across three distinct spatial scales: urban zones intimately tied to residents' daily lives (encompassing public spaces and residential areas), cities, and metropolitan regions. Through an exhaustive analysis of the planning, technical, and implementation systems, this study distilled the strategies of green low-carbon regeneration planning at diverse spatial scales and management orientations. It is noteworthy that while western nations advance towards green and low-carbon urban landscapes, their urbanization processes are approaching completion. Therefore, extant research and practice predominantly focus on the technical aspects of communities and buildings, with limited instances of comprehensive planning for green low-carbon development across varied spatial scales. To this end, this study compared green low-carbon regeneration and planning construction cases from United States, the United Kingdom, Germany, South Korea, Japan, and China. The findings indicate that: (1) In terms of the planning system, a balance should be struck at the metropolitan scale between performance distribution and efficient development across various cities. Concurrently, at the city level, structural carbon reduction should be pursued via spatial planning. The urban area scale should align with statutory plans or internationally recognized indicators to flexibly implement carbon reduction strategies. (2) In the technological system, both the metropolitan and city scales emphasize the comprehensive benefits of anthropogenic spatial utilization (encompassing industry, transportation, resources, and land use) and ecological spatial foundations (including mountains, rivers, forests, and fields), although their spatial measurement ranges differ. Additionally, the city scale should consider systematic planning of green spaces and wind-thermal corridors, while the urban area scale should prioritize microclimate enhancement and the large-scale application of green building technologies. (3) Regarding the implementation system, the metropolitan scale can conduct specialized research through an expert committee composed of relevant departments, government agencies, and renowned scholars, integrating research outcomes into the urban scale's regeneration planning. The city scale should develop systematic green low-carbon urban regeneration plans specifically for regeneration areas, ensuring that the planning guides all constituent systems while developing replicable and scalable operational frameworks and procedures. At the urban area scale, public participation should be encouraged, leveraging the organizational power of various government departments and neighborhood committees to involve residents as key participants in green regeneration efforts, while also considering the inclusion of social capital in funding. These findings aim to illuminate the crucial role of spatial planning in fostering urban sustainable development, providing theoretical insights that promote balanced and reciprocally beneficial growth across social, economic, and environmental dimensions.

Keywords:

Dual carbon goals□Multiple spatial scales□Green low-carbon regenerations,□Pathways

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A Multi-Risk Framework for Assessing Urban Flood and Drought Risk: Lessons from Barcelona

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Urban areas are increasingly susceptible to the co-occurrence of flood and drought events, driven by climate change and rapid urbanization. This study applies a novel multi-risk framework for analyzing urban flood and drought risks, using Barcelona, Spain, as a case study. The framework integrates insights from existing multi-hazard and multi-risk assessment methodologies, focusing on a comprehensive assessment of combined flood and drought risks. This includes an analysis of all its components—exposure, vulnerability, and hazard—while considering their spatial and temporal distribution and dynamic interactions.

The framework consists of six key components: 1) Context Analysis, which establishes the broader environmental, climatic, and socio-economic context of the study area; 2) Hazard Analysis, which considers the spatial and temporal distribution of flood and drought hazards and potential compound events; 3) Exposure Analysis, which identifies urban elements at risk; 4) Vulnerability Analysis, which examines the capacity of the urban system to cope with and recover from these hazards; 5) Risk Assessment, which integrates data on hazard, exposure, and vulnerability to identify areas of high risk; and 6) Dynamics Analysis, which explores the underlying factors and dynamics contributing to the high-risk status of specific areas.

To demonstrate the applicability of this framework, a case study was conducted in Barcelona, Spain, a city that faces significant risks from both flooding and drought. Historical data highlight the city's vulnerability, with notable droughts occurring in 1945, 1986-1989, 2004-2008, 2017 and 2023, along with major pluvial floods in 1995 and 2018. In response, Barcelona has implemented various adaptation measures, including the construction of the Ebro River pipeline in 2008 for drought mitigation and a desalination plant established in 2009 to enhance water supply resilience. This analysis examines specific vulnerabilities in Barcelona, such as aging water infrastructure, which pose a considerable risk to the city's water supply system. Additionally, the city's history of water scarcity, exacerbated by climate change impacts—such as increased temperatures and altered precipitation patterns—further intensifies these vulnerabilities.

The Barcelona case study demonstrates how the framework can inform climate change adaptation planning. By analyzing the city's risks related to floods, droughts, and their combined impacts, the framework highlights the need for: 1) enhanced stormwater management systems to mitigate flood risks, aligning with climate adaptation strategies; 2) improved water conservation measures to address drought vulnerability, contributing to climate mitigation; and 3) the development of early warning systems for both floods and droughts to enhance preparedness and response capabilities, which are crucial for building urban resilience. This framework enables urban planners to develop more effective and integrated strategies for managing flood and drought risks, ultimately enhancing urban resilience and supporting the transition to sustainable, climate-resilient cities.

Keywords:

Flood and drought; Climate change; Risk analysis; Urban resilience

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Hydraulic Heritage and Community Identity: Examining Socio-Ecological Resilience and Heritage Transformation in Huaibei Area, China

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This study investigates the interrelationships among socio-ecological resilience, identity construction, and hydraulic heritage, as well as their multifaceted impacts on local communities.

Using the Huaibei region in China as a case study, the research examines the historical consequences of the Yellow River's artificial diversion into the Huai River during the Song Dynasty. This large-scale hydrological intervention, intended to protect the Jiangnan region, led to ecological fragility and agricultural decline in Huaibei, designating it as a sacrificial zone. The study focuses on the Xuzhou Xiangyang Irrigation System, constructed in the 1970s, which initially restored ecological balance and agricultural productivity in the Liuquan Town area through a network of 60 kilometres of interconnected facilities. Over time, as environmental resilience improved, the system's primary irrigation functions diminished, leaving the facilities fragmented and integrated into the local cultural landscape.

The research employs an anthropological literature review, oral history, and participatory observation to trace the irrigation system's historical transformation and functional evolution. Semi-structured interviews, supplemented by on-site observation forms, were conducted to explore the local community's perceptions of the system, encompassing their understanding of its construction and functions, satisfaction with living in the heritage community, and acceptance of its transition toward tourism-oriented development.

The findings reveal significant variations in the community's narratives surrounding the hydraulic heritage, largely shaped by their levels of engagement and benefit from the heritage system. For some residents, the irrigation system's historical functions and cultural value foster a strong sense of identity, while others, lacking direct benefits or emotional ties, exhibit indifference.

This study concludes that hydraulic heritage in the Huaibei region has played a crucial role in reshaping socio-ecological resilience and now serves as a cultural landscape that provides tourism value. These dual contributions have established hydraulic heritage as a key element in creating community identity and an indispensable asset for sustainable regional development.

Keywords:

Hydraulic heritage; Socio-ecological resilience; Identity construction; Sustainable development

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T_05 ENVIRONMENT AND CLIMATE (B) / 769

Quantifying Wet-Heat Stress in Chinese Cities: A Unified Framework for Urban Heat Island (UHI) and Urban Moisture Island (UMI) Analysis Using Ensemble Learning

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As global climate change accelerates, cities worldwide are increasingly affected by wet-heat stress (WHS), driven by the combined effects of Urban Heat Islands (UHI) and Urban Moisture Islands (UMI). Human perception of the thermal environment depends on both temperature and humidity. While UHI has been extensively studied, research on UMI remains limited, and few studies have integrated both phenomena into a unified analysis. Given that urban built environments (UBE) are key factors influencing these effects, understanding how different built environment characteristics contribute to WHS is crucial for developing effective urban planning strategies. This study fills the research gap by introducing a novel joint analysis framework that simultaneously assesses UHI and UMI dynamics in Chinese urban agglomerations. It also examines the combined effects of three key built environment dimensions—physical morphology, natural characteristics, and development indicators—on these phenomena.

The objective of this study is to quantify the spatial distribution of UHI and UMI across 1,635 urban agglomerations in China during the summer months of 2020 (June, July, and August). Utilizing high-resolution satellite data and an advanced machine learning approach integrating the LightGBM model with the SHAP algorithm, we assess the contributions of UBE to WHS. All associated models achieved R-squared values greater than 0.9, indicating robust representations of the contributions and marginal effects of different UBE dimensions on urban WHS. Through this approach, we gain novel insights into the complex interplay between UHI, UMI, and urban environmental factors.

The results reveal that approximately 28.9% of urban areas experience concurrent UHI and UMI stress, with these effects being more pronounced in warm climatic zones and in cities categorized as Super Cities (populations over 5 million). This study identifies five major insights into the UBE's role in WHS: (1) Urban greening alleviates WHS, particularly in larger cities, effectively lowering UHI without substantially raising UMI. This finding addresses concerns from previous studies that vegetation may increase air humidity through evapotranspiration, potentially exacerbating WHS and offsetting cooling benefits. (2) Both high building density (BD) and impervious surface ratios (IR) concurrently intensify UHI and UMI, indicating that controlling their upper thresholds is crucial for mitigating combined WHS. (3) Once building height (BH) exceeds 10–12 meters, improved urban ventilation reduces both UHI and UMI, with this effect growing stronger in larger cities. (4) High albedo surfaces, such as glass curtain walls, exacerbate WHS by reflecting and concentrating solar radiation in localized areas, particularly in large cities. (5) Urban development indicators, including Night-Time Lights and Population Density, significantly increase UHI while inhibiting UMI, with this impact intensifying as city size grows.

The study's findings offer actionable recommendations for urban planning, emphasizing the promotion of urban greening, particularly in larger cities, through innovative measures like rooftop and vertical greening to effectively utilize limited urban space and increase green coverage. It advocates for optimizing building morphology by regulating BD and IR and adjusting BH to enhance urban ventilation, thereby alleviating both UHI and UMI. Additionally, managing surface albedo through the selection of appropriate materials can mitigate WHS. Moreover, rapid urban development should strategically balance high economic growth with sustainable planning practices, maintaining economic vitality while mitigating UHI and UMI.

In conclusion, this study underscores the importance of addressing both UHI and UMI comprehensively in sustainable city design. It calls for a shift in urban planning that not only targets heat mitigation but also accounts for moisture dynamics, offering a holistic approach to enhancing urban resilience against climate change. The proposed framework serves as a robust tool for policymakers to make informed decisions aimed at reducing the impacts of WHS.

Keywords:

Wet-heat stress; Urban climate islands; Urban built environment; Ensemble learning

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T_05 ENVIRONMENT AND CLIMATE (B) / 776

Leveraging ecosystem services for resilient flood management: a composite index for prioritising actions

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Climate change has intensified extreme rainfall events which have made flood risk management critical for cities (IPCC, 2023). Conventional drainage systems are struggling to cope with increased stormwater flows, leading to sewer overflows and localised flooding (Ashley et al., 2020). A shift towards resilient flood management is needed, focusing on polycentric governance, integrated management, distributed infrastructure and multifunctional measures (Franco-Torres et al., 2021). Spatial planning plays a key role by integrating sectors (water management, environmental planning, transportation), coordinating policies and providing a framework to systematise incremental interventions (Davoudi et al., 2010).

There are gaps in the implementation of resilient flood risk management in planning practice (Dorst et al., 2021). In this context, knowledge production plays a crucial role in shaping flood management approaches and solutions. Indeed, the analyses carried out in the early stages of planning activities provide an opportunity to highlight the shortcomings of existing infrastructure and to advocate for change. A comprehensive analytical framework is needed to address the multiple dimensions of urban drainage, including surface and subsurface layers and different rainfall events. Through this framework, benefits beyond flood mitigation can be introduced into the urban environment. However, there has been little research on such a framework at the urban scale. Therefore, this study proposes a composite index to analyse how cities cope with different rainfall events. The intent of the index is to capture three different urban capacities connected to flood management: (i) the capacity of an urban system to manage runoff during light rainfall; (ii) the capacity to prevent infrastructure failure during moderate rainfall; (iii) and the capacity to mitigate damage during extreme rainfall. The study also examines whether synergies or trade-offs exist between these capacities.

The study applies a quantitative methodology to Varese, a medium-sized city in northern Italy, by using the ecosystem services framework to assess the three capacities: (i) source control, (ii) local retention and (iii) flood mitigation, as part of the ecosystem service “water cycle and flow mitigation” (WCFM). These capacities are assessed using three models: InVEST from the Natural Capital Project, SWMM from the Environmental Protection Agency and HEC-RAS from the US Army Corps of Engineers. By integrating these models, the study provides a comprehensive view of (i) areas with the highest runoff throughout the year, (ii) nodes where grey infrastructures are most vulnerable to failure during moderate rainfall, and (iii) areas where stormwater accumulates during extreme events.

The study aggregates the results of the three models on the census track. Three indicators are then calculated: (i) runoff as a percentage of total rainfall, (ii) node failure density, (iii) flood risk. These results are then normalised and combined to create a composite index of the WCFM demand in Varese. The study defines priority areas for action through a hotspot analysis. A Spearman’s rank correlation coefficient is used to identify synergies and trade-offs between the three indicators.

Results show almost no spatial correlation between the three indicators. This could be interpreted by the fact that they represent different phenomena that contribute separately to the demand for WCFM. There is a need to consider each dimension to provide a more comprehensive evidence base for prioritising action. Nevertheless, through the composite index and hotspot analysis, the study can identify priority areas and characterise them according to the composition of the index. This characterisation allows for more targeted interventions when developing planning strategies.

This study contributes to the growth of methodological knowledge by developing a composite index that integrates several models to assess stormwater management. It also creates practical knowledge that can guide planners in identifying priority areas for improving the effectiveness of multifunctional measures.

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Keywords:

Resilient Flood Management, Stormwater Management, Adaptation, Ecosystem Services, Urban indicators

T_05 ENVIRONMENT AND CLIMATE (B) / 880

Holistic Energy Resilience Assessment for Advancing Green and Just Energy Transition (Case Study: Semarang City, Indonesia)

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Energy resilience is crucial for mitigating the effects of climate change, urbanization, and natural disasters, as well as ensuring the continuity of urban life. A resilient energy system demonstrates the capacity to recover rapidly from shocks and stresses, thereby minimising downtime and mitigating the socio-economic impacts of disruptions. As urban populations expand, ensuring reliable and resilient energy infrastructure becomes increasingly vital. In Semarang, Indonesia, where the population is experiencing rapid growth accompanied by rising numbers of households and escalating economic activities, the demand for energy is simultaneously increasing, putting significant pressure on the existing energy infrastructure. Furthermore, the city's dependence on non-renewable energy sources, such as fossil-based sources, has raised concerns regarding environmental sustainability and long-term energy security.

The importance of energy resilience in cities cannot be overstated, especially in the face of climate change's increasing impacts. Semarang City is vulnerable to various disruptions, including extreme weather events and hydrometeorological disasters such as floods, landslides, and high winds that can damage critical energy infrastructure and disrupt supply chains. Moreover, the interdependence of urban systems exacerbates the ripple effects of energy disruptions. Addressing these multifaceted challenges requires a holistic energy resilience assessment. A holistic energy resilience assessment aims to outline the Semarang City energy landscape and identify opportunities for improvement to enhance sustainability, energy efficiency, and energy security.

The research adopted the City Energy Resilience Framework (CERF) initiated by R-Cities through the Urban Power Profile Program. The CERF guides cities in applying a resilience perspective to the energy system and in working towards their overall energy transition and urban resilience goals. A holistic assessment covers four dimensions including people, governance, resources, and system to identify opportunities for building capacity and redundancy in their energy systems. The participatory process through a series of data collection and analysis processes involving cross-sectoral stakeholders leads to a comprehensive assessment of energy resilience.

The assessment of CERF goals is deemed highly critical for the robustness of Semarang's power system and its interconnected urban infrastructure. Governance initiatives emerged as a significant focus, reflecting the need for transparent, inclusive, and coordinated regulatory processes. Similarly, the importance of consumer-friendly financing solutions, comprehensive disaster management plans, and inclusive electrification strategies for universal access were stressed. These areas ensure that energy resilience efforts are equitable and benefit all community members, particularly the

vulnerable and historically underserved populations.

This research highlighted the need for a structured approach to strengthen the city's energy resilience, focusing on sustainability, inclusiveness, and preparedness for future challenges. To achieve these goals, five key strategies have been identified as priorities for advancing Semarang's energy resilience covers scaling up the renewable energy initiatives, setting the energy priorities, strengthening stakeholder engagement, enhancing intergovernmental collaboration, and developing alternative energy solutions for disaster preparedness. This research contributes to a better understanding of energy resilience assessment toward advancing green and just energy transition for sustainable development.

Keywords:

energy;urban;resilience;climate change

T_05 ENVIRONMENT AND CLIMATE (B) / 954

Transforming Spaces: Rethinking Urban Parking Lots for a Sustainable Future

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Urban and peri-urban parking lots are underutilized spaces with significant potential for sustainable transformation. Traditionally serving as basic vehicle storage, these sealed surfaces exacerbate climate change as urban heat islands and miss opportunities to support multifunctional uses. With shifting mobility paradigms, increasing demand for renewable energy, and growing societal needs for leisure and nature, these spaces must be reimaged.

This study, conducted through an interdisciplinary course at TU Wien, explored the transformation of parking lots into sustainable urban assets. Using a medium-sized Austrian city as a case study, the project aimed to integrate ecological, social, and energy goals, demonstrating the necessity of innovative architectural and spatial planning.

The Challenge: Unlocking Sustainability Potential

Parking lots can significantly contribute to sustainability by supporting renewable energy, biodiversity, and recreational needs. A prior study revealed that parking surfaces in Austria could generate 4 TWh of energy annually through adaptations with photovoltaic infrastructure (Salak et. al, 2017). As mobility shifts toward shared systems, these spaces can be reimaged to meet urban needs. Climate change intensifies urban heat islands, biodiversity loss calls for habitat connectivity, and local recreational demands emphasize multifunctional solutions. Addressing these factors requires a shift from single-purpose use to integrated concepts.

Collaborative Approach and Real-World Solutions

Architecture and spatial planning students collaborated with experts in landscape and regional development. Stakeholders evaluated existing parking spaces' potential in workshops, grounding the solutions in local contexts. Inspired by European examples, students developed holistic designs integrating renewable energy, biodiversity, and community spaces. These designs showcased how parking lots could serve energetic, ecological, social, and aesthetic functions.

Scalable Global Relevance

This transformative approach is globally relevant. Common challenges like car dependency, underutilized spaces, and the need for integrated designs exist in many cities

worldwide. By adapting these concepts to local contexts, parking lots can support energy efficiency, biodiversity, and social inclusivity. This replicable strategy demonstrates how sustainable urban development can address shared challenges effectively.

Impact and Lessons Learned

The project's outcomes were shared with stakeholders and the public, bridging the gap between academic research and practical application. By challenging traditional views of mobility and parking spaces, the initiative highlighted their potential as valuable urban assets. Students gained practical experience in collaborative problem-solving, emphasizing architecture and spatial planning's role in addressing global challenges.

Conclusion

Reimagining parking lots as multifunctional spaces is essential for sustainable urban futures. This interdisciplinary effort demonstrates how innovative design and collaboration can transform underutilized areas into assets supporting future mobility, energy needs, and social goals. Parking lots, as 'low-hanging fruits' of urban planning, offer a practical pathway to more sustainable cities.

Keywords:

transformation; multifunctional space; sustainable urban future; urban parking lots

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T_05 ENVIRONMENT AND CLIMATE (B) / 940

Sustainability Challenges and Solution Pathways: A Meta-Perspective on Transdisciplinary Urban Research in SEA and China

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Mounting evidence of climate-related impacts—such as intensifying heatwaves, flooding, and resource shortages—makes urban adaptation an urgent priority. Yet effectively addressing these interlinked environmental and social challenges requires innovative forms of knowledge production and decision-making. Central to such efforts is the active engagement of non-academic stakeholders, who bring practical insights, negotiate diverse values, and share ownership of both problems and solutions. Transdisciplinary and participatory approaches are increasingly recognized for advancing real-world mitigation and adaptation sustainability and climate measures that can lead to transformative outcomes. Ultimately, transdisciplinary research in sustainability seeks to overcome knowledge fragmentation, providing holistic approaches to complex social-ecological issues. By bringing together individuals with diverse backgrounds and interests, it fosters meaningful collaboration and drives the innovation needed to tackle urgent challenges.

From 2020 to 2025, we conducted a meta-analysis of ten transdisciplinary research projects under the “Sustainable Development of Urban Regions”(SURE) program, funded by the German Federal Ministry of Education and Research (BMBF). Implemented in Germany, Southeast Asia, and China, these projects offered unique

opportunities to analyze diverse transdisciplinary practices aimed at climate-resilient urban development within cross-cultural settings. Projects thematic foci ranging from nature-based solutions and disaster risk management to urban-rural planning, sustainable behavior, and resource efficiency. Our main objectives were (1) to identify recurring problem patterns, solution pathways and map innovative tools linked to climate adaptation and localized Sustainable Development Goals (SDGs), and (2) map guiding knowledge for practitioners, policymakers and funding agencies. In this paper, we focus on the first objective, while the second provides the future direction of this research.

Drawing on transformation-oriented, transdisciplinary literature, we propose chose a framework comprising five foundational elements—broad stakeholder composition, a focus on societally relevant climate challenges, mutual learning processes, solution-oriented knowledge production, and iterative research design. We further address cross-cutting issues such as epistemological diversity, communication barriers, cultural awareness, inclusiveness, and power relations. Adopting a “research on research” perspective allowed us to critically analyze how these studies were conceptualized, implemented, and interpreted, yielding insights not only on methodological gaps, innovative approaches but also on effective strategies and solution pathway for sustainable development and mitigating climate risks.

Key findings indicate that, even amid diverse thematic foci and in the face of restrictive, top-down governance structures, transdisciplinary methods of co-creation, collaboration, and the careful balancing of power dynamics can foster meaningful dialogue and enable practical solutions, tools, and actionable knowledge. While many of the examined projects have established capacity-building measures, introduced innovative tools, and nurtured collaborative networks, the full extent of stakeholder empowerment, knowledge transfer, and immediate impacts will only become evident during the implementation phase (2025–2028).

Nonetheless, our cross-case analysis shows both commonalities and divergences in local specific socio-economic and environmental challenge and solution pathways, offering critical lessons for balancing diverse perspectives without sacrificing academic rigor. Ultimately, we distill these findings into a practical guide “knowledge bank”, highlighting patterns, strategies, and relevant stakeholder networks that can help align urban planning with climate adaptation goals.

By pinpointing critical challenges, outlining concrete solution pathways, and demonstrating the power of transdisciplinary collaboration, this study strengthens the capacity of multi-sectoral and -cultural initiatives to foster equitable, sustainable urban resilience. It also contributes to the broader discourse on adaptive planning, bridging the gap between research insights and practical, on-the-ground action.

Keywords:

Transdisciplinary Research; Transformation knowledge; Problem-Solution Pathways; Sustainable Development

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T_05 ENVIRONMENT AND CLIMATE (B) / 1414**Integrating Climate Risk and Vulnerability Assessments into Sustainable Real Estate Development: Insights from the city of Venice & Milan****Authors:** Carlo Federico dall'Omo¹; Vittore Negretto¹; Nicola Romanato¹; Matteo Rossetti¹¹ *Università Iuav di Venezia***Corresponding Authors:** matteo.rossetti@iuav.it, nicola.romanato@iuav.it, vittore.negretto@iuav.it

The contribution examines how climate risk and vulnerability assessments (CRVA) can be systematically embedded into real estate development to advance both urban climate resilience and compliance with emerging European regulatory frameworks. Using Milan as a demonstrative context, the study highlights CRVA's value in meeting the requirements of the EU Taxonomy (European Commission, 2020) and aligning with the recommendations of the European Green Deal, thereby enabling developers to pursue adaptation measures with clear environmental, social, and financial benefits.

A two-step methodological framework underpins this approach: City Profiling and Mapping Urban Climate Risk and Vulnerability. In the first step, City Profiling collates detailed climatological and morphoclimatic data—ranging from temperature trends and precipitation patterns to urban heat island (UHI) effects and impervious surfaces (Baker et al., 2012). By establishing a baseline of local climate conditions, real estate developers can identify how site-specific or neighborhood-level vulnerabilities may affect project design, construction costs, and long-term asset performance. This data-driven perspective not only helps prioritize adaptation strategies but also supports compliance with the EU Taxonomy's technical screening criteria, designed to steer investments toward sustainable outcomes.

The second step, Mapping Urban Climate Risk and Vulnerability, refines broader climate projections through downscaling techniques (Adger, 2003; Adamson et al., 2018). This process yields high-resolution maps detailing localized hazards, such as intensified heatwaves or flood-prone zones, enabling developers to evaluate potential risks to specific building sites and surrounding communities (Pietrapertosa et al., 2019). Integrating these localized insights into early-stage planning is critical for meeting the European Commission's growing emphasis on adaptation within investment portfolios, as well as for ensuring alignment with the European Green Deal's ambitious targets to reduce carbon emissions and enhance climate resilience.

Focusing on Milan illustrates both the urgency and the potential of this framework. The city's dense urban morphology, ongoing regeneration initiatives, and heightened exposure to climate stressors (e.g., heat stress and periodic flooding) make it a compelling laboratory for innovation. By applying CRVA at multiple scales, developers gain a robust evidence base to inform architectural design choices, infrastructure improvements, and long-term maintenance plans. This not only mitigates risks associated with climate-related damages but also supports sustainable finance objectives—an increasingly important consideration for investors seeking environmentally responsible projects under programs like Next Generation EU (2021) and Horizon Europe (2021).

Moreover, by complying with EU Taxonomy guidelines, real estate stakeholders can demonstrate a proactive commitment to environmental, social, and governance (ESG) principles, thereby enhancing market reputation and unlocking potential financial incentives. The synergy between robust climate data and strategic development decisions also supports citywide adaptation efforts, amplifying the impact of private investments on Milan's overall climate resilience. Importantly, CRVA can serve as a unifying platform for collaboration among municipal authorities, developers, and local communities, fostering inclusive governance mechanisms as advocated by the European Green Deal's participatory tenets (Few et al., 2007).

In conclusion, integrating climate risk and vulnerability assessments into real estate development offers a unique opportunity to achieve compliance with EU regulations, fulfill the new recommendations of the European Green Deal, and drive widespread adaptation actions. By uniting scientific rigor, stakeholder engagement, and strategic policy alignment, CRVA emerges as a powerful tool for future-proofing urban environments and guiding responsible investment decisions. Milan's experience exemplifies the broader relevance of this approach, reinforcing how the real estate sector can serve

as a pivotal catalyst for climate resilience, environmental stewardship, and long-term urban sustainability.

Keywords:

Climate Risk Assessment; EU Taxonomy; Sustainable Real Estate; Adaptation Strategies

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T_05 ENVIRONMENT AND CLIMATE (B) / 1408

Exploring the link between biodiversity, health, and climate action through the URBioPark project

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Cities face increasingly urgent challenges related to climate change. Innovative approaches are being implemented to ensure environmental sustainability for future generations. According to the World Health Organisation, a prerequisite for sustainable urban development is health (Neira, 2015). Numerous studies show that urban biodiversity contributes to human health. Aerts et al. (2018) highlight the link between green infrastructure, biodiversity, ecosystem services and health. Biodiversity benefits both mental and physical health (Sandifer et al., 2015). In particular, the presence

of greenery is associated with reduced symptoms of chronic diseases (Maas et al., 2009) and a greater perception of invigoration (Carrus et al., 2015). Conversely, a decrease in biodiversity is associated with an increased risk of contracting inflammatory diseases (Haahtela, 2019). The relationship between urban greenery and health also has repercussions on the economic and social fronts: green areas that promote health help to reduce health inequalities associated with income as well as overall health expenditure (Becker et al., 2019).

It is precisely to meet these challenges that the URBioPark project was created, part of the Research Projects of Significant National Interest (PRIN), which will be financed in 2022 thanks to Next Generation EU funds. It involves three Italian universities (the universities of Brescia, Verona and Padua) as well as the Italian National Research Council (CNR).

The project's objectives range from the academic research to the practical application: studying the correlation between human health and urban biodiversity; defining indicators for assessing biodiversity; identifying actions to maintain and increase it; raising citizens' awareness and promoting their active participation; and providing useful tools for territorial governance. In particular, the University of Brescia, in addition to coordinating and managing the project, has the task of exploring the link between the biodiversity of urban parks and human wellbeing by conducting a survey of four parks in the city.

GIS software was used for the survey to integrate health and geographical data, linking the prevalence of chronic disease derived from health database of Local Health Protection Agency to buffer zones surrounding the selected city parks. The parks were chosen using four criteria: presence of the same plant species; presence of areas with extensive tree cover; homogeneity in site morphology; heterogeneity of the context in which the parks are located. The methodology makes it possible to test whether there is a correlation between proximity to urban green areas and the incidence of chronic diseases. Despite the limitations of the method, such as the inability to account for all environmental confounding factors (e.g. air pollution) or other green areas, it offers significant advantages, including data update efficiency and replicability. By deepening the research with an analysis about specific elements (pavements, permeability, tree species), the biodiversity of each park can be assessed and correlated with human health indicators.

The practical implications of the study are numerous. By extending the analysis to surrounding neighbourhoods, it is possible to identify critical areas to be subjected to interventions such as re-naturalisation and the implementation of green networks. It is also possible to draw up a manual of best practices that can provide useful guidance on how to manage and integrate biodiversity into spatial planning and Strategic Environmental Assessment (SEA) procedures. URBioPark will not only advance urban planning by integrating biodiversity and health considerations but also provide a replicable framework for other cities.

Keywords:

Biodiversity; Climate Change; Resilience; Urban Green Areas

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T_05 ENVIRONMENT AND CLIMATE (B) / 1392**Energy saving and transition in Europe: what's the mood? A comparison of governance models****Authors:** Francesca Bragaglia¹; Umberto Janin Rivolin¹¹ *Politecnico di Torino***Corresponding Authors:** umberto.janinrivolin@polito.it, francesca.bragaglia@polito.it

The topic of energy transition and energy savings for residential buildings is a crucial issue for present and future territories both with respect to environmental and climate change challenges and with respect to issues of inclusion and social justice (Rotondo et al. forthcoming). Although the literature is very fertile in this area (see, for instance, Bridge and Gailing, 2020; Scott, 2022), there are still few broad and comparative reflections on the governance of such strategies. Drawing on data collected through the ESPON NoStaGeo research on the European continent, this contribution identifies recurring European patterns in addressing energy challenges. Moreover, through the application of six analytical dimensions of governance inspired by the previous ESPON Tango research - i.e. multilevel coordination, sectoral integration, stakeholder participation, adaptability, place-based approaches and bottom-up strategies - it classifies these patterns into a territorial governance typology composed by five models: hierarchical, multilevel, network, transition and constrained, and market governance.

Hierarchical governance (Jessop, 2002) centralizes authority, where the latter is concentrated at the national level, often focusing on compliance with EU directives but limiting local adaptability. Multi-level governance (Hooghe and Marks, 2003) exhibits shared authority across different levels of government. It balances national and regional priorities, promoting innovation and place-based solutions. Network governance (Rhodes, 1997), where actors collaborate beyond administrative boundaries, promotes cross-border collaboration, high sectoral integration and the use of smart technologies. Transitional and constrained governance is a hybrid model in transition from Hierarchical governance to Network governance, reflecting adaptation under financial and institutional constraints. It involves efforts to overcome institutional and financial barriers in countries that have been trying to tackle energy for less time and with fewer resources. Finally, market-oriented governance (Williamson, 1975), emphasizes collaboration with private actors. It relies on public-private partnerships to promote energy efficiency.

Against the more general backdrop of the typology of spatial governance and planning systems for the public control of spatial development (Berisha et al., 2021), the study allows for the identification of some clear spatial patterns that clarify how countries that are geographically close and have similar political, cultural and spatial governance traditions tend to have similar approaches to energy. The results of the work thus attempt to provide a basis for improving governance strategies aimed to concretize the European energy transition agenda.

Keywords:

Energy transition; Energy saving; Typology; Territorial governance; Europe; ESPON.

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T_05 ENVIRONMENT AND CLIMATE (B) / 1527

The Legacy of Experience: Reflections on Climate Transition Strategies in Medium-Sized Italian Cities

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In recent years, many European cities have adopted new planning tools to manage climate change through new strategies, rethinking the relationship between the city and nature and innovating urban planning practices. Around 60% of the European population lives in small and medium-sized cities (10,000-250,000 inhabitants) (Selada et al., 2010), which often face climate challenges without adequate human and financial resources. To address this, these cities often seek external funding from institutions or foundations through competitive tenders. The strategic plans developed from these inputs and adopted by local administrations not only identify specific actions but also aim to integrate adaptation and mitigation strategies into mainstream planning tools, thereby promoting sustainable development and climate resilience. The case study is the Strategia Clima promoted by the Fondazione Cariplo, which aims to develop Climate Transition Strategies (CTS) in the territory of the Lombardy region.

Urban planning has sought to reintroduce nature into cities and to reflect on the dialectical relationship between the individual and green spaces. From Howard's Garden City and Cerdà's Barcelona Plan to modern climate adaptation strategies, improved urban living conditions have been linked to the quantity, usability and quality of green spaces. Initially focused on hygiene, urban planning now sees cities as systems closely linked to natural elements, adding objectives such as biodiversity protection, urban drainage, heat mitigation and recreational use. Experimental approaches are often adopted in urban climate adaptation and mitigation policies, especially in competitive tendering (Bulkeley and Broto, 2013; Caprotti and Cowley, 2017). It is crucial to assess the socio-ecological effectiveness of these experiments and their implications for urban systems and planning policies. Drawing on the concept of social nature (Castree and Braun, 2001), this study examines how different ideologies, imaginaries and goals shape approaches to nature, highlighting the relationship between society and nature, or 'socio-natures' (Swynedouw, 1996), created by climate strategies. Finally, drawing on Urban Political Ecology (Heynen et al., 2006), the research assesses the social and political outcomes of these interventions, focusing on inequalities resulting from design choices, actions and places. This contribution examines how local communities interact with green spaces and interpret the concept of nature within the Climate Transition Strategies (CTS) of medium-sized Italian cities. It explores urban spaces that reflect diverse approaches to urban nature, ranging from conservation to the implementation of "new natures" (Tononi, 2025) aimed at reducing temperatures, improving drainage, and increasing biodiversity. The study analyzes the legacy of first-generation strategies (2020), focusing on both the results of implemented actions and their influence on planning instruments, comparing initial objectives with the results achieved to date. Through a methodology that compares CTS adapted to local needs via a common funding call, the research delves into different interpretations of nature's role in these strategies. It examines the commodification of natural elements, their use as tools for rebranding city images, and their potential to reshape the relationship between society and nature. Additionally, it assesses how global

climate policies are localized to address specific needs for protection, conservation, and the reproduction of natural elements. The analysis aims to identify ways and results to interpret the concept of nature in climate policies from global and continental scale inputs to the local scale, analyzing climate transition strategies that consider the needs and diversity of the territories and communities they affect.

Keywords:

Climate Transition; Medium-sized cities; Socionatures

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T_05 ENVIRONMENT AND CLIMATE (B) / 1455

Trade-offs in Rural Italy: Analyzing the Unbalanced Integration Between Agriculture, Biodiversity, and Solar Energy

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The shift to renewable energy is transforming rural landscapes, presenting both opportunities and challenges for biodiversity conservation and agricultural sustainability. This study examines the spatial and functional relationships between agricultural land, biodiversity conservation, and ground-mounted photovoltaic (PV) deployment in Italy, addressing the “Land Use Gap” emerging from competing land resource demands. This research evaluates how current land use practices align with the European Union’s biodiversity restoration and renewable energy targets by analyzing three case studies —Ravenna in northern Italy, Viterbo in central Italy, and Brindisi in southern Italy. Each case study illustrates distinct dynamics of land management for energy production. Ravenna features small, scattered PV installations interspersed with a few large facilities. Viterbo presents an extensive energy landscape dominated by large-scale PV fields, while Brindisi integrates medium-sized PV systems within agricultural mosaics. Findings reveal that while Viterbo surpasses the EU’s PV installation threshold, it falls

significantly short of biodiversity targets, leading to land-use conflicts and risks of long-term ecological degradation. In contrast, Ravenna experiences a shortfall in PV deployment and biodiversity integration. Meanwhile, Brindisi's existing landscape features provide a basis for enhanced biodiversity, but the increasing prevalence of medium-scale PV installations risks homogenizing agricultural patterns.

The expansion of photovoltaic systems necessitates reassessing land management strategies to ensure agricultural viability while mitigating biodiversity loss. Key spatial trends identified include clustering large-scale PV installations in former agrarian areas, leading to soil consumption and the fragmentation of ecological corridors. By quantifying land cover changes and biodiversity indicators, this research highlights the uneven impact of renewable energy expansion on rural landscapes, underscoring the need for targeted interventions that balance energy transition goals with environmental conservation.

A crucial insight from this study is the importance of integrating PV systems within agricultural landscapes rather than displacing farmland. In Ravenna, small-scale PV installations demonstrate a distributed energy production model that can coexist with intensive agriculture, provided that ecological corridors and landscape features are preserved. Viterbo's case highlights the risks of excessive land conversion, where large contiguous PV fields disrupt traditional agricultural practices and ecological networks. Brindisi shows that medium-scale PV systems can be incorporated within agricultural mosaics, but careful planning is needed to prevent landscape simplification and habitat fragmentation.

By situating the findings within the broader European Green Deal objectives and the EU Biodiversity Strategy for 2030, this study provides a conceptual framework for designing sustainable land use planning that harmonizes agricultural, ecological, and energy priorities. A key conclusion is the urgent need to integrate energy planning with territorial planning to address the challenges posed by climate change effectively. We can develop resilient rural landscapes that support environmental and socio-economic sustainability through a coordinated approach that considers land use efficiency, ecological integrity, and energy transition goals.

Keywords:

land use planning, solar energy, biodiversity, agriculture

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Carbon Neutrality and Spatial Equity in Urban Planning: Assessing Plan Quality in South Korea

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Achieving carbon neutrality has become a key objective in global sustainability efforts, shaping climate policies and spatial planning strategies. In response to climate change, comprehensive plans are being developed globally to assess the impact of greenhouse gas emissions and implement strategies for their reduction. Many cities are formulating strategies to address this challenge. Moreover, the increasing emphasis on inclusion has positioned equity as a central consideration in recent urban climate action plans addressing carbon emissions and reductions (Fitzgerald, 2022). South Korea has also adopted climate justice as a fundamental principle in its carbon neutrality legislation. However, despite Urban Plans being comprehensive master plans that include various sectors such as demographics, spatial structure, and environment, they lack explicit references to climate justice. There is also a lack of review of how local governments are currently implementing carbon neutrality in urban spaces and how they are incorporating equity into their plans.

This study assesses how carbon neutrality has been spatially integrated into urban planning by considering both emission reduction and spatial equity. To achieve this, The Plan Quality Evaluation framework (Baer, 1997) is applied to evaluate the credibility and effectiveness of urban plans. Plan quality analysis serves as a learning mechanism for improving planning processes (Berke & Godschalk, 2009). Drawing on key attributes of high-quality plans (Baker et al., 2012), an evaluation matrix is developed, consisting of five components: (1) Information Base, (2) Vision, Goals, and Objectives, (3) Options and Priorities, (4) Actions, and (5) Implementation and Monitoring. Additionally, an assessment of distributive equity is incorporated to determine whether social justice considerations are reflected in carbon-neutral urban planning. Fitzgerald's (2022) concept of climate equity and South Korean legal definitions provide the basis for evaluating the equitable distribution of benefits and burdens associated with carbon-neutral policies across different communities. Equity outcomes were defined as the extent to which the benefits and burdens of decarbonization measures are distributed across different groups or communities. Based on this equity definition and concept of carbon neutrality, we developed the analytical framework (Build 20 detailed metrics for 5 planning components). Each assessment criterion was rated on a five-point scale (0–4). The evaluation was conducted on cities that formulated urban plans after December 2021, following the introduction of South Korea's carbon neutrality guidelines for urban planning. The assessment included Seven cities: two with populations exceeding one million (Daejeon and Suwon) and five with populations below 500,000 (Wonju, Suncheon, Chungju, Jeongeup, and Sangju).

The findings indicate that while (1) Information Base and (2) Vision, Goals, and Objectives —are formally embedded in national guidelines, their substantive presence in urban plans remains limited. The strategic emphasis on carbon neutrality within local plans is relatively weak. Furthermore, (3) Options and Priorities, (4) Actions, as well as (5) Implementation and Monitoring, are mentioned but not sufficiently adapted to local spatial characteristics. Monitoring frameworks remain underdeveloped, and distributive equity considerations are largely absent. These findings suggest the need for spatial overlay analysis, integrating demographic data to assess spatial inequalities in carbon emissions and policy impacts. Moreover, the importance of developing spatial indicators and technical support tools to effectively integrate carbon neutrality into urban planning is emphasized.

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Keywords:

Carbon neutrality; Urban Plan; Plan Quality; Climate Distributive Equity

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T_05 ENVIRONMENT AND CLIMATE (B) / 1545

Reintroduction of health impact assessment in Bulgarian city planning -why and how?

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Background: Bulgaria has established practices in Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA), yet the integration of applied Health Impact Assessment (HIA) research findings is limited or absent in the practice of urban planning, governance and development. This has led to poorly informed planning and decision making in recent years. Meanwhile, keeping the low quality of the urban environment in terms of pollution and associated health risks (Dzhambov et al., 2023; Dzhambov et al, 2024; Khomenko, 2024), ultimately affects citizens' quality of life. To overcome existing shortcomings in the process of urban planning and governance, there is a need for improved health-awareness through health-oriented planning and decision support tools at city and sub-city level.

Aim: The paper's two major aims are to answer the questions of why there is a pressing need for reintroduction of advanced HIA in the Bulgarian spatial planning system and how this can be accomplished carefully without excessive regulatory burden to city authorities, planning and design experts, (re)developers and citizens.

Methods: Drawing on experience from one pilot and three research projects, conducted in major Bulgarian cities, this paper proposes a framework for reintroducing and improving the quality of evidence-based Health Impact Assessments (HIAs) in the country. The study offers valuable insights, combining three approaches:

1. A comparative analysis of international regulations and the current state of health impact assessment practices at the urban level in Bulgaria; An overview of urban environment - public health interactions and exposure patterns across Bulgaria's five largest cities, with a particular focus on Sofia, highlighting key exposures such as air, noise, and light pollution, alongside the characteristics of green spaces and their accessibility; A conceptual reframing of approaches to address urban environmental pressures and develop balanced strategies for creating healthier urban environments in Bulgaria in the near future.

Results:

The comparative analysis of regulations regarding HIA is represented by an unfolding matrix of procedural and substantive issues. As part of the broader city HIA landscape, specific gaps in application are outlined in relation to the Bulgarian urban planning and design and the parallel urban environmental and health protection systems.

The overview of the interactions between urban environment and public health as well as the mapping and modeling of exposure patterns clarifies the current data and knowledge base thus systemizing and overlaying the available evidence.

The conceptual vision for the ways of reframing and simplifying the existing policies, regulations, tools, and measures is attempting to respond to the tensions between urban development and health protection, showing a path that can safeguard wellbeing of Bulgarian city dwellers.

Conclusions: We aim to stimulate a discussion on the key principles for healthy and sustainable development of the urban living environment as well as the health support system in decision making affecting urban development, planning and design. That system can benefit from a set of tools and interlinkages including qualitative and quantitative assessment of the expected impact, from planned development and regeneration, on public health in terms of morbidity, mortality and well-being, as well as associated socio-economic burden.

Keywords:

city planning; urban environment; health impact assessment; exposures; decision framework

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T_05 ENVIRONMENT AND CLIMATE (B) / 211

Identification of hotspots in a regional green infrastructure: A comparative analysis of the regional contexts of Campania and Sardinia, Italy

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Assessing and mapping Ecosystem Services (ESs), i.e., the material and non-material benefits provided by ecosystems to humans, is essential for quantifying the impacts of land uses and their changes, understanding the spatial mismatch between demand and supply of ESs, identifying priority areas for conservation, and evaluating the success of conservation strategies. Spatially targeting ES hotspots—“areas with a high biophysical and cultural ES value”(Smart et al., 2021:3)—can optimize resource allocation, hence maximizing the efficiency of conservation efforts.

Within the framework of the GICNES project (<https://prin.unica.it/gicnes/>), this study develops a methodological approach for mapping ES hotspots, and compares the results across the Italian regions of Campania and Sardinia, thus facilitating the identification of priority areas for conservation efforts. Spatial identification of ES hotspots is crucial to supporting decision-makers in designing, implementing and managing a Regional Green Infrastructure (RGI), i.e., a strategically planned network of natural and semi-natural areas that provide multiple ESs, support biodiversity across a region, enhance environmental connectivity, and promote climate change adaptation (EC, 2013; Sokolova et al., 2024).

The structure of the study develops as follows.

The first step involves mapping and assessing three ESs crucial for climate change adaptation, with a view to identifying priority areas to be included in the RGI strategic spatial design. Specifically, the study focuses on Carbon Capture and Storage (CCS), Habitat Quality (HQ), and Land Surface Temperature (LST), all of which are assessed biophysically. The spatial framework for CCS is defined using the “Carbon Storage and Sequestration” model, part of the InVEST suite, which estimates the amount of carbon stored in land parcels based on land cover data and information on carbon pools. HQ is assessed using the “Habitat Quality” model, also part of the InVEST suite, which integrates land cover data with information on habitat threats and their impacts on ecosystems. LST data are obtained from the 30-meter resolution Landsat 2 - Level 2 collection satellite imagery, available from the United States Geological Survey (USGS).

Thereafter, hotspots, i.e., parcels of land showing statistically significantly higher values compared to their surrounding areas, are identified for each of the three ESs, as well as for their bundles. Among the methods used in the literature for hotspot delineation, the

statistical method based on the Getis-Ord G_i^* statistics is used, as it was found to provide the most useful information for planners at the regional or landscape level (Bagstad et al., 2017).

Finally, the results from Campania and Sardinia are compared to identify similarities and differences.

By providing a robust, data-driven foundation for spatial prioritization, this approach contributes to more sustainable land-use planning that supports both ES preservation and climate change adaptation. The flexibility and adaptability of this approach make it applicable in multiple contexts, assisting decision makers in the identification of crucial areas for inclusion in the RGI. These insights can then inform planning policies intended to enhance the supply of ESs and address climate change challenges.

Keywords:

Ecosystem services; Carbon sequestration; Habitat quality; Land surface temperature; Hotspots

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T_05 ENVIRONMENT AND CLIMATE (B) / 1551

Blending Nature with Technology: Integrating RES with NBS or carbon neutral cities

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Nature-based solutions (NBS) offer a promising framework for addressing urban environmental challenges while also enhancing social and economic resilience. As cities seek to achieve climate neutrality, the integration of NBS with Renewable Energy Sources (RES) presents both an opportunity and a challenge requiring an interdisciplinary approach and an innovative planning strategy. In this context, the present study aims to explore how NBS can contribute to urban resilience and climate neutrality, focusing particularly on their possible impact on urban climate adaptation, (e.g., reducing the effects of the urban heat islands) and mitigation, by facilitating local energy production through synergies with RES. As part of the ReGenWest project, an EU Cities Mission pilot, this research aims to advance the integration of nature-based solutions into dense urban environments and to investigate pathways for integrating RES and NBS. A combination of theoretical principles and practical applications provides insights into the intersection of climate adaptation and mitigation, and highlights the role of urban planning and design

The western center of Thessaloniki, Greece, and particularly the Railway Station District,

serves as the focal pilot area. This district faces escalating challenges related to climate change, including heat island effects, air pollution, and flash flooding. It is also affected by mobility disruptions linked to the prolonged construction of the metro, and socio-economic disparities. Given its ongoing transformation, the area seems to be an ideal case for exploring how integrated NBS (i.e. green infrastructure and green networks) and RES solutions (i.e. photovoltaic panels and solar shading) can enhance urban resilience. Key areas of intervention include the transformation of public open spaces and the reconfiguration of neglected urban pockets, some of which contain underutilized green spaces.

However, designing and implementing these approaches requires overcoming several technical, regulatory and financial barriers. International frameworks define NBS as using natural processes to address these challenges (barriers) in a sustainable and cost-effective manner, while also providing a significant range of ecosystem services and associated benefits. Recent literature and empirical applications highlight that combining NBS with RES can enhance ecosystem services and contribute to energy efficiency and pollution reduction. This research reviews the best practices and strategies for this kind of integration, focusing on interdisciplinary targets/criteria such as urban environmental enhancement, social equity, and economic feasibility, while also considering governance mechanisms and the commitment required to adopt and implement these solutions effectively. Key design interventions examined include permeable pavements, tree canopies, green roofs, and blue infrastructure for water management together with RES solutions either embedded within NBS or co-located into the same public spaces. Ensuring the social acceptability and the long-term viability of such initiatives requires addressing governance mechanisms, financial incentives, and participatory planning processes.

A structured methodology, including best-practice analysis, literature review, spatial data analysis, surveys, and workshops is used to develop an integrated NBS-RES framework. The study also identifies innovative design typologies that blend NBS with RES and ensures that the proposed solutions align with the characteristics of the local urban environment, as well as with local/community needs. Concerning the latter, stakeholders - including local authorities, researchers, urban planners, and community representatives - are engaged in a co-design process that allows for adaptive and context-specific planning.

A critical component of this research is understanding the institutional and regulatory landscape that influences the adoption of NBS, as well as the integration of NBS-RES solutions. Policy instruments and governance models are examined to identify enablers and barriers to implementation. By aligning scientific research with local policy and planning frameworks, this study aims to establish a replicable model to combine climate mitigation and adaptation solutions at the local level.

Keywords:

Nature-Based Solutions; Renewable Energy Sources; Urban Resilience; Climate Neutrality

T_05 ENVIRONMENT AND CLIMATE (B) / 1530

Urban heat islands assessment for building city resilience: a novel approach

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Europe is recognised as the fastest-warming continent where the temperatures are rising twice compared to the global average rate and the summer of 2024 was the hottest (C3S, 2024) causing a negative impact on people's health, city functions, nature and economy (Aboulmaga et al., 2024; Tong et al., 2021). Thus, areas with urban heat islands (UHI), as the most vulnerable areas to heat waves in cities, became a core topic

addressed by the Be Ready project, co-financed by the INTERREG Danube Programme (Be Ready, 2024). The project's main aim is to jointly develop strategies for improving climate change preparedness and resilience of 10 involved cities in the project.

Oke (2011) defined UHI as a relative warmth of the city compared to the surrounding rural areas. This phenomenon is caused by the capacities, especially construction materials of storing and releasing heat energy from the sun into the urban climate (Prashad, 2015). Mapping critical areas within inner cities is essential for developing effective urban strategies. While researchers have developed methodologies for assessing cities in terms of UHIs, these approaches often focus solely on the physical aspects of the built environment, and they do not encompass a broader range of factors. To address this gap, the Be Ready project has developed a novel, comprehensive method for assessing UHIs. This new assessment tool integrates multiple dimensions which are beyond the physical environment, making it applicable to other cities and providing a more holistic understanding of urban heat dynamics.

The Be Ready risk assessment tool encompasses four key elements: the exposure of buildings and surroundings, the sensitivity of equipment and materials, the identification of risk groups among city residents, and the preparedness and adaptive capacity of cities. This comprehensive approach was implemented in ten cities across the Danube region, including Chisinau (Moldova), Galati (Romania), Heviz (Hungary), Kranj (Slovenia), Niš (Serbia), Podgorica (Montenegro), Ratibor (Czech Republic), Sofia (Bulgaria), Zenica (Bosnia and Herzegovina), and Varaždin (Croatia). These cities applied the methodological framework to assess urban areas vulnerable to the negative effects of UHIs, identifying critical areas that require attention in the development of climate change strategies. The study aims to evaluate the level of city preparedness for UHIs and to identify the critical factors influencing the assessment across different urban contexts.

This paper aims to contribute to a comprehensive understanding of UHIs, elucidating their causes and the negative effects that must be addressed in urban climate adaptation strategies. Assessment tools are instrumental for city authorities, local decision-makers, urban planners, and climate experts in identifying critical zones within cities, and vulnerable risk groups, and in formulating policies and strategies tailored to the specificities of each city and its micro-locations. The implementation of the Be Ready risk assessment tool presents an opportunity for cities to enhance their resilience and foster further development adaptable to climate change challenges, incorporating other risk factors associated with the adverse effects of this.

Keywords:

urban heat island; climate change; urban resilience; cities

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T_05 ENVIRONMENT AND CLIMATE (B) / 385

Energy Hubs Under Transformation and the Implications for Spatial Planning: The Case of Ravenna, Italy

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This contribution arises from the ongoing research project *HyperSCAPES: Extreme Infrastructure Projects and New Forms of Urbanity in the Anthropocene*, and the MSCA project *Integrating Energy and Logistics Hubs: Sustainable Infrastructure Development in Second-tier Mediterranean Ports*, both conducted at the Interuniversity Department of Regional and Urban Studies and Planning, Politecnico di Torino. The study investigates the redefinition of spaces, environments, and economies following major European and national investments in energy and logistics infrastructures, with a particular focus on the ports of the Adriatic region.

The EU has allocated 256 million euros to upgrade the Adriatic port infrastructures (Bodewig 2020), and national policies, such as Italy's National Recovery and Resilience Plan (NRRP), have provided additional resources to accelerate their development (Twrdy and Zanne 2020; Catalano et al. 2022). While most investments prior to 2022 cantered on logistics and commerce, the Russian-Ukrainian War has shifted priorities toward energy infrastructure (Berisha 2023). Current strategies emphasise upgrading networks and facilities, diversifying production and supply systems, and accelerating the transition to renewable energy sources (Falcone et al. 2021). These initiatives have spurred a wave of infrastructural projects, driving significant transformations in both inland and maritime spaces. Drawing upon the case of Ravenna, this contribution examines how changes in energy supply and the transition to renewable sources are reshaping long-established industrial sites into novel energy hubs, and the implications these transformations pose for spatial planning.

The port-city of Ravenna, located in northern Italy, provides a compelling context for this investigation. The port was founded by Enrico Mattei in the 1950s as the centre for off-shore gas extraction in the Adriatic Sea. Under the impetus of European and national energy policies, the Port Authority, in partnership with local stakeholders, established a Renewable Energy Community in 2022, that is, an association of public bodies and enterprises to self-produce and manage renewable energy using the existing public grid. Within this framework, the projects underway are acting on three fronts. First, the optimization of the gas supply chain with a new one-billion-euro LNG terminal is planned for the end of this year. Second, the production of renewable energy with one billion euros to build two 300-MWe offshore wind farms, a 100-MWe floating solar farm, and a 50-MWe energy storage facility. Finally, the third goal is the reclamation of industrial sites and the development of carbon capture storage capabilities. ENI has designated a 45-hectare disused industrial site for a solar farm, and another 23-hectare area for soil bio-recovery and industrial waste management; while its one-billion-euro Carbon Capture and Storage (CCS) project plans to stock CO₂ in depleted offshore gas fields. These initiatives are designed to establish Ravenna as the largest green energy hub in the Mediterranean. However, they also carry significant implications for the surrounding environment. The projects alter maritime ecology, reshape the urban landscape with new functions, and introduce complex interactions between energy production, urban uses, and environmental conservation. Moreover, these transformations are taking place in a fragile region: the Adriatic Sea is heavily polluted, and Ravenna has suffered severe flooding in the past two years.

By analysing the energy projects in Ravenna, this paper reflects on three critical issues: 1) The spatialization of EU green energy policies and funding; 2) The emergence of new energy landscapes and their environmental impacts; 3) How local stakeholders address the environmental controversies surrounding these energy projects. These reflections aim to contribute to the discussion of alternative planning approaches and methods for achieving a more sustainable integration of energy infrastructure into the existing landscape.

Keywords:

energy projects; urban and landscape transformations; infrastructures; port-cities; Adriatic Region

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T_05 ENVIRONMENT AND CLIMATE (B) / 1565

Towards Transformative Planning Frameworks and Urban visions for Climate Resilience: A comparative study on convergencies and conflicts at redevelopment sites in Valencia, Milano and Berlin

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Some European cities have undergone rapid expansion of inhabitants and employment opportunities during the last two decades. Consequently, their spatial development targets have gradually shifted from largely exploited inner city brownfield redevelopment sites towards densification-oriented redevelopment of areas at their urban fringes. However, such sites bear specific challenges. During modern industrial growth, they were widely intended for expansion to primarily accommodate monofunctional areas, creating clusters of functionally separated industrial, transport, and logistic as well as low-density housing sites. Despite the emergence of new multifunctional and inclusive urban paradigms, this monofunctional planning approach towards urban fringes continued during the post-modernist and urban renaissance era of the late 2000s,

especially in the urban fringes. Furthermore, cities' dominant planning approaches are currently being challenged by the rigidity of their structural and functional logic and planning frameworks.

The global conditions of urban development processes are dramatically changing and place new demands on planners. Planners face the need for combining issues of densification along with climate adaptation, the energy crisis, and the consequent need for spatial-functional flexibility of urban fabrics and functions to cope with climate change adaption and mitigation. In this regard, existing planning frameworks need to be adapted or updated to adequately address intertwined planning challenges. Urban visions for climate resilience tend to be more forward-thinking, integrating climate change considerations from the outset. Based on the collated experience from three case studies from peri-urban sites in different European cities (Valencia, Milano and Berlin), this paper focuses on discussing two interrelated topics. First, it reveals contemporary shifts in planning and design practice caused by the emergence of de- and rescaling spatial trajectories, the concurrence of divergent development targets, and the gradual accommodation of innovative technologies to support decarbonisation. Also, it analyses how these evolving scenarios affect planning conditions at the site (frameworks, rules, as well as governance). Secondly, it discusses detected convergencies and conflicts between modern growth-oriented planning practices and the actual development challenges by framing these shifts into the transformative governance discourse.

References:

Transformative Planning; brownfield redevelopment; Climate Resilience; densification; energy crisis; urban vision; periurban landscape

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Preserving the past or protecting the future? Harmonizing Cultural Heritage and Climate Adaptation in Siena

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Climate change presents historically and culturally significant cities with unique challenges in adapting to its impacts while preserving their heritage. This research investigates the interplay between cultural heritage preservation and climate adaptation in Siena, a UNESCO World Heritage site since 1995. The study, born from the ISOCARP YPP (Young Planning Professional) Workshop "Valleys of Siena: Global Ideas for Local Connectivity," explores the challenges posed by climate change, particularly the urban heat island effect, within the city's dense historical fabric.

Through GIS analysis, field research, and a comparative study of successful climate adaptation strategies at other UNESCO World Heritage sites, the project identifies several key challenges facing Siena. High built-up density, with limited green spaces and extensive paved surfaces, significantly contributes to the urban heat island effect. Furthermore, the town's green valleys, while significant, are often disconnected from the urban core, limiting their cooling effect. A lack of small-scale greening initiatives within the historic centre hinders microclimate regulation. Finally, existing green spaces and public areas may not adequately support social interaction and community building, limiting opportunities for meaningful engagement.

Drawing inspiration from successful case studies such as "Oasis Schoolyards" in Paris and "Streets for Kids" in Barcelona, the research proposes a series of "families of solutions" to address these challenges. These solutions encompass: (i) water management

to improve water retention and drainage, mitigating heat island effects; (ii) ecosystem enhancement to improve existing green spaces and introduce small-scale greening initiatives within the urban fabric; (iii) community engagement to empower local communities to participate in the planning and implementation of climate adaptation measures; (iv) heat control to implement strategies that reduce heat absorption and increase cooling, such as shading devices and the de-impermeabilization of surfaces; and (v) the creation of inclusive spaces that foster belonging by developing accessible and welcoming public areas that encourage social interaction and community building. The project emphasizes the crucial need to find a balance between preserving Siena's historical character and adapting to the challenges of climate change. By focusing on small-scale interventions, temporary structures, and community-led initiatives, the research aims to demonstrate how climate adaptation can be seamlessly integrated into the urban fabric of a UNESCO World Heritage city in a sensitive and respectful manner.

This research provides valuable insights for other heritage cities facing similar challenges, showcasing how a collaborative and multidisciplinary approach can effectively address the complex interplay between cultural heritage preservation and climate adaptation.

Keywords:

Cultural heritage; Climate Change; Siena; UNESCO; Urban planning

T_05 ENVIRONMENT AND CLIMATE (B) / 714

Research on Cross-domain Eco-Spatial Synergistic Governance based on the Systems Ecology Paradigm

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Harmonious coexistence between human beings and nature is the core objective of social development, and the need for collaborative governance of cross-domain ecological space is becoming more and more prominent. With the deepening of urbanisation, ecological space significantly crosses multi-level administrative boundaries, which involves the synergistic application of multiple governance subjects, complex governance arenas and diversified governance tools. In this study, the theoretical foundations of system ecology and cross-domain governance are firstly sorted out, and a collaborative governance framework is constructed, which emphasises the complexity and multi-dimensional interactions within the ecological space from the holistic and dynamic perspectives. Through the analysis of typical cases and the construction of theoretical models, we identify the core evolution laws in the governance process and reveal the characteristics of governance mechanisms at different stages. Secondly, based on system analysis, scenario modelling and empirical research, we identify and classify the key influencing factors of cross-domain eco-spatial collaborative governance, and use structural equation modelling, social network analysis and other methods to construct the role path model, revealing the role mechanisms and interrelationships of different factors in the governance. Finally, Wuyi Mountain National Park is selected as a typical ecological space in China as an empirical object to carry out multi-scale in-depth analysis and validation, to explore the practical possibilities of optimising the synergistic governance paths, and to put forward targeted policy recommendations.

Keywords:

Trans-domain ecological space; Systems ecology; Collaborative governance; Governance mechanisms

T_05 ENVIRONMENT AND CLIMATE (B) / 1533**Depoliticizing Urban Water Management: Governance, Justice, and the Sponge City Initiative in China****Author:** Xiaowen Zhan¹¹ *University of Manchester***Corresponding Author:** xiaowen.zhan@manchester.ac.uk

Nature-based solutions (NbS) are increasingly adopted worldwide to tackle urban environmental challenges, but their governance and implications for environmental justice remain contested. Current research on the implications of NbS on environmental justice often critiques NbS projects for reinforcing inequalities through neoliberal governance and exclusive planning, with limited focus on how governance techniques like discourse-making and framing shape justice outcomes. This study addresses this gap by examining the governance of Sponge City initiatives in Ningbo, China.

Using 16 in-depth interviews with practitioners, officials, and academics, along with policy document analysis, this research investigates how multi-scalar governance, spanning national to municipal and city-district levels, frames Sponge City as a technical fix for urban water management. This technocratic framing depoliticizes projects, obscuring social inequalities, and limiting the inclusion of marginalized groups in decision-making. At the same time, despite the centralized, top-down implementation of these initiatives, academic institutions, government consultancies, private developers, and residents play distinctive roles, creating a complex governance landscape.

Findings reveal that environmental injustices stem not only from exclusive decision-making but also from the framing of urban issues (in this case, flooding) and the technical narratives that guide responses. Project benefits, including flood resilience and green amenities, are often concentrated in wealthier neighborhoods or development projects in commercially profitable areas, while disadvantaged communities vulnerable to flooding face neglect or displacement driven by speculative development.

By situating environmental justice within broader socio-technical governance processes, this study highlights how systemic inequities are embedded in policy frameworks and institutional practices. It advances understanding of NbS governance in an under-researched socio-political context where socialist legacies intersect with neoliberal trends. The research underscores the need for inclusive governance approaches that prioritize equity, offering actionable insights for scholars and policymakers.

Keywords:

nature-based solutions; water governance; justice; framing; discourse

T_05 ENVIRONMENT AND CLIMATE (B) / 1657**Urbanization, Biodiversity, and Ecosystem Services in Norway: Challenges and Strategies for Sustainable Land Use.****Author:** Anna Kaczorowska¹

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Urban areas are dynamic and complex landscapes where the effects of urbanization on vegetation are influenced by socio-ecological processes across multiple scales. Urbanization significantly impacts vegetation and land use, driving the fragmentation of green-blue areas and biodiversity loss. Understanding urban biodiversity is critical for protecting ecosystem services (ES); however, ecological assessments of land-use changes remain challenging due to urban complexity. There is renewed interest in reconnecting, restoring, and integrating nature into the built environment to provide a wide range of benefits for urban residents, infrastructure, and economies. These benefits include climate-change regulation, local food production, recreation, human health, and many others. In Norway, "Area neutrality" (Arealnøytralitet) is currently promoted as a municipal land-use management system that prioritizes nature protection in urban development and extends the net-zero philosophy to nature loss. This article aims to address the following questions: How does urbanization in Norway affect biodiversity and ES in urban areas? What planning strategies and tools can bridge the science-policy gap to address uncertainties in biodiversity loss, land-use change, and climate adaptation? The findings highlight the need to develop place-based empirical knowledge, promote citizen science, and define appropriate measures and policies for better integrating ES into decision-making and enhancing the quality of urban green-blue spaces.

Keywords:

ecosystem services ; decision making ; land use planning

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The Art of Coping with Disasters: Understanding The Transition Towards a Resilient City-Based Approach in Sustainable Planning

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Sustainability can be summarized as planned consumption and production that considers environmental, social, and economic factors to improve the quality of life for present and future generations. Given that it addresses issues ranging from the evaluation of underground and surface resources to waste management, this approach is highly multifaceted. The concept of sustainable development emerged in response to the negative environmental impacts caused by industrialization since the second half of the 20th century and remains a central issue on global agendas. However, current data indicates that the goals set forth have not been achieved. With increasing environmental degradation, global climate change has now reached a crisis level. As these ecological issues have evolved into physical, economic, and social challenges, urban priorities have also shifted.

The resilience of cities, especially in response to sudden, unprepared, and severe natural disasters, has gained increasing significance. While long-term sustainable development goals remain important, their implementation has become an ideal rather than a reality. Over the past two decades, urban resilience has become a key concept in planning agendas, defined as a system's ability to prepare for threats, absorb sudden changes, recover from unexpected disruptions, and adapt to permanent stress or destructive events.

In this study, the coastal settlement of Zonguldak in northwestern Turkey, with a population of approximately 588,000, was selected as the case study. In addition to its numerous unique environmental values, Zonguldak has been dramatically affected by landslides, floods, earthquakes, avalanches, and mining-related sudden subsidence (known as "tasman") within a single year, as recorded by the Disaster and Emergency Management Presidency (AFAD) in 2021. With a disaster recurrence frequency of less than five

years, Zonguldak ranks among the top five cities in Turkey and can be referred to as a “city of disasters.”

In this study, nonlinear canonical correlation analysis was used to simultaneously evaluate natural disaster data, climate change data, environmental pollution data, infrastructure data, and socio-economic data. The findings reveal a chaotic situation characterized by interwoven problems in Zonguldak. An analysis of upper- and lower-scale plans prepared for the city indicates that sustainable development goals have not been achieved, and problem areas have intensified due to disaster management challenges. Despite being a planned city even before the Republican era (before 1923), it has failed to achieve sustainability goals through planning.

On an international level, in 2015, United Nations member states agreed on the “2030 Agenda” with 17 Sustainable Development Goals (SDGs), calling on the world to end poverty and protect the planet. However, a report published in 2023 indicated not only a lack of progress toward these goals but also a regression compared to four years ago. The United Nations warned that future crises could exacerbate vulnerabilities, undermine previous achievements, and make development more unsustainable unless immediate, transformative, and realistic adjustments are made. According to a detailed trend analysis covering the years 2020-2023, no goal outlined in the SDGs has yet been fully achieved. Indicators such as ending poverty, promoting health and well-being, fostering decent work and economic growth, ensuring quality education, providing clean and accessible energy, promoting responsible consumption and production, and strengthening peace, justice, and institutions have shown regression rather than progress (United Nations, 2023).

In conclusion, both internationally and locally, 2025 is increasingly viewed as a late date to set long-term goals for the planet. The large-scale disasters caused by human-induced disruption of the natural balance have become more frequent. Therefore, without abandoning sustainability policies, setting rapid intervention targets focused on reducing urban vulnerabilities and enhancing disaster resilience is particularly important for developing countries like Turkey, which have high economic fragility.

Keywords:

Urban Resilience; Sustainable Urban Planning; Disaster Risk Reduction; Zonguldak; Turkey

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T5_ENVIRONMENT AND CLIMATE (O) / 127

Climate-related knowledge in urban masterplans

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Comprehensive urban masterplans, which regulate the growth and development of entire towns and cities, are a central arena for enacting climate-related policies, such as emissions reduction and adaptation. However, the climate-related knowledge that goes into these plans is understudied.

Knowledge in planning, in general, has been extensively researched. This includes, on the one hand, technical and technocratic forms of knowledge which are relatively opaque to non-professionals and generally pro-growth in orientation. On the other hand, local, lay and interpretive knowledges are also seen as playing a role, albeit a subordinate and secondary one (if at all). Climate-related knowledge is unique in that it is on the one hand technical, positivist and technocratic, yet not explicitly pro-growth and ostensibly derived from fields not directly related to planning, such as ecology and climate science.

We thus ask to what extent climate-related knowledge is evident in Israeli urban masterplans, and evaluate how the extent of climate-related knowledge in masterplans is related to cities' socioeconomic profiles (e.g. population size, affluence, centrality). Additionally, we explore what kinds of knowledge inputs are evident in masterplanning discourses, and which actors these knowledge inputs are associated with. Finally, we attempt to trace this knowledge back to its sources - before it reaches the planning process and is translated into practical planning actions - and identify the fields and disciplines in which it originates.

We assess these questions through an analysis of the discourses produced during eleven comprehensive urban masterplanning processes in a diverse cohort of Israeli cities over the past decade and a half. This discourse takes place in a variety of discourse arenas, both official and unofficial, including planning board hearings, public participation exercises, media and social media publications, municipal websites and so on. We employ a combination of computerized distant reading techniques, which identify common words and phrases in text, with close reading techniques such as critical discourse analysis. We use this hybrid methodology to analyze large corpora of text that are generated in masterplanning processes, which we gathered systematically as part of this study.

We found that discursive expressions of climate-related knowledge were relatively limited in most of the cities in the study, with the only significant expressions observed in three cities which represent the upper socioeconomic tier of the sample. This finding indicates that climate-related planning may be considered a luxury, rather than a necessity, in less affluent contexts.

In the cities in which climate-related knowledge was evident in the discourse, we observed that the knowledge itself took different forms and was associated with different actors. For instance, in one city climate-related knowledge was framed in a scientific-normative way, and primarily expressed by activist lay citizens, rather than by professional planners. In another city, climate-related knowledge was mainly identified with planning professionals, who framed it technocratically and procedurally. This suggests that climate-related knowledge in urban masterplans is not uniform, and may take on diverse forms in planning discourses.

Keywords:

Knowledge; discourse; planning; masterplanning

T5_ENVIRONMENT AND CLIMATE (O) / 1190

Action-Oriented, Transdisciplinary Co-Production and Urban Just Transitions: Bridging Theory, Practice, and Equity.

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The challenge of rapidly accelerating low-carbon transitions in cities—while ensuring that these transformations do not exacerbate urban inequalities—lies at the heart of the urban just transitions debate in both academia and policy. Climate action must be integrated with equity and justice to ensure that the needs and concerns of underserved communities are central to the transition (Romero-Lankao et al., 2023). According to Hughes and Hoffmann (2019), co-producing knowledge with urban communities and networks within a community-engaged research framework can play a pivotal role in developing concrete indicators and strategies for recognizing, measuring, and achieving just urban transitions. In other words, the transition toward a net-zero city can be more democratic and “just” if the process of defining the concept of transition itself is open to discussion, fostering co-decision-making and opportunities for mutual learning (Privitera, 2025).

While significant progress has been made in theorizing urban just transitions and action-oriented and actionable transdisciplinary knowledge (Robinson, 2008; Klenk et al., 2017; Mach et al., 2020), less attention has been paid to the link between these areas and to how academia can bridge the two.

This paper examines how action-oriented, transdisciplinary co-production theories and practices can inform the discussion on urban just transitions. I will provide a comprehensive literature review of academic publications on knowledge co-production processes that, while aiming for sustainable transitions, also seek to address justice and equity issues.

The guiding research questions of this literature review are:

What theoretical frameworks and subsequent theorizations address the practical outcomes and actions generated by action-oriented, transdisciplinary co-production of knowledge?

What practices and experiences in this field can inform future approaches?

What tools, methods, and features have researchers, especially in planning and urban studies, employed in applying action-oriented, transdisciplinary co-production?

How have these theorizations and concrete experiences of co-production expanded the discourse around facilitated urban just transitions, and how have they contributed to actualizing such transitions?

After reviewing hundreds of papers, 100 relevant studies from the fields of social, environmental, and spatial sciences have been selected for an in-depth examination. These have been categorized into three sub-groups: post-positivistic epistemologies, knowledge co-production theories, and knowledge co-production experiences. The review particularly focuses on how justice and equity are addressed, the interest in new narratives and visions, and the theorized and applied approaches and methods. Finally, the literature review will emphasize the role of academia in promoting action-oriented, transdisciplinary co-production as a means of addressing justice and equity issues and facilitating urban just transitions. In light of this analysis, I will offer suggestions for how urban scholars, planners, and practitioners could orient their theoretical and practical work on urban futures toward more justice-driven and engaged endeavors.

Keywords:

just transitions; equity; transdisciplinary knowledge co-production; community-engaged research; literature review.

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T5 ENVIRONMENT AND CLIMATE (O) / 793

Managing the energy transition: balancing the conflicts between landscape safeguard and the development of renewable sources

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The spread of renewable energy sources (RES) represents nowadays a main goal both at European and at national level, being “decarbonization” one of the key solutions to counterbalance climate change. However, the effective balance between global concern for climate change and local attention to landscape quality may give rise to several conflicts (Stremke and Schöbel, 2018). The current push towards energy transition is opening new questions, mainly related to the need of balancing the positive environmental impacts arising from the spread of the renewable energy sources and the territorial and landscape transformations that such a spread entails (Greco and Crosta, 2023). RES can be considered, indeed, one of the major driving forces of recent landscape transformations (Ferrario, 2019).

In Italy in 2023, energy production from renewable sources amounted to almost 40% of the total amount. In line with the European (2018/2001/UE) and national (Integrated National Plan for Energy and Climate) strategies for 2030 on energy transition, the Ministry of the Environment and Energy Security issued in 2024 a Decree for the distribution among the Italian regions of the national target for an additional power of energy from renewable sources to be achieved by 2030. The Decree also established the criteria for identifying unsuitable areas, leaving the regions with the task of identifying suitable areas, maximizing the achievement of the assigned objectives in terms of energy production from renewable sources. This has triggered a heated debate both on the topic of energy landscapes and their impacts on landscapes, especially on rural landscapes, and on the conflicts between state regulations and regional planning in the field of energy and landscape.

Hence, starting from the need of effectively balancing landscape safeguard and the spread of RES, this contribution explores the role of regions, and namely of the Regional Landscape Plans, in regulating the birth and spread of the new energy landscapes and that one they should assume in the light of the expected sharp spreading of the RES. In detail, starting from some emblematic case studies and focusing on photovoltaic and agrivoltaic systems, which risk compromising the landscape identity of numerous Italian agricultural landscapes, the contribution aims at providing guidelines capable to support Landscape Plans in promoting a better integration between energy and agricultural landscapes. Protecting rural landscape does not require, in fact, only constraints addressed

to widen the so-called unsuitable areas but, above all, the capacity to overcome a mere technical design of RES (Toledo and Scognamiglio, 2021) to a sustainable landscape design, capable of improving both the compatibility between energy systems and the peculiarities of the heterogeneous rural contexts in which they are located, and the social acceptance of RES.

Keywords:

renewable energy sources; rural landscapes; landscape planning;

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T5 ENVIRONMENT AND CLIMATE (O) / 1045

RETHINKING THE URBAN THROUGH CRACKS: RE-REPRESENTATION OF ARCHITECTURAL MEDIA IN RELATION TO CLIMATE BREAK-DOWN

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As much as environmental conditions define the state of cities, cities in turn transform environmental conditions. Through this reciprocal influence, urban settlements become indistinguishable from the climates they generate. The distinction between natural and human-generated environmental conditions further sculpt climatic patterns at local and global scales, breaking down cities progressively. In this breakdown, climatic nuances are hidden in urban cracks. As the climate clock ticks, these cracks are accentuated and made evident with the business-as-usual politics of urbanization, the growing domination of nature by technocratic advances, and the resulting impervious urban landscapes. Against this background, this paper focuses on an ongoing cartographic study that adopts the notion of the crack as a fragment or a segment within a larger entity, that is, a minority stance with no predetermined scale. While recognizing the multifaceted connotations of the term, the study particularly addresses the spatial dimensions of urban cracks to explore the representations of anthropocentric production and the unexpected potential ruptures that humans contribute yet are overlooked. This perspective provides an alternative visual narrative, in other words, a re-representation through the available media representations, of the relationship between urbanization and climatic breakdown. As the research approach, re-representation is framed by the concepts of cartography (D'ignazio, 2020), mapping (Newman, 2010), and re-representation (Oxman, 1997).

This re-representation departs from a proposed matrix of cracks which consists of three main layers: [1] Crack as leading to climatic breakdown, [2] Crack as rising out of climatic breakdown, and [3] Crack as healing climatic breakdown. Each layer is accompanied by respective sub-layers - that is [1.1] territories, [2.1] scales, and [3.1] nature-based solutions. By selecting a diverse array of urban case studies through globally renowned design media platforms, including Dezeen and Archdaily, these main and sub-layers are traced in a non-linear manner across the satellite images belonging to projects. The media that is analyzed in this study involves a systematic decomposition of the aerial and satellite photographs that belong to the selected case studies. This systematic approach is based on the six principles developed by Tufte (1990), which are [1] Escaping Flatland, [2] Micro/Macro readings, [3] Layering and Separation, [4] Small Multiples, [5] Color and Information, and [6] Narrative Space and Time. Building on these principles enables the re-representation of urban media proposed by this research's matrix by visiting the overlaps, relations, and juxtapositions between decomposed images. Re-representation in this context becomes a critical cartographic act, that further evaluates the architectural media to explore architecture's deep entanglement with climatic breakdown.

Keywords:

climatic breakdown; urban cracks; critical cartographies

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T5 ENVIRONMENT AND CLIMATE (O) / 1517

A quantitative analysis of Neighbourhood Sustainability Assessment indicators from 13 countries across 3 global regions

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Urban settlements are a major source of carbon emissions globally, with sustainable forms of development widely acknowledged as a key pillar of climate action.

While efforts to reduce environmental impacts have generally focused on individual buildings, there is recognition that shared methods for measuring and evaluating the performance of built form at the wider neighbourhood level are required. This has led to the development of numerous tools intended to define and rate sustainability at the scale of urban districts –commonly known as Neighbourhood Sustainability Assessments (NSAs).

Despite a growing literature on the topic, direct comparisons between NSAs remain challenging. While many share a similar hierarchical structure, the meaning and intent of similar categories can differ. Additionally, the modes of measurement and weighting applied to individual indicators are rarely consistent, resulting in various methods of comparison in prior research. This hinders the ability to understand how different neighbourhood ratings relate to one another and whether projects perform as claimed. It also

limits the comparison of findings on the structure and methodology of NSAs within the literature.

To address these challenges, this paper outlines a systematic method for the documentation and analysis of NSAs. 13 national tools, covering 3 global regions, were selected due to their shared status, purpose, and scope. The assessment criteria of each NSA were catalogued according to submission requirement (mandatory/option), data type (quantitative/qualitative), and whether benchmarking applied, with core trends noted. Further analysis of benchmarked indicators allowed for detailed comparison and recategorisation in terms of metrics, unobscured by stated themes or intent.

The findings reveal that the majority of measured categories across NSAs are optional, with qualitative data being the primary source for assessment. Moreover, a significant proportion of categories lack a reference benchmark as part of the evaluation process.

In cataloguing the types of data required and the standards set for each criterion, the priorities and intentions embedded in these frameworks are revealed. According to this review, benchmarked indicators are relatively evenly distributed across sustainability categories but are largely adopted as proxy metrics for indirectly related performance variables.

This research highlights that many NSAs, in their current form, are insufficient as reliable barometers of sustainable urban development. Additionally, it provides the first catalogue of internationally adopted quantitative metrics for assessing sustainability at the neighbourhood scale. In doing so, it clarifies the diverse ways in which sustainable urban design is currently defined and evaluated globally.

Keywords:

Neighbourhood sustainability assessment; district scale; design performance; sustainable urbanism

T5_ENVIRONMENT AND CLIMATE (O) / 1777

Urban Just Transitions in Action: Challenges and Potential of a Community-engaged Research in Toronto Suburbs.

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Co-producing knowledge with urban communities within a community-engaged research framework is crucial for developing effective indicators and strategies to achieve just urban transitions, which is the fusion of climate action and justice concerns at the urban scale. While the concepts of co-production and actionable knowledge are prevalent in sustainability discourse, their intersection with the urban just transitions debate is less explored.

This paper addresses this gap by examining the contradictions and potential of community-engaged research focused on actionable knowledge co-production processes. The paper will address two key questions: What are the main potentials and challenges of collaborating with community partners to understand and act on urban just transitions? Additionally, how have these co-production experiences deepened our understanding of urban just transitions and facilitated their realization?

This paper will explore these questions drawing on the example of a community-engaged research project, called Listening Project, which aims to understand how climate actions aimed at achieving “net-zero” futures align with the everyday concerns and aspirations of residents in Scarborough—a vibrant, multicultural as well as

unserved neighbourhood on the outskirts of Toronto. The project partners include various organizations dedicated to enhancing the quality of life and social services for local residents and the project involved wide-ranging research activities such as neighborhood walks, art workshops, and community mapping. This paper will expand the already rich literature on community-engaged research agenda, with reflections, and suggestions for new directions on how such an approach can facilitate and support equitable transitions at neighborhood and urban scales.

Keywords:

urban just transitions; community-engaged research; knowledge co-production; climate actions; Canada.

T5 ENVIRONMENT AND CLIMATE (O) / 1779

From Vulnerability to Resilience: Coastal Heritage as Environmental Infrastructure

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This contribution is conceived within the framework of the PRIN 2022 - *COSTA | Med - Catching Opportunities for Strategic Transformation and Adaptation of Mediterranean Coasts**. The overall objective of the research project is to formulate strategies for the transformation and adaptation of Mediterranean coastal territories. Specifically, the Pescara Research Unit investigates the potential of coastal cultural heritage (Khakzad et al., 2015; Rykwert, 2010) as a strategic tool to address current environmental and climatic vulnerabilities. The mid-Adriatic coastal stretch of Abruzzo is chosen as a case in point.

Coastal areas, which are subject to a range of environmental challenges including erosion, rising sea levels, extreme heat, flooding, and saline ingression, are characterised by a high density of heritage values. These areas therefore represent a laboratory for experimentation with the issues introduced. The coastal contexts identified as case studies in the mid-Adriatic stretch (C1 - Pineto-Silvi; C2 - Fossacesia-Vasto) are distinguished by the specificity of their urbanisation processes and socio-economic and cultural dynamics. However, they also exhibit recurring Adriatic settlement patterns, characterised by the juxtaposition of coastal landscapes of varying thickness, marked by distinctive orographic conditions, infrastructural developments, and different extents of ecological relevance. In particular, within the context commonly known as Costa dei Trabocchi (C2), the richness of the natural and cultural heritage present, as well as the incremental exposure of these resources to the risks posed by climate change, serve to emphasise the relevance of environmental issues in the integrated planning and design of coastal territories. Along this stretch, a diversity of coastal protected areas, nature reserves, Sites of Community Importance, areas of fauna protection and naturalistic interest coexist with structural road axes, industrial sites and fragments of 'seasonal' tourist linear cities. Physical-relational and 'unbuilt' traces between the coast and the hinterland, activities linked to the blue economy, decommissioning and transformation processes due to the dismantling of the Adriatic railway line, are accentuating the complexity of anthropic interactions on the natural landscape and in the formation of the coastal cultural heritage. These dynamics intensify and multiply the conditions of vulnerability of the land-sea space. The heterogeneity of this variable-thickness space, and the criticalities to which it may be subjected –e.g. in terms of resource availability, adoption of improper use practices, and deterioration of the health status of occupied soils –call for integrated governance. However, this also necessitates the definition of a different development model for urbanised coastal contexts.

The evolutionary dimension of the heritage is generated and renewed by the subjects who take care of it and is nourished by continuous exchanges with society (Magnaghi,

2020). According to this, the research hypothesis is that the coastal heritage can assume an active role in consolidating the adaptive capacity of a system (UNI EN ISO 14091, 2021).

In the context of the ongoing debate on the integration of heritage and the pressing issue of climate risk, this PRIN research frames cultural heritage as 'environmental infrastructure'. It acknowledges the contextual forms of cultural heritage as an interconnected array of identity elements, capable of serving as a regulatory infrastructure for the environment (Pavia, 2019; di Venosa, 2022). These forms contribute to the restoration, maintenance, and activation of ecosystem services that enhance the quality of the spaces they inhabit.

This contribution specifically focuses on the activities of the Pescara Research Unit related to the development of scenarios and the setting of a planning agenda for the aforementioned areas of study. The aim is to test risk reduction strategies through the research by design approach, exploring the active role of both existing and latent coastal cultural heritage in this process (Price & Narchi, 2018).

Keywords:

land-sea; coastal heritage; environmental infrastructure; vulnerability mapping; design scenario

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T5 ENVIRONMENT AND CLIMATE (O) / 512

Land suitability modelling for Integrated Mangrove Aquaculture to adapt to salinity intrusion in southwestern Bangladesh based on an integrated GIS-MCE-AHP approach

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The Sundarbans mangrove forest, located in the Ganges Delta, neighbors numerous vulnerable coastal communities. The mangrove forests play a crucial role in sustaining local livelihood structures and providing key ecosystem services. Climate-induced change risks contributed saline waterlogging, and salinity intrusion in low-lying lands within polders through extreme weather events, such as cyclones, storm surges, as well as coastal flooding inundation. Furthermore, the uncontrolled expansion of brackish shrimp farming (*Penaeus monodon*) has further exacerbated soil and water salinization, posing severe threats to self-sufficient community-based livelihood options. These have intensified the reliance on mangrove resources, leading to the mangrove ecosystem degradation.

Nature-based Solutions (NbS) offer essential tools for protecting the Sundarbans mangroves and addressing environmental challenges and livelihood threats faced by surrounding communities, including climate change, ecological degradation, loss of biodiversity, poverty, and food insecurity. This study examines the intricate relationship between salinity intrusion risks and the resilience of community dependent on mangrove resources. The proposed Integrated Mangrove Aquaculture (IMA) practices, aligned with NbS standards and community involvement, are considered as a solution that balances mangrove ecosystem conservation and sustainable community livelihood management. Specifically, IMA provides adaptive responses to soil salinization and saltwater flooding caused by integrated factors, both of which increase the vulnerability of local livelihoods, aiming to develop a production model in the local saline environment that is both ecologically and economically beneficial. Moreover, this study introduces a data-driven assessment model, considering five sub-models and proposing 18 relevant factors for weighted criteria through spatial multi-criteria decision analysis to construct weighted spatial raster map layers. Utilizing an integrated GIS-MCE-AHP approach, the final composite weighted criteria maps create a model for site selection suitable for IMA development and visualize the map. The visual modeling map identifies four suitability levels (ranging from highly suitable to not suitable), with approximately 26.7% of the area highly suitable for implementing IMA. This research aims to propose a feasible strategy to adapt high salinity risks in the region while supporting ecological protection and economic sustainability. Additionally, the data-driven evaluation model provides scientific support for future planning and management, facilitating implementation of IMA in vulnerable communities and ultimately contributing to the Sustainable Development Goals (SDGs).

Keywords:

Livelihood Vulnerability; Climate Change; Salinity; Integrated Mangrove Aquaculture; Nature-based Solutions

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What does the neighborhood mean for the Dutch heat transition? A discourse analysis

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As heating is responsible for about half of the world's total energy consumption, the heat transition is an important part of efforts to mitigate climate change. In the Netherlands 90% of the households depend on natural gas for heating their homes. Phasing out natural gas has therefore become a central policy objective in Dutch climate policy. Part of the Dutch heat transition strategy is a 'neighborhood approach', making the neighborhood a focal point for climate governance. At the same time the purpose of this re-scaling has remained largely implicit.

Although policy attention to neighborhoods is nothing new, the heat transition provides a new context in which neighborhood governance is taking shape. In this study we employ a discourse analysis to explore how neighborhoods are represented in national energy policy programs. We identify three discourses that put forward conflicting views on what roles neighborhoods play in the Dutch heat transition. One of these discourses puts emphasis on the importance of public participation and local ownership, promoting community governance. However, most policy documents follow a technocratic rationale which represents neighborhoods as the appropriate scale to ensure climate policy objectives are met in time and cost-efficiently. This second discourse puts emphasis on hard policy instruments to help municipalities disconnect neighborhoods from natural gas. We find a third discourse that stresses the need to prioritize neighborhoods with a concentration of low-income households. Neighborhood governance can make a difference by offering a targeted and integrated approach to citizen well-being. This third discourse has traditionally been associated with urban renewal, but is now entering the field of climate and energy policy. This is especially so since the recent energy crisis in Europe, which showed the vulnerability of households to fluctuating energy prices.

Our findings show that neighborhood governance in the context of climate policies can head different directions. This makes it important to pay attention to the spatial inequalities that can result from particular strategies. For instance in dense neighborhoods where district-heating is most cost-efficient but at the same time puts households that are financially vulnerable at risk. By discussing the rationales underlying the 'neighborhood approach' our study raises awareness about the dilemma's that arise when putting neighborhood governance to practice.

Keywords:

Energy Transition; Climate Policies; Neighborhood Governance; Discourse Analysis

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T5_ENVIRONMENT AND CLIMATE (O) / 696

Node and Path: Seasonal Impacts of Environmental Parameters in Community Green Spaces on the Thermal Comfort of the Elderly

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High-quality community public spaces are vital for fostering social interaction and improving the physical and mental well-being of elderly residents. Among various factors influencing the quality of these spaces, outdoor thermal comfort stands out as a critical indicator. Thermal comfort arises from the dynamic interaction between the built environment and thermal conditions, primarily governed by microclimatic parameters (wind speed, air temperature, relative humidity, and mean radiant temperature) and physiological factors (clothing insulation and metabolic rate). Variations in microclimatic conditions across different outdoor public spaces, combined with individual differences such as age, health status, and living habits, lead to diverse thermal comfort experiences. Compared to younger individuals, elderly residents encounter distinct challenges in achieving outdoor thermal comfort. With aging and declining health, their sensitivity to temperature fluctuations diminishes, and their thermoregulatory capacity weakens, rendering them more vulnerable to microclimatic changes and extreme weather conditions. This vulnerability is particularly pronounced in individuals with age-related chronic diseases such as cardiovascular disorders, hypertension, and diabetes. As a result, elderly residents rely heavily on the optimization of community public space environments to enhance their thermal comfort. This study investigates an aging community in Shanghai, focusing on seven community green spaces as research sites. Field measurements and questionnaire surveys were conducted on typical summer and winter days to collect environmental parameters and thermal sensation vote (TSV) data from elderly residents. An ordered Probit regression model was employed to analyze the seasonal effects of physiological, psychological, and environmental parameters on the thermal sensations of elderly residents. The results reveal that elderly residents exhibit a diminished perception of high-temperature risks. In summer, thermal comfort votes are primarily influenced by air temperature, while in winter, mean radiant temperature exerts a more significant impact. Further analysis indicates that satisfaction with community public spaces is influenced by the seasonal thermal comfort of both destination nodes and the walking paths leading to them. In summer, improvements in the thermal comfort of both nodes and paths significantly enhance satisfaction. However, in winter, only the thermal comfort of paths demonstrates a significant positive effect on satisfaction. This study highlights the seasonal variability in the impacts of thermal environment optimization strategies and provides theoretical insights to inform the design and planning of community public spaces, thereby enhancing thermal comfort for elderly residents.

Keywords:

Outdoor thermal comfort; thermal sensation vote; aging community; Shanghai

T5_ENVIRONMENT AND CLIMATE (O) / 258**Urban Wilderness Protection and Creation in China****Author:** Senmeng Hao¹**Co-authors:** Taoling Li²; Yanyan Xia²; Zhaokui Wu²; Chunhui Zhang²¹ +86 15130417825² Hebei Oriental University**Corresponding Author:** smhao825@gmail.com

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As cities face rapid urbanization and escalating environmental challenges, the protection and creation of urban wilderness areas have emerged as critical strategies for achieving ecological balance and sustainable urban development. Urban wildernesses—natural spaces within or near urban centers that remain minimally impacted by human activity—play a pivotal role in providing essential ecosystem services, including air and water purification, carbon sequestration, and recreational opportunities for urban residents.

This study explores the integration of urban wilderness areas into city planning in China, emphasizing the balance between ecological preservation and urban development. Through an interdisciplinary approach that incorporates ecological analysis, urban planning methodologies, and community engagement, the research evaluates the ecological contributions of such areas, their role in enhancing biodiversity, and their benefits to local communities.

Key strategies for urban wilderness protection and creation include native vegetation restoration, the incorporation of sustainable recreational facilities, and the promotion of environmental education. Urban wilderness areas serve as habitats for wildlife while fostering a deeper connection between residents and nature, encouraging environmental awareness and stewardship. Public accessibility and awareness are also essential components, ensuring that these spaces maintain their natural integrity while remaining available for public use and enjoyment.

This study highlights the significance of urban wilderness areas in bolstering ecological resilience, particularly amidst rapid urban expansion and the impacts of climate change. By aligning wilderness conservation with urban planning, these spaces contribute to more livable, sustainable, and ecologically balanced urban environments. The findings provide valuable insights for policymakers, planners, and environmental advocates, supporting the strategic integration of wilderness areas into urban landscapes to ensure the long-term health and sustainability of cities and their inhabitants.

T5_ENVIRONMENT AND CLIMATE (O) / 62**Urban Adaptation Policy and Social Justice: A New Framework for Understanding the Social Role of Adaptation Measures****Author:** Deema Abo Elassal¹**Co-author:** Yosef Jabareen¹¹ Technion - Israel Institute of Technology**Corresponding Authors:** deema.abo@campus.technion.ac.il, jabareen@technion.ac.il

Climate change is one of the most urgent challenges facing cities today, posing significant risks to communities and the built environment. In response, many cities worldwide have begun to implement adaptation policies aimed at helping communities and urban systems enhance their resilience. This paper raises an important question: how fairly

are adaptation policies and their practical measures distributed among different urban areas and demographics? The equitable distribution of adaptation policies is not merely a technical issue; it is fundamentally a matter of justice. Since the impacts of climate change disproportionately affect low-income communities and marginalized groups, it is essential to critically examine how adaptation policies are formulated and implemented. The existing literature on urban adaptation measures is scattered across various fields of study, leading to a fragmented understanding of the social dimensions of these policies. Thus, this paper aims to analyze the social aspects of urban adaptation measures and their distribution within cities. We conduct a comprehensive review of multidisciplinary literature focusing on adaptation policies and strategies at the city level, and on studies that assessed the distribution of these measures. Our review methodology follows a qualitative process based on Jabareen (2008) conceptual framework. We develop a new framework to understand the social justice aspects of adaptation policies. This Conceptual Framework of the Social Aspects of Urban Adaptation Measures demonstrates that these measures serve as instruments of social justice rather than merely technical solutions. The framework consists of six categories, each fulfilling a distinct social role. The categories are defensibility, public engagement, accessibility, necessities, health and well-being, and empowerment. We argue that the concept of defensibility is central to this framework and serves as a foundational principle for adaptation policies. In addition, despite the social role these measures fulfill, their distribution in cities doesn't favor those most in need of them. In conclusion, the equitable distribution of adaptation measures is not just a technical concern; it is fundamentally a matter of justice.

Keywords:

Climate change; Adaptation policies; Adaptation measures; Distribution; Social Justice

T5_ENVIRONMENT AND CLIMATE (O) / 452

Intra-urban CO₂ Spatiotemporal Distribution and Driving Urban Factors Using Multi-source Data: A Case Study of Shanghai

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The emission of carbon dioxide (CO₂) and other greenhouse gases has accelerated the global warming process, exacerbating environmental problems. Urban CO₂ concentration has become a new focus in CO₂ research. However, existing studies are often limited by single data sources, restricting the temporal and spatial scope of the research. This study addresses the issue of limited data sources by using CO₂ monitoring data from five ground-based monitoring stations in Shanghai throughout 2023, combined with XCO₂ data from the OCO-2 satellite for the period 2014–2024. The primary objective of this study is to investigate the spatiotemporal distribution and vertical variation of CO₂ concentration in Shanghai, as well as to explore the urban-rural differences and identify the key factors influencing CO₂ concentration within the city. To address these research objectives, a combination of time series analysis, inverse distance weighting interpolation, and multiple linear regression methods is employed to analyze the data and assess the impact of various factors on CO₂ concentration in Shanghai. The results indicate that CO₂ concentration in Shanghai is significantly affected by seasonal variation, with concentrations in summer being notably lower than in winter. There are also spatial distribution differences in CO₂ concentration, with higher concentrations generally observed in the city center compared to the suburbs. The vertical distribution of CO₂ concentration tends to increase initially and then decrease. Furthermore, the study reveals that vegetation cover and population density has a significant impact on CO₂ concentration, and the road network density also plays a role. This indicates that intra-urban CO₂ concentration exhibits complex characteristics, influenced by various factors such as land use type, spatial aggregation, traffic, and human activities. This study overcomes the limitation of

using a single data source and provides a detailed analysis of the spatiotemporal distribution characteristics and influencing factors of CO₂ concentration at the urban scale. It also explores the potential for combining ground-based monitoring and satellite-derived CO₂ data for future research.

Keywords:

CO₂ concentration; OCO-2; spatiotemporal distribution; driving factors

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Track 6 | URBAN CULTURES AND LIVED HERITAGE

T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 1765

Ghost plots –memory of empty urban spaces

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This paper takes up the theme of empty plots that exist within the urban fabric. In reference to “ghost signs”-advertising and other signs that have been preserved for an extended period of time because of their nostalgic appeal or as result of lack of interest –we coin the term “ghost plots”. Internationally, the phenomena is common, ranging from examples of post-war Amsterdam, where bombed, empty plots were turned to children’s parks (Lefaivre and de Roode, 2002), or studies of shrinking cities, where derelict sites and obsolete buildings become norm rather than an exception. In urban studies, empty spaces are often analysed through the lens of urban development and need for regeneration, and referred to with terms as derelict and obsolete sites, urban voids, lost spaces, under-utilised or leftover spaces/areas, gap, unoccupied land, wasteland, wasted space, abandoned or abused locations. (Pallagst, Wiechmann, and Martinez-Fernandez 2015; Nemeth and Langhorst 2013; Rahmann and Jonas 2011) Furthermore, as a rule, these are seen to be indicative of poor planning.

Our aim is to turn the tables by enquiring how the “ghost plots” can pause and potentially disrupt rhythms of urban development. We assert that to get beyond the dominating concerns over under-used sites and how these could be regenerated, “ghost plots” make it possible to turn attention to the longer historical processes of a specific site, and its meanings as part of the wider urban context. In many cases, the sites have been, and continue to be valued by the locals, which tells of continuity rather than a total cut.

Our research focuses on selected, representative cases from Helsinki, the capital of Finland. Each case is telling of both different type(s) of past buildings and uses, as well as views concerning the present and future of the site. The key case introduced is a “ghost plot” in the Sörnäinen, historically a working class district of Helsinki, positioned between Väinö Tanner Park and the buildings of University of Arts. The “ghost plot” emerged after half of a large 1970s office structure was demolished in 2017. The plan was to construct a new government office building, but a reassessment of the state’s needs for real estate led to the sale of the plot to a private developer and the introduction of a new hybrid concept. (Perälä, Liski, Rajamäki and Väinämö 2026) Due to economic and political challenges, the project however remained stagnant. In 2025 there is no knowledge of how the project might proceed. There is a large pit on the plot, where different kinds of plants have begun to grow, and where for example temporary, site specific exhibitions have been organised.

As everyday urban spaces, “ghost plots” emerge as hinge points that serve as a tool for seeing value in the (supposedly) empty, and re-considering the most common approaches to urban derelict sites, making it possible to focus on history and memory of the sites, and thus the role of processes and continuity instead of the cut, caused by demolition. Furthermore, we turn attention to authorised heritage discourse (AHD) which typically holds the position that heritagisation process can happen only, when a specific structure can be preserved.

Keywords:

ghost plots; empty spaces; heritage as process; everyday

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 178

Measuring Cultural Participation: A Comprehensive Study in Kayseri

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This research delves into the current dynamics of participatory approaches within the arts and culture scene of Kayseri, a city renowned for its profound historical and cultural heritage yet plagued by notably low levels of cultural engagement. This study addresses the pivotal gap in existing research by exploring the factors that inhibit cultural participation and devising actionable solutions to ameliorate these issues.

Despite its rich cultural assets, Kayseri's potential for cultural engagement remains largely untapped, as evidenced by low attendance rates at cultural events. Literature suggests that such phenomena are not unique to Kayseri but are common in regions where traditional barriers—social, economic, and physical—persist in the cultural sector (Bourdieu, 1984; DiMaggio & Useem, 1978). The necessity to transform these cultural landscapes into more accessible and inclusive environments is imperative not only for cultural preservation but also for the socio-economic development of the area (UNESCO, 2012).

This study employs a mixed-methods approach, integrating both qualitative and quantitative research to offer a holistic view of the cultural participation landscape in Kayseri. Surveys will quantify the extent of participation and profile the demographic characteristics of participants. Focus groups and in-depth interviews will explore deeper insights into the personal experiences, preferences, and perceived barriers faced by cultural attendees. This approach is supported by the analysis of existing data sources to validate and enrich primary data (Plano Clark, 2011). Initial results highlight significant socio-economic barriers such as affordability and availability of cultural offerings, physical barriers including inadequate access for disabled individuals, and cultural barriers such as lack of awareness or perceived relevance. These findings are in line with Stevenson's (2017) discussion on cultural capital and its impact on cultural participation.

Research on cultural participation often highlights the disparities in cultural access that stem from socio-economic status, educational attainment, and cultural capital (Bourdieu, 1984; DiMaggio, 1982). Furthermore, recent studies emphasize the need for strategic interventions that cater specifically to diverse populations to foster inclusive cultural environments (Stevenson, 2017; Falk & Katz-Gerro, 2016). These perspectives inform the development of our targeted strategies. The study aims to develop targeted strategies to increase cultural attendance and inclusivity. These strategies will be crafted to address specific barriers identified through our research, and their implementation will be closely monitored and adjusted based on ongoing evaluations. The outcomes

are expected to contribute to the refinement of cultural policies and practices, ensuring they are effectively tailored to meet the needs of diverse community groups.

By identifying and tackling the barriers to cultural participation, this study not only contributes to the academic discourse on participatory culture but also enhances the societal welfare and economic fabric of Kayseri. The strategies developed will provide a framework for other cities with similar cultural landscapes, promoting wider applicability and significance.

This study is poised to offer significant insights into the mechanisms of cultural participation and the development of effective interventions. By addressing both the empirical and theoretical dimensions of cultural barriers, it will provide valuable guidelines for policymakers, cultural managers, and planners aiming to revitalize cultural landscapes in urban settings.

Keywords:

cultural participation; access to culture; cultural policies; arts and culture

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 1006

Public Emotions and Visual Perception of Historic Districts: An AI Approach Using Social Media Data

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Background: Historic districts can offer positive emotional experiences to the public (Scopelliti et al., 2019; Reece et al., 2022). Visual perception is one of the most direct ways people experience historic districts, so the visual landscape characteristics of historic districts may influence public emotions. However, emotional experiences and visual landscape characteristics have often been studied as two separate themes, and the impact of visual landscapes in historic districts on emotional experiences has yet to be revealed. Artificial Intelligence methods, particularly multimodal large models can provide an approach for analyzing the relationship between visual landscapes and public emotions. Therefore, this study aims to construct a multimodal deep learning framework to explore the relationship between visual landscapes and public emotions in historic districts.

Methods: Text reviews from social media help understand people's emotional experiences with the built environment (Ghahramani et al., 2021; Park et al., 2020), and images voluntarily shared on social media serve as a rich resource for understanding people's visual preferences for environments (Chen et al., 2020). Although some studies have attempted to qualitatively explore the relationship between visual perception and emotional experience (Yang & Zhang, 2024), no quantitative analysis framework for this relationship has been established. In this study, we use Nanluoguxiang, a typical historic district in Beijing, as a case study. Drawing on 5,251 text reviews and 23,553 associated images from Dianping between 2022 and 2024, this study develops a multimodal deep learning framework that integrates GPT-4, U-net, multi-layer attention mechanisms, and interpretability analysis modules (SHAP and Grad-CAM) to examine the impact of 8 environmental scenes and 14 environmental elements in historic districts on public emotional experiences.

Results: The results show that: (1) Public emotions in Nanluoguxiang are predominantly positive, with a complex emotional state during the pandemic; (2) Architectural and natural landscape scenes are more strongly associated with positive emotions, while street scenes are linked to negative emotions; (3) For positive emotions, the most significant contributions come from architectural elements such as tiles and plants, as well as traditional food and handicrafts within commercial scenes; for negative emotions, the greatest influence is exerted by commercial signage in street scenes.

Conclusion: This study reveals that certain types and specific elements within historic districts impact public emotions. At the same time, the multimodal deep learning framework effectively predicts the impact of visual landscapes on public emotions in historic districts.

Keywords:

Artificial Intelligence; Deep learning; Emotions; Historic districts

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Research on the Revitalization Models, Mechanisms and Influencing Factors of Historical Buildings in High - density Cities: A Case Study of Hong Kong

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Historical buildings, as “non-renewable resources” in cities, offer a multitude of benefits in terms of economy, socio-culture, and environment through their conservation and adaptive reuse. However, the central districts of high-density cities often face the challenge of land scarcity, with Hong Kong being a quintessential example of such cities. The preservation and revitalization of historic buildings entail the relinquishment of certain land development rights. Therefore, how to maximize the value of these historic buildings through their retention and revitalization, thereby bringing urban vitality, is a topic worthy of research.

The renewal of historical buildings in Hong Kong is a way of conservation and reuse under the premise of demolition and reconstruction. There are intense contradictions and conflicts among the government, the market, and the public regarding the conservation and revitalization of historical buildings due to their respective interest demands. Previous studies have not systematically examined the types of historical building revitalization in Hong Kong from the perspective of the roles of participants, lacking in - depth analysis of the stakeholder factors behind the success of revitalization. Meanwhile, few studies have focused on the status of revitalized projects that have entered the operation stage. However, this is an important period for historical buildings to realize their value, determining whether their revitalization is successful and the necessity of their long - term preservation. Although existing studies have analyzed the possible factors influencing the success of revitalization, covering various aspects such as the economy, society, environment, and institutions, relatively little attention has been paid to the interrelationships among these factors and their mechanisms of action on revitalization.

This study reviews literature and historical archives regarding the revitalization of Hong Kong’s historical buildings. Through semi - structured interviews with key government officials, real - estate enterprises, and residents, the study examines and summarizes three main types of historical building revitalization in Hong Kong, namely the government - led and social - enterprise - involved model, the market - led and government - guided model, and the Urban Renewal Authority (URA) agent model. Furthermore, it explores the key factors influencing the successful revitalization of historical buildings and finally points out the possible optimizations for each type of model. The research findings are as follows:

- 1)The revitalization projects under the government - led and social - enterprise - involved model are not always successful, which is closely related to the enterprise’s participation intention and its operational and management capabilities.
 - 2)The essence of the revitalization projects under the market - led and government - guided model is the exchange of economic interests and public interests. Developers increase commercial elements in the name of conservation and revitalization and obtain government support for development projects, while the government adjusts its planning and development through conservation and revitalization projects to achieve public interests.
 - 3)In the URA agent model, revitalization projects with commercial nature and close community ties are more likely to succeed.
 - 4)It is difficult to effectively revitalize historical buildings solely through government - led or market - led approaches.
 - 5)In addition to the physical characteristics of historical buildings, the key factors influencing the success of revitalization include financial feasibility (funding), functional adaptability, the attractiveness of operational content, and public participation etc.
- For other high - density cities in the Asia - Pacific region, we believe that the findings of this study can provide references for the conservation and revitalization of built heritage during the process of urban renewal, including the selection of revitalization models and the optimization of key factors for successful revitalization.

Keywords:

Historical buildings; High - density cities; Hong Kong; Revitalization

T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 942**Exploring Technology Use of Households in the Istanbul Historic Peninsula: Towards an Information Society**

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National development strategies in Türkiye and the future vision of the city of Istanbul strive to bring technological development to the planning agenda. Even though literature support that 'technological development is the determinant of economic growth' (Romer, 1990), vulnerability of households to this development is much larger, and they are rapidly forced to dematerialize and demobilize with smart technologies (Mitchell, 1999), especially ever after the pandemic (Dimopoulos, 2021). Besides, the most important obstacles, in the transition to the information society, is retrofitting the historical city centres with smart technologies and improving welfare of households, together (Belli and Koramaz, 2020).

This research examines technology use and access based on household survey data from 2019 in Istanbul's Historic Peninsula, the city's historical centre (Koramaz, et. al, 2019). By comparing socio-economic status and basic demographics with technology-related findings, the paper explores the ability of the household profile to be informed about the management of the historical city centre. This analysis also contributes to discussions on revitalizing city centres over promoting residents' transition into the information society. Additionally, the paper addresses digital divide-related policies, which refer to the growing gap between groups that can access information and communication technologies and those who cannot. The survey findings also shed light on the extent to which households, varying in socio-economic status and demographic profiles, experienced compulsory digitalization in the four years preceding the pandemic.

The initial finding addresses that access to technology decrease significantly in households with low income. In addition, technology use also decrease in the households consisting only of individuals over the age of 65, as one of the most vulnerable groups in the transition to the information society. The nature of residential segregation in terms of technological development will also reveal the variances in the ability of being informed from communication channels and local online sources related to municipal services in the case.

The paper concludes by discussing smart technologies currently available as heritage site management services in Istanbul's Historic Peninsula, along with strategies to address associated vulnerabilities, depicted with digital divide. With its traditional building stock and organic urban pattern, the Istanbul Historic Peninsula faces challenges in retrofitting smart technologies. Notably, enthusiasm for information and communication technologies related to smart mobility and digital interfaces in cultural infrastructure should align with the demand for smart and renewable energy sources, as well as the rights of smart citizenship and active participation in urban governance.

Keywords:

technology; smart city; information society

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 1141

Locating transnational projects and UNESCO World Heritage: Diffusion, features, and types of projects located within sites, buffer zones, and nearby

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Cultural heritage has gained importance in distinguishing cities and places in the competition for attracting international visitors. In the last decades, this prompted new projects to make historic sites more appealing, accessible, and functional to tourists. While a certain degree of novelty –e.g. new projects for historic buildings, museums and heritage areas –proved to be attractive, it can also risk oversimplifying cultural contents to promote tourism and commodifying heritage places (Gravari-Barbas and Renard-Delautre, 2016).

In particular, transnational actors, such as star architects, have contributed significantly to these trends (Ponzini, 2020). In the transformations of heritage-rich sites, international organizations such as UNESCO and internationally renowned architectural firms emerge as the obvious protagonists, since these projects generally need high-level technical expertise, specialized interventions and powerful narratives to gain legitimacy, especially in potentially controversial situations. A survey by Cominelli and Jacquot (2020) identified more than 400 projects across Europe designed by transnational firms and located within UNESCO-listed sites in the 1990-2015 period. However, little is known about the diffusion, features, and types of projects located in and near to such heritage sites, especially beyond Europe.

This paper aims to advance the state of the art by conducting a series of mapping and analytical exercises to uncover new insights into the interaction between transnational projects and UNESCO World Heritage Sites. First, it explores the geographies of projects designed by globally prominent transnational firms in UNESCO WHS and their buffer zones between 1990 and 2023. The analysis is based on an original GIS database with comprised of more than 5,000 transnational projects (Ponzini and Manfredini, 2017) overlaid with the UNESCO WHS database containing over 1200 sites. Using a 2km radius, derived from the maximum determined diameter of existing listed urban sites, the study identify over 200 projects in vicinity of WHS sites. Subsequent investigation and cross-checking reveal a diverse set of projects located directly within the World Heritage Sites, their Buffer Zones, as well as outside of listed areas, even if, in some instances, they fall beyond (but nearby) the designated boundaries. The analysis indicates that

nearly three times more of the projects were completed after the site was listed as UNESCO, revealing that the heritage listing did not necessarily have an impact of reducing urban development.

This data will be thoroughly analyzed to identify patterns and trends in how these projects interact with their surroundings. A set of examples will be presented to narrate the different types identified to expand the discussion on how the ways these projects connect or disconnect with their heritage contexts. Finally, the paper will highlight key gaps and open questions regarding transnational architectural and urban projects in heritage areas, outlining directions for future research to be developed.

Keywords:

Keywords: Transnational projects; Cultural heritage; Mapping; World Heritage sites; UNESCO

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 1191

Exploring Synergies between Built Heritage and Climate Discourses in Urban Transformation: A Scoping Review

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Urban transformation addresses the evolving needs of present and future cities while inherently being shaped by elements of the past, particularly urban heritage. The field of “urban heritage” has been traditionally studied from a conservation and restoration perspective, focusing on materiality and the preservation of building fabric. However, this notion was challenged in 2011 by The “Recommendations on Historic Urban Landscape” by UNESCO, that called for viewing heritage tenets as catalysts for sustainable development rather than barriers. This paper therefore performs a scoping review to explore what transformation really means in the context of preserving urban heritage while also ensuring it contributes to sustainable development. While many pathways to “sustainable development” exist, this study particularly focuses on climate adaptation of urban areas.

To begin with, the study synthesizes and elaborates on different perspectives of “transformation” in the field of urban heritage, such as, conservation, restoration, transition, and revitalization, and how these narratives have evolved since 2011. Thereafter, the

study intersects this informed understanding of “heritage-led urban transformation” with climate discourses in urban planning to highlight potential synergies and conflicts arising from this nexus.

The methodology employs a systematic and iterative process, involving keyword searches and manual abstract screening to compile a body of knowledge informing the three urban themes investigated in this study- transformation, heritage, and climate adaptation. Scientific articles extracted from SCOPUS and grey literature, such as reports from international organizations like the Intergovernmental Panel on Climate Change (IPCC), the United Nations World Heritage Centre, and the International Council on Monuments and Sites (ICOMOS), form the basis of literature screened during the scoping review. The method of Critical Discourse Analysis (CDA) is employed to triangulate existing narratives and achieve the study’s aims. The result is a collation of synergies and conflicts between built heritage and climate discourses in urban transformation, and its implications in practice. These are mapped using the three dimensions of the UNESCO Historic Urban Landscape Approach: natural, built, and socio-cultural.

T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 103

A Critical Ethnographic of 'Ziddi' Feminist Socio-Spatial Practices in a Modern-Mohalla of Islamabad

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This research identifies and conceptualizes the idea of a ‘Modern Mohalla’ and how it demonstrates intersectionality between formal and informal built environments via a feminist lens of lived experiences and their acts of ‘Mohalla-making’ in post-independence Pakistan. Taking the Government Housing Quarters of sector G-9/2 in Islamabad, Pakistan as the site of study where a Modern Mohalla is observed, this research under an interdisciplinary lens seeks to redress the quantitative approach that existing scholarly work portrays about this intersectionality. It aims to develop a qualitative critical historiographic insight concerning the lived histories of subaltern women in a particular community of Islamabad and their informal communal practices within a modernist environment. This work is a qualitative piece of research that explores the subject of the ‘Modern Mohalla’ in the Government Housing Quarter and its socio-spatial interrelationships by outlining the history of the Mohalla within the broader context of South Asia and linking its impact on the communal structure of Islamabad’s neighbourhoods today. Furthermore, this research aims to decode the relationship between Doxiadis’ theory of Ekistics and whether it serves as a facilitating agency for the feminist Mohalla-making practices. Through a critical ethnographic approach as its research methodology, this research inquiry aims to develop a critical historiographical feminist dialogue that counters the triple absence of women within the design process of Islamabad and the G-9/2 government housing, the existing scholarship concerning feminist spatial practices, and the subject of female lived experiences as archival data. The ethnographic research methodology includes interviews with the women living on site and translating their feminist Mohalla-making practices into drawings. These drawings seek to reveal the historical interrelatedness of feminist communal relationships in a Modern Mohalla of Islamabad that has been unacknowledged for years amidst a socially stratified and patriarchal setup.

Keywords:

Informal ; formal; Mohalla-making practices; intersectionality; feminist spaces

T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 1226**Urban Heritage and transnational networks in the case of Municipio Station in Naples, Italy****Authors:** Anita Martinelli¹; Sveva Ventre²¹ Polytechnic University of Milan² University of Naples Federico II**Corresponding Authors:** sveva.ventre@unina.it, anita.martinelli@polimi.it

Over the last decades, many historic cities have experienced major transformation as a way to improve urban infrastructure to facilitate the flow of goods, people and ideas, generating the environment of citizens' everyday life (Larkin, 2013). Among the strategies to better position the city worldwide, there are the expansion of metro lines and the involvement of high-profile architects (Augé, 1995), the so-called *star-architects*, which, in many institutional contexts, are brought by commercial dynamics for branding the image of a city through new architectural 'objects' (Alaily-Mattar, Ponzini & Thierstein, 2020). In particular, when acting on heritage-rich urban contexts it is often required great innovation and flexibility, due to the high levels of difficulty involved in the realisation of new infrastructure and considering the potential archaeological heritage beneath such sites. As a consequence, it is often required to introduce new methods of working and investigating in the integration of architectural interventions in the urban space (Lambertucci, 2016).

The case of Municipio metro station in Naples is part of the newly constructed metro line 1, also defined as the "Three A Metro Line" (Art, Architecture, Archaeology) and, being designed in the heart of Naples by the two Portuguese Pritzker Prizes A. Siza Vieira and E. Souto De Moura, acts as a forerunner in Italy. Dated back at the end of the '90s and partially inaugurated in 2015, it represents an example not only for the innovative techniques that have been developed, but also for facing contingencies that have influenced the order of events, changing the stakeholders dynamics and generating, in turn, solutions of extraordinary uniqueness. Furthermore, the project defines a profound transformation of one of the city's most representative public spaces (Piazza Municipio) and is the result of a refined cultural approach. Despite the sensibility of the archistars to the heritage-rich urban area, the development of the project has had to deal with on-site contextual issues, linked to the daily life of the city.

With this paper, the authors decided to analyse the case of Municipio Station reconstructing the complex network of actors - including experts, state bodies, local and international conservation organisations, companies and researchers - which have been involved in the realisation of the station and the square. Adopting the perspective of *assemblage theory* (Deleuze & Guattari, 1976; McFarlane, 2011), the study also includes non-human agents, recognizing their significant role in shaping outcomes, as they "*participate as near-equals in life on earth*" (Lieto & Beauregard, 2015), actively contributing to and influencing the dynamic network. Archaeology, now showcased within the station and in the still-under construction archaeological park, has fostered significant interactions, shaping the creation of new expertise and influencing urban policies. Viewed as an agent in public space and a public good that requires careful consideration in urban planning and policies (Dodson, 2009), infrastructure, likewise, can be understood as a part of "*extended material assemblages*" that produce tangible effects and shape social dynamics (Harvey et al., 2016).

This *socio-material infrastructure* enables an examination of the 'everyday articulations' between bodies, objects and spaces, resulting in accomplished and complex trajectories (Robinson, 2023). Through the analysis of specific events - presented as *vignettes* -, the authors provide process insights on single interventions, revealing interferences that emerge in the intersection of various agents and actors. By incorporating reports, field surveys, interviews, archival visits, and an ongoing effort to comprehend the transnational assemblage as a network of relationships, the study aims to initiate a reflection on the impact evaluation of the urban policies on the city and its heritage, highlighting how it is necessary to complement the technical strategy with a cultural approach.

Keywords:

heritage as process; socio-material infrastructure; transnational assemblage; urban policy impacts.

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 903

Framing the Narrative of Chinese Post-Colonial Heritage: Storylines and Mechanisms of Shanghai Concession Heritage Management

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Heritage serves as a pivotal medium in constructing collective memory and identity of nations and social groups (Meskell, 2005). Post-colonial heritage, with its inherently negative historical attributes, frequently becomes a contested site in heritage politics. As a prominent example of post-colonial heritage, the legacy of concessions in China occupies the core of many urban areas. Preserving the heritage value while addressing the discrepancies between their public perception and broader urban image falls to local governance. However, some concession heritage sites remain underutilized, others are dismantled due to their lack of alignment with state-promoted ideologies, and still others face challenges of over-development and insufficient public engagement (Athanasios et al., 2018).

Previous studies on the management of post-colonial heritage have analyzed the limitations posed by insufficient policy support, competition for interpretive authority among multiple groups, and neo-liberal regeneration strategies (Giblin, 2015). Nonetheless, these studies have yet to fully elucidate—let alone explain—the nuanced strategies made by Chinese urban governments in dealing with concession heritage and the dilemmas they currently encounter. In response, this paper contends that summarizing the prevalent narrative frameworks adopted by Chinese governments, rather than focusing on isolated case studies or imposing rigid theoretical paradigms, provides a pragmatic foundation for advancements in related research.

The concept of “storylines” is employed to provide a comprehensive representation of heritage images crafted by public institutions through diverse channels. Processes such as value assessment and site identification contribute to crafting these storylines, while planning and public projects materialize them in practice. Given the heterogeneity of concession heritage, it is implausible for a singular storyline to dominate the appropriation of its value. Instead, multiple storylines frequently coexist and intersect, shaped by the interplay of political-economic negotiations. In the Chinese context, local governments orchestrate this process, mediating between administrative agencies and other stakeholders (Zhu & Maags, 2020). Such storylines exhibit varying logics and priorities, with the evolving public perceptions they engender playing a catalytic role in urban mobilization and negotiation (Viderman & Knierbein, 2020).

Using Shanghai as a case study, this research drew extensively on policies, historical records, planning documents, and official media reports concerning the conservation and utilization of concession heritage. We identified the dominant storylines in Shanghai’s approach to heritage management, examined their impact on public consciousness, and explored the cultural tensions they engender. Additionally, we investigated the mechanisms underpinning these narrative constructs, analyzing how stakeholder preferences and institutional configurations shape the representation of concession heritage.

The result reveals three principal storylines in the governance of Shanghai’s former concession heritage: “Revolutionary Culture,” “Aesthetic Priority,” and “Haipai Culture.” The Revolutionary Culture storyline foregrounds the role of concession heritage as sites of historical figures and revolutionary milestones, emphasizing national consciousness and modern ideals while aligning with central policy priorities. The Aesthetic Priority storyline de-emphasizes the political and identity conflicts within historical narratives, favoring an interpretation that celebrates cultural fusion and artistic innovation. Conversely, the Haipai Culture storyline accentuates Shanghai’s distinctive identity, underscoring inclusivity and global interconnectedness as core attributes, which aligns with market-driven development strategies. Through these storylines, local governments aim to harmonize the divergent demands of Government agencies, market, and community, striving for an overarching governance of the urban image. However, these narratives often lack the specificity required to inform granular practices. Consequently, projects risk overemphasizing narrow aspects, such as economic imperatives in Haipai Culture or revolutionary symbolism in local history, leading to over-development and diminished heritage integrity.

This study reveals the achievements and limitations of a local government-led model of post-colonial heritage management in narrative construction, offering insights into potential power redistribution within the heritage management system.

Keywords:

Heritage management; Narrative; Shanghai former concession; Local government

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 1309

Spatial Identity and Urban Form: Nation-wide Research for Slovenia

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This research investigates the relationship between spatial identity and urban form within the context of Slovenian settlements. Focusing on the dynamic interplay between historical and contemporary urban development, the study aims to understand how evolving morphological and architectural patterns and design contribute to, and are influenced by, the nation's unique cultural identity on one side and contemporary spatial processes on the other hand. While traditional architecture has long been a cornerstone of Slovenian identity, this research expands the scope to encompass the multifaceted influences of post-World War II urbanization, globalization and contemporary socio-economic transformations on the built environment.

To achieve this, the research employs a multi-faceted methodological approach that combines rigorous quantitative analysis with qualitative insights. A key component is the "Mappi Method," a novel approach that is based on the Geographic Information Systems (GIS) to analyze spatial patterns in detail. By examining a comprehensive dataset of Slovenian settlements, ranging from small villages to large cities, the research focuses on analyzing key morphological characteristics, including building types, densities, street patterns, land use distribution and green space networks. This in-depth analysis, complemented by in-situ observations and historical document analysis, aims to identify distinctive spatial signatures that characterize Slovenian settlements and contribute to a strong sense of place.

Beyond mere description, the research delves into the underlying socio-economic, cultural and historical processes that have shaped the evolution of Slovenian urban form. It investigates the interplay between local traditions, external influences and the impact of key historical events on architectural styles, urban planning decisions, and the overall character of settlements. By examining how these factors have interacted with the physical landscape and existing built environment, the research seeks to understand the complex forces that have shaped the distinctive character of Slovenian settlements.

The findings of the research will have significant implications for urban planning, architectural design and heritage conservation in Slovenia. By identifying the essential elements of Slovenian spatial identity, the research will provide valuable insights for policy-makers, planners and architects in developing strategies for future urban development that respect local identity, preserve cultural heritage and enhance the quality of life for residents. These findings will inform the development of evidence-based guidelines for sustainable urban development, ensuring that contemporary needs are met while simultaneously safeguarding and enhancing spatial identity. The research findings aim to be integrated into the National Spatial Order as a national-level guidance for spatial planning, specifically focusing on the preservation and enhancement of spatial identity through urban and architectural design.

Furthermore, this research has the potential to contribute significantly to international scholarship on urban morphology and cultural identity. By applying the “Mappi Method” and the research framework developed in this study to other cultural contexts, it advances the understanding of how spatial patterns shape cultural identity and inform sustainable urban development globally. It seeks to contribute to a more informed understanding of the complex relationship between urban form, culture and identity.

Keywords:

identity by design; urban morphology; architectural design; GIS; Mappi method

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 1460

Heritage privatization in Venice: public-private interests in the conversion of the Fondaco dei Tedeschi into a luxury store

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In recent years, cultural heritage has become a favored resource in real-estate dynamics, particularly in historic cities. Privatization, deeply rooted in processes of financialization of urban policy, has indeed exploited the real-estate value embedded in such assets, not infrequently leading to speculative mechanisms, as well as social exclusion. The interaction of public and private actors is shaped by specific policy and regulatory frameworks that, in different national and local contexts, seek to harness social values from these market interventions.

Reflections on this topic are particularly enriching when considering the city of Venice in North-Eastern Italy, a heritage-rich context subject, in recent years, to selling state-owned properties –such as buildings and even the remote smaller islands of the lagoon –to foster global investments and touristification.

This contribution explores how different actors (public authorities, private developers, transnational architects, and civil society) interact and negotiate, by specifically reflecting on the conversion of the Fondaco dei Tedeschi into a major luxury store. This case is particularly illustrative of the way public and private actors have interacted, in the last years, to foster urban transformations in the lagoon city. Built in the early 1500s and once an important commercial hub between the Republic of Venice and German traders, it was heavily altered during the 1920s and 1930s in successive conservation projects aimed at transforming it into the headquarters of Poste Italiane (mail service). Such a public function was held until 2009, when the Municipality of Venice sold the building to Edizione Srl, a financial and real-estate company of the global fashion brand Benetton. Amidst the uncertainties of the European crisis of 2007 and of the global financial crisis of 2008, Fondaco rapidly became an emblem of the heritage-driven privatization affecting Venice in the past 20 years.

The formal agreements that followed its alienation, the changing from public to private function, and the architectural transformations proposed by Rem Koolhaas'office (OMA), expose the convergence and contraposition of interests among public and

private actors, national and transnational. We portray this process in detail, analyzing the documents related to the approval of OMA's design, the agreements made between the Municipality and Edizione, as well as the press releases of the period 2010-2016.

In this process, transnational actors such as OMA and the DFS Group (in charge of the commercial management of the Fondaco) stretched the foreseeable limits of such interactions in the interplay of capital, urban planning and heritage –nonetheless with interests of their own. Furthermore, individual actors in charge of such organizations were put at the forefront as they advocated for mutually favorable (but not necessarily well-balanced) public-private partnerships. These partnerships highlight a “regulation through agreements” that increasingly challenges the Venetian urban governance. They aim to find a balance between attracting capital to foster growth in a rapidly depopulating and ageing city, while at the same time maintaining some kind of public access to them.

As dissonant voices grew, the political outcomes were questioned by techno-administrative instances, and the actor network constellation, including non-human agents, generated significant consequences that substantially affected the intervention proposed and finally built between 2014 and 2016. The analysis also considers the recent news announcing the failure of the commercial enterprise after less than 10 years of activity, and the closure of Fondaco scheduled for the first semester of 2025.

Eventually, the case of Fondaco helps understand the mechanisms of property regulation in Venice, at the same time allowing for a more general reflection on similar dynamics within heritage-rich contexts.

Keywords:

heritage privatization; public-private partnerships; transnational architecture; Venice

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 1389

Exploring the Emotional Dynamics of Beyoğlu's Transformative Urban Atmosphere through Music Ecosystems

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This study investigates the interplay between emotional connections and urban spatial transformations in the Beyoğlu district of Istanbul, focusing on the music ecosystem as a critical lens. While traditional spatial research often marginalizes emotional dynamics, this research emphasizes how emotions serve as integral components in understanding urban atmospheres and spatial practices. Drawing from the emerging field of emotional geography (Anderson and Smith, 2001; Bondi, Davidson and Smith, 2007; Davidson and Smith, 2009; Parr, 2014), the study underscores the necessity of examining spaces not

only through rational frameworks but also through the lived, emotive experiences they invoke.

The research spans the period from 1990 to 2025, a transformative era for Beyoğlu marked by its pedestrianization in 1990 and subsequent neoliberal urban policies. These policies have both revitalized the district and catalyzed challenges such as gentrification, loss of cultural continuity, and shifts in social cohesion (Eder and Öz, 2015; İnce, 2011; Türkün, 2021; Güney, 2015). Like many others, Beyoğlu, once a vibrant hub for Istanbul's music culture, has experienced the tension between its rich emotional and cultural heritage and the pressures of commodification. Small-scale music venues, artisan workshops, and informal cultural practices have been replaced or marginalized by larger, more commercial projects, disrupting the intricate emotional ecosystem that defined the area.

Focusing on Beyoğlu's music ecosystem provides a unique perspective on urban emotional dynamics. This ecosystem—comprising small venues, music studios, instrument craftsmen, performers, and audiences—functions as a relational network that shapes the district's atmosphere. By engaging with theories of affective atmospheres and emotional geographies, this research demonstrates how music ecosystems not only reflect but actively co-create urban emotional landscapes.

The methodological approach combines visual and sensory methodologies with in-depth qualitative interviews to explore the emotional and sensory dimensions of Beyoğlu. The study investigates how emotional ties to spaces are forged through music-related practices and how these connections are impacted by urban transformation. It also explores the performative nature of emotional atmospheres, illustrating how collective experiences in music spaces contribute to the making and unmaking of urban identities.

Findings reveal that music ecosystems play a dual role: they act as anchors of cultural memory and emotional continuity, while simultaneously serving as sites of resistance against homogenizing urban policies. By drawing attention to the relational and emotional underpinnings of spatial practices, this research offers new insights into the possibilities of fostering culturally and emotionally sustainable urban futures.

Ultimately, this study bridges the gap between emotional geographies and urban planning, proposing a framework for understanding urban transformation that is grounded in emotional and sensory experiences. Beyoğlu serves as a case study for illustrating how emotional connections to space can inspire more inclusive, adaptive, and resilient approaches to urban development.

This research is conducted as part of the author's ongoing doctoral thesis supervised by Prof. Dr. Murat Cemal Yalçın at Mimar Sinan Fine Arts University.

Keywords:

emotional geography, music ecosystems, affective atmospheres, sensory methodologies, video methods

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 1832

Cinematic Cityscapes: A Filmic Exploration of Urban Cultures in the Contemporary Fiction Films of Directing Duo Adil El Arbi and Bilall Fallah

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This research explores the cinematic imagination of contemporary urban landscapes to contribute to the current transition debate. In our mediatized society, film, among other media, influences the dynamics and implementation of spatial transitions, particularly in the realm of the envisaged building shift in Flanders. This building shift includes the densification of urban centers in order to preserve the remaining open space. To counter the traditional technological approach, a cinematic lens is used to uncover how these visual narratives both reflect and contribute to contemporary discourses on the lived experience in Flemish cities. As the urban environment increasingly becomes a site of contestation between planning discourses and everyday practices, the significance of these cinematic imaginaries in bridging the gap between spatial theory and everyday lived space becomes apparent.

A case study approach, focusing on fiction films set in city centers, particularly the works of the Belgian directing duo Adil El Arbi and Bilall Fallah, provides a comprehensive understanding of the everyday lifeworld that conventional instruments (e.g., GIS, statistics) often fail to capture. The films *Image* (2014), *Black* (2015), and *Gangsta* (2018) prominently feature Flemish cityscapes, particularly the modernist (social) housing blocks of cities such as Antwerp and Brussels. These environments are frequently subjected to negative framing in public discourse, yet their portrayal in cinema provides an alternative means of engagement. Through a detailed spatial analysis using video annotation software, this study examines the morphological and sociological aspects of these cinematic representations.

The study is centered around three stages: scrutinizing what is represented and how audiovisual (camera) techniques express a spatial-morphological reading of spaces (representation stage), how the narrative relations express a social construction (reflection stage), and probing the potential mediation role of cinema (reception stage).

Findings indicate that the films of El Arbi and Fallah construct a layered and multifaceted urban narrative, in which teenagers claim their space. This is reflected in the portrayal of public spaces as the primary arenas where life unfolds for these young adults. These films offer a unique perspective on the "sense of place" within cities, portraying neighborhoods and districts in terms of their character, identity, and role in shaping community interactions. Furthermore, this research indicates a predictive value of these movies by capturing what is at stake in these areas.

In conclusion, this paper argues that the transformative power of cinema can serve as an essential complement to urban studies, offering new perspectives on the cultural and social complexities of Flemish cityscapes. The attention to the interrelationship between people and place, along with the emotions embedded in film, positions cinema as an interdisciplinary tool for planning. Recognizing film as a medium that bridges lived experiences and spatial theories enriches the discourse on urban development and contributes to a more holistic and nuanced planning culture.

Keywords:

cinematic urbanism; narratives; public space; urban culture

T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 99**The inheritance mechanism of rural living heritage in China based on the model of "rural governance - policy supply - protection and activation"****Author:** SIJIE LIU¹¹ college of architecture and urban planning, Tongji university**Corresponding Author:** 2310335@tongji.edu.cn

In the past 40 years, China's urbanization rate has increased from 18% to 66%. Cities have expanded rapidly and rural areas have collapsed rapidly. This process has caused serious damage to China's rural cultural heritage. How to rescue and protect rural cultural heritage and achieve sustainable use is an important issue in China's rural areas.

From the endogenous characteristics of Chinese villages, it is a highly autonomous clan society, independent of the administrative agencies of "central-provincial- municipal-county". This determines that the protection and renewal of villages needs to rely on rural governance. However, as a strong government society, China's rural self-revitalization ability is not strong, the protection and utilization of rural cultural heritage cannot be separated from policy supply. Based on this, this paper studies the triadic dialectics of "rural governance - policy supply - protection and activation", builds a theoretical influence model of the three, and puts forward the core views that rural governance is the tool, policy supply is the guarantee, protection and activation is the purpose.

This paper takes Zhongshan of Guangdong Province where China's rural economic activities are most active, as a case study. Taking rural governance as the starting point, this paper analyzes the protection and utilization of cultural heritage in the process of rural evolution in Zhongshan under the influence of policy supply since 2018, and responds to the theoretical model from the case level. It also proposes suggestions for establishing a feedback mechanism for the protection and utilization of rural cultural heritage: First, improve the regional resource survey mechanism, conduct thorough investigations, and promote the pre-protection of valuable buildings. Second, strengthen top-level design guidance. Traditional village planning should include special content on historical and cultural protection, delineate historical and cultural protection lines and clarify positive and negative lists. Third, take governance as the core theme, give full play to the role of village collectives, and realize multi-governance of city-town-village planners-social public. Fourth, regularly carry out rural physical examinations and assessments, and provide real-time feedback on the effectiveness of protection and renewal. Fifth, establish a supervision and inspection mechanism, not only to strengthen administrative supervision, but also to give full play to the autonomous supervision power of villagers, and then fully realize "village affairs of village governance."

Keywords:

rural governance; policy supply; protection and activation; rural lived heritage

References:

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 1539**Canal Imperial de Aragón, the functionality of a water infrastruc-**

ture and the inheritance of a traditional agriculture landscape in Spain

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Canal Imperial de Aragón is one of the most significant hydraulic infrastructures throughout Europe and probable the most ambitious project in the history of Aragón. The project dates to 1528, at the time Acequia Imperial was being conceived, though it was built in the last quarter of the XVIII century. From Fontellas (Navarre) to Fuentes de Ebro (Aragón), this infrastructure has over 100 kilometers of constructed channels for navigation and irrigation purposes.

Initially, the plan was conceived to overcome the meanders of the Ebro River in its middle segment, making it navigable and with a connection to the sea for exchanging agricultural products purposes. Although only one part of it was completed, it constitutes a significant example of a flood irrigation system, as it supplies water to a total of 26,500 hectares irrigated lands on the left bank of the canal, extending to the banks of the Ebro River, with a smooth slope, which allows navigation in both directions.

This area constitutes an example of ancestral agricultural landscapes, built according to soil fertility, scarce water resource, and based on a social organization founded on the collective right to water and land (Ruiz-Varona et al., 2022). The evolution of these landscapes has been closely intertwined with the urban activity, mostly represented by the functional urban areas and main cities that sustained them, among others, Zaragoza. This landscape presents a notorious fragmented mosaic of urbanized territory, while contains spaces of high environmental value, typically of peri-urban dynamics that occur in the interface between agricultural stressed by the pressure of urbanization. However, this enclave of traditional agriculture landscape constitutes a unique heritage in Europe that dates back over a thousand years and are significant for its identity (García-Mayor & Canales-Martínez, 2017).

The spatial and functional complexity of these areas is also determined by the increasingly higher demands for water use control, since irrigators are required to report their water consumption and keep their crop records updated (MITERD, 2023), but at the same time, preserving its environmental and cultural landscape values. Traditional flood irrigation (riego a manta) is organized through irrigation rotation systems and rights allocated to plots. To cover all these plots, ditches and gates are located over the 26 irrigation communities that cover the canal. However, there is a risk of altering this landscape if a more accurate method for calculating water consumption is obtain, instead of the currently used, which relies on land surfaces and historical data.

This work analyzes the main significant elements that characterize this infrastructure, such as locks, or constructions with greater symbolic value, such as Fuente de los Incrédulos, to provide objective reasoning of how these elements have shaped from the past the cultural heritage from today. The study is based on the analysis of the main existing ancient cartographic documents. In addition, based on Geographic Information Systems, this study reconstructs the hierarchy and topological dependencies of all the existing elements (main and secondary irrigation ditches, locks, and floodgates) that comprises the current irrigation network of the Imperial Canal of Aragon. Findings also contribute to clarify the role of this hydraulic infrastructure as a key element of cultural and heritage value within the territory, while also summarizing the main actions currently being implemented to ensure balanced water management without impacting or risking this peri-urban landscape.

Keywords:

Agricultural landscapes; GIS; Hidraulic infrastructure; Traditional Irrigation; Aragón

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 1146

Reviving Living Heritage in Antakya: Pathways Towards Community-Led Planning

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The proposed paper examines the concept of “living heritage” in the context of post-disaster planning and reconstruction, focusing on practice-based research conducted by the authors in collaboration with Architecture Sans Frontières UK (Architecture Without Borders) and local partners in the area of Antakya, Türkiye, following the devastating earthquakes that struck the region in February 2023.

Nearly two years have passed since these catastrophic events, which resulted in the destruction of approximately 85% of Antakya and displaced a significant portion of its population. To date, much of the city remains a construction site, with many residents still living in temporary shelters.

The historical background of Antakya complicates the rebuilding efforts, as the region has a long history of state-led cultural erasure and dispossession. Consequently, both immediate relief operations and long-term reconstruction have become highly politicised, with residents fearing that government-led initiatives will reshape the city’s socio-spatial structure and demographic balance without adequate local input. Despite superficial calls for local involvement, meaningful engagement with residents remains limited, underscoring the need for concrete grassroots planning initiatives that articulate a shared vision for Antakya’s future.

In response to the shortcomings of government plans and the growing social opposition advocating for resident-driven development, our coalition—comprising Architecture for All and Hatay Earthquake Solidarity—aims to promote community-led approaches in the planning, design, and implementation of reconstruction efforts. Since the summer of 2023, we have actively engaged various local stakeholders in this complex environment, aiming to co-produce more inclusive and equitable pathways for the city’s reconstruction.

A central element of our strategy has been to focus on the concept of “living heritage” as a framework for fostering dialogue and advocating for meaningful community involvement in rebuilding homes and neighbourhoods. This approach encourages the articulation of shared visions for the city of the future, grounded in people’s values and lived experiences.

This paper will critically review our experiences in implementing participatory planning within this context, highlighting the challenges and opportunities we have encountered in building coalitions, forming partnerships, and identifying effective advocacy channels centred around the notion of “living heritage.”

Keywords:

Living heritage, community-led planning, post-disaster reconstruction, Antakya

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 110

The Intersection of National Image, Urban Development, and Civic Life: A Study on the 70-Year Evolution of Large-Scale Sports Architecture Heritage in Beijing

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Guided by the goal of sustainable development, “Olympic legacy” refers to the long-term benefits brought to residents and cities by the Olympic Games or other major sporting events. Effective reuse of Olympic legacy has become a critical issue in modern Olympic practice. Consequently, the construction, development, and adaptive reuse of **large-scale sports architecture heritage**, often referred to as “event legacy,” have attracted widespread academic and professional interest in urban planning and architectural studies. As the physical embodiment of symbolic urban imagery, large-scale sports buildings in capital cities serve as vital platforms for promoting social equity and fostering social cohesion. Beyond their primary event functions, these architectural landmarks remain significant elements of the urban cultural landscape, preserving collective memory while reflecting the tension between local identity and global urbanization. They represent the intersection of national image, urban development, and the everyday lives of citizens.

This study investigates the evolution of large-scale sports architecture heritage in Beijing, exploring how these structures have reflected national and urban identity across different historical periods and how they have integrated with civic life. A longitudinal temporal analysis and a cross-national comparative approach were adopted to examine the construction contexts, scales, design philosophies, public engagement, and architectural representations of Beijing’s sports buildings over the past 70 years. Five comparable cases from other capital cities were also analyzed. The findings highlight the temporal characteristics of these structures and identify three major evolutionary trends:

1. **Event-Driven Development and Global Influence:** The construction of Beijing’s stadiums has transitioned from regional to international prominence, driven by celebratory events with increasing scale, societal significance, and global impact.
2. **Cultural Evolution of Architectural Styles:** A comparative analysis reveals a progression from imitative Western formalism to a confident embrace of sustainable, low-carbon design underpinned by cultural self-assurance, illustrating a dynamic shift from “learning from the West” to a parallel coexistence of traditions.
3. **Spatial Integration and Functional Complexity:** Stadium locations have gradually shifted outward with urban expansion before reintegrating through adaptive reuse into central urban cores. Their functional transformation from single-use mega-venues to comprehensive complexes blending sports, culture, tourism, and commerce exemplifies an interactive and multifaceted spatial evolution.

Large-scale sports architecture heritage is not merely static infrastructure but dynamic cultural assets. Confronted with challenges such as tourism-driven commercialization,

gentrification, and climate change, these venues continually redefine their social functions and cultural significance through everyday use and special events. This study proposes strategies for optimizing the urban spatial integration and sustainable reuse of sports architecture, focusing on enhancing accessibility, urban connectivity, and social inclusivity. Key recommendations include improving transportation networks to boost accessibility, optimizing spatial efficiency and user experience, and integrating surrounding land uses to strengthen spatial cohesion and multifunctionality. These strategies aim to enhance public engagement, promote the sustainable development of architectural heritage and urban space, and ensure these iconic venues remain vital symbols of national identity, linking past, present, and future.

Keywords:

Beijing; Sports architecture heritage; national image; urban development; civic life

T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 1701

Manufacturing Heritage for Piazza Garibaldi in Naples (Italy)

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In 2013, the star architect responsible for the new subway station in Naples' Piazza Garibaldi declared that he was "a little jealous of the other metro sites [in Naples], where there are some ruins, where there are some traces of history." Preliminary archaeological surveys had revealed, in the architect's words, an underground space "that history hadn't taken over yet." The shared understanding between the architect, municipal officials, and engineers leading the project was that Piazza Garibaldi and its underground lacked elements that could be valued as archaeological, architectural, or intangible heritage. Moreover, because of its immediate vicinity to the central railway station, Piazza Garibaldi has long been a contested and socially diverse space, home to migrant residents and urban cultures that are overwhelmingly devalued in the mainstream media and public opinion.

In a context marked by both the absence of heritage-worthy historical traces and the presence of stigmatized urban cultures, the architect made a bold claim: he posited that his design firm must "create" its "own traces of history." This paper begins with this curious idea—the creation of historical traces—to shed light on aspects that influence much of heritage-related planning praxis but are often ignored: the unquestioned presumptions about what counts (or not) as heritage; the practices and agents through which heritage is actually imagined, contested, and materialized; and the ways in which such manufactured heritages interact with and further transforms their context.

To answer these questions, we examine the case of Piazza Garibaldi. Its perceived lack of heritage-worthy elements is often attributed to its location. Before the 1840s and the construction of the old central railway station (which would be demolished a century later), the site of the piazza lay outside Naples, in an area of agricultural wetlands that stretched beyond the city's medieval fortifications. Today, Piazza Garibaldi is situated between the new 1950s railway station and Naples' densely urbanized, three-millennia-old historical center. In the early 2000s, the normative limits of the historical center and of zones of archeological interests were expanded, eventually including Piazza Garibaldi. While the 1950s railway station remained excluded from these designations, it was nevertheless listed as a noteworthy example of post-war modernist architecture. Despite this partial inclusion in the city's formal heritage, Piazza Garibaldi continues to be regarded by planners, architects, and city officials as outside the core of Naples' historical and cultural identity. Drawing on recent heritage and planning literature influenced by assemblage thinking, we argue that in historically and socially contested

places like Piazza Garibaldi, heritage-worthy elements are best understood as “relational objects”(Lietao, 2018). This perspective allows us to consider the open-ended “reassembling [of] bodies, techniques, technologies, materials, values, temporalities, and spaces”as the process by which invented heritage is made a reality (Harrison et al., 2020:6).

To demonstrate how this approach can guide more contextually sensitive planning practice, we draw on ethnographic research methods to examine the empirical processes by which urban heritage was invoked, interpreted, and manufactured during the design and construction of the new subway station at Piazza Garibaldi. First, we explore how the architect paid homage to the modernist railway station, offering a concrete example of how historical traces and heritage-worthy elements are created. Second, we investigate the decade-long controversy surrounding the imagined and contested nature of Piazza Garibaldi’s “authentic”market activities. This dispute involved city officials, architects, migrant residents, and users who sought to assert their urban cultures on their own terms, alongside a range of practices and material agents. Finally, we consider how the heritage thus manufactured interacted with the socio-spatial configuration of Piazza Garibaldi, reshaping its urban context.

Keywords:

invented heritage; socio-material assemblages; authenticity

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 1008

The Spatial Dynamics of Cafés as Everyday Urban Spaces: Exploring Socialscapes through Streetscapes

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In recent years, cafes located on side streets or in the peripheries of major commercial centers have emerged as a significant trend. These establishments overcome less favorable locational conditions by offering unique and differentiated experiences that set them apart from traditional retail spaces. Moreover, in urban contexts, cafes have evolved beyond their functional role as providers of food and beverages, becoming vital spaces for everyday social interaction and cultural exchange. The spatial evolution of cafe locations reflects a notable shift in consumer preferences, driven by the rise of social media and the commodification of urban spaces, from traditional accessibility-driven locational strategies to a greater emphasis on streetscape quality. This shift highlights the growing significance of cafes as third places, where evolving locational dynamics enhance their role in fostering social interaction, cultural exchange, and a sense of community.

Furthermore, pedestrians’ perceptions of place derive from the interaction between the physical environment of the streetscape and individual establishments. Cafes, as

quintessential spaces of spatial consumption, make it essential to understand how streetscape qualities influence location decisions. However, most studies focus on traditional locational factors such as accessibility and agglomeration effects. How do visual and perceptual streetscape characteristics shape location patterns, and what do these patterns reveal about the evolving relationship between urban commercial activity and cultural landscapes?

To address these questions, this study examines Hongdae area, Korea—a central business district known for its vibrant culture, artistic creativity—to evaluate the limitations of traditional location theories in the location of cafes and to explore their broader role in urban spaces. To this end, semantic segmentation techniques and a deep learning model based on the Place Pulse 2.0 dataset are used to categorize streetscape characteristics into visual attributes (e.g., greenness, openness) and perceptual qualities (e.g., liveliness, aesthetics).

The findings reveal a significant departure from traditional commercial location theories that prioritize foot traffic and centrality. Consumers increasingly prefer locations that provide aesthetic value, a sense of place, and opportunities for social interaction. The analysis showed that in the initial phase, cafes were primarily located in high-traffic commercial areas near Hongik University, reflecting conventional locational factors. In the second phase, characterized by the expansion of commercial activities, cafes gradually shifted towards semi-peripheral areas such as Sangsu-dong, offering pedestrian-friendly environments with broader sidewalks and reduced enclosure. By the third phase, cafes were increasingly located in residential neighborhoods like Yeonnam-dong and Mangwon-dong, integrating into narrow alleys with visually appealing streetscapes. These areas reflect a growing consumer preference for unique, experiential spaces over purely functional convenience. This trend illustrates the increasing importance of visual and experiential urban qualities in shaping consumer behavior—a shift further amplified by social media's emphasis on visually appealing and shareable spaces.

From an urban planning perspective, these findings highlight the dynamic and interconnected processes through which sense of place, urban culture, and living heritage evolve. Cafes contribute to these processes by shaping and responding to the cultural identity and social vitality of urban spaces. This research suggests a planning framework that considers streetscapes not as static elements but as active components in fostering a sense of place and cultural continuity. These insights emphasize that urban planning can create environments that integrate aesthetic, social, and cultural dimensions, enhancing their relevance and resilience in a rapidly changing urban context.

Keywords:

Cafes; Location Shift; Spatial Dynamics; Streetscape; Walkability

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 1743

From Rise to Decline and Back Again? Delving into the Potential of Revitalising the Historic Neighbourhoods of Eleftheroupoli, Greece

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This study investigates the historic neighbourhoods of Eleftheroupoli, a small-sized town in Northern Greece, aiming to explore how site analysis can unlock regenerative potentials for semi-derelict historic places like this. Eleftheroupoli, a former center of the tobacco industry, has witnessed significant decline in the 1980s, leading to the neglect and abandonment of its once-thriving heritage. Despite the challenges it faces, its historic neighbourhoods hold a significant cultural value that could be recognized as a living cultural landscape. This research aims to explore how a comprehensive site analysis can contribute to the revitalization of Eleftheroupoli by identifying its latent potentials for urban regeneration.

The methodology employed in this study builds on an in-depth, multi-level urban analysis and site assessment, examining Eleftheroupoli both in its current state and within its historical context. The research integrates various approaches to provide a comprehensive understanding of the site, combining traditional methods with digital tools. This includes historical and urban analysis, architectural documentation based on fieldwork and bibliographic material, archival and empirical research, such as interviews with local stakeholders, as well as identifying key administrative agencies. Geographic Information Systems (GIS) are used for spatial data capture and analysis, allowing for detailed mapping of the site's evolution. Observations on the historic development of the site were made through the production of orthophoto-mosaics from historic and recent aerial photos (1952, 1973, 2016). Photographical documentation and comparative studies of relevant previous research further enrich the analysis, helping to contextualize the findings. By integrating these methods, the research enhances the standard process of historical urban site analysis with a digital approach, enabling a deeper understanding of the site's physical, social, and cultural dynamics.

The findings of this study reveal that Eleftheroupoli has experienced a form of protection without conservation, leading to the neglect of its heritage. Although its historic neighbourhoods were demarcated and designated as a protected historic site in 1983 to safeguard its cultural and architectural significance, the lack of active preservation efforts and strategic regeneration planning has resulted in their decline. Nevertheless, the site's collective memory remains deeply embedded in the local community's identity, reenacting dormant spatial dynamics. Several narratives emphasize the existence of streams that once flowed through the town, as well as the historic bridges that connected the neighbourhoods on either side. If properly harnessed, these elements could play a crucial role in the neighbourhoods' regeneration. Eleftheroupoli's physical space is not merely a relic, but an active participant in the ongoing narrative of the community's history. Thus, the study calls for a redefined approach to preservation—one that embraces sustainable urban regeneration and addresses the complex challenges of safeguarding cultural landscapes.

In conclusion, this research argues that the integration of fieldwork with digital humanities methodologies can reveal hidden dimensions of urban regeneration. The use of GIS for data capture and analysis, coupled with the engagement of local communities and stakeholders, provides a viable pathway for the revitalization of Eleftheroupoli. By reinterpreting the site's urban, architectural and lived heritage as a dynamic cultural landscape through both technological and social lenses, it is possible to devise innovative strategies for preservation and regeneration that bridge the gap between the past and the future. This approach calls for a shift in how we view heritage preservation—not as a static, passive act, but as a dynamic, transformative process that can re-energize historic places and offer sustainable pathways for their future.

Keywords:

urban regeneration; cultural landscapes; historic preservation; site analysis; GIS mapping

T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 1747**Emerging archaeology and cultural landscapes in the Campi Flegrei: a knowledge-building laboratory for territorial regeneration**

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In recent decades, the role of cultural heritage has evolved, shifting from a passive object of protection to an active resource in territorial and urban regeneration processes. This evolution is evident in recent definitions, policies, and management practices that reflect an integrated vision of heritage—not merely as material inheritance but as a dynamic network of relationships involving communities, landscapes, and practices. Consequently, cultural heritage can serve as a strategic resource in orienting urban planning processes to address major contemporary challenges, such as climate change, social inequalities, and the crisis of the welfare system.

This contribution is part of the DiARC research project *Strategies4Changes*—developed within the Extended Partnership PE5 (PNRR Next-GUE)—which aims to define intervention strategies for cultural landscapes by applying theoretical research to the Campi Flegrei case study. This vast area represents an ideal laboratory for exploring the potential of heritage as a regenerative resource. The Campi Flegrei embody the characteristics of ‘cultural landscapes’, extending also to ‘ordinary landscapes’, not necessarily distinguished by exceptional historical or environmental values but by the stratification of human uses and transformations.

This vast area west of Naples is distinguished by an extraordinary concentration of historical and archaeological assets, extending far beyond the sites officially included within the Campi Flegrei Archaeological Park. Many of these assets are compromised by uncontrolled urban expansion, illegal construction, and environmental risks, such as bradyseism. This results in a challenging coexistence between heritage and its surrounding context, as well as an inadequate understanding of the assets themselves, leading to disparities in management and accessibility. Not all cultural sites are included in tourism and preservation circuits, often remaining neglected as they are not properly surveyed.

Among the various ‘figures’ that heritage assumes in these territories, one of the most significant is expressed through the concept of “emerging archaeology.” This term refers to how archaeological remains interact with contemporary urban environments. Through this perspective, it is possible to reinterpret the stratification processes that have scattered the Campi Flegrei with fragments, hidden deposits, and large concentrations of heritage—whether protected or neglected, exposed or submerged, enclosed or encroached upon by unplanned urban expansion. In this framework, cultural landscapes reveal a dynamic coexistence of ancient ruins and newly emerging remnants, where historical layers intersect with evolving urban strata, continuously overlapping and reshaping one another.

The methodology adopted aimed to develop a detailed survey of archaeological assets within a GIS environment, creating a comprehensive knowledge base on their contextual conditions. This approach was designed to investigate their potential within socio-spatial regeneration processes and their coexistence with environmental and urban risks. Through the dynamic interaction between the GIS database, which spatializes heritage data and physical site conditions, and the photographic survey, the study examines and represents different modes of emergence, whether perceived or latent, through which heritage interacts with socio-spatial dynamics.

Constructing this knowledge framework represents a significant step forward for the Campi Flegrei, fostering deeper awareness of the scale and potential of its cultural heritage. It also serves as a foundation for integrated strategies, positioning heritage as a territorial infrastructure capable of promoting local welfare alongside innovative territorial policies.

This contribution explores regenerative scenarios in which cultural heritage plays a

central role in: (1) developing new networks and alternative itineraries to mass tourism, enhancing accessibility and intermodality; (2) proposing multifunctional public spaces, conceived also as strategic areas for emergency management, such as assembly points and escape routes.

The study investigates strategies for reactivating heritage assets as spaces of interaction and shared use for local communities, contributing to the improvement of residents' living conditions, territorial facilities, services, infrastructure, public spaces, and a redefined dimension of welfare.

Keywords:

cultural heritage, emerging archeology, public spaces, urban regeneration, cultural landscapes

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 1339

Exploring Policy Frameworks for Cultural Heritage in Climate Adaptation and Disaster Risk Management: A Cross-Case Comparison

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Climate change adaptation strategies require a spectrum of actions, from incremental adjustments to transformative changes in societal systems. Transformation involves shifting the foundational attributes of these systems, such as value systems, regulations, financial institutions, and technologies (IPCC, 2012, p. 4). However, despite its potential, transformative climate governance faces significant challenges in implementation, often remaining secondary to business-as-usual interests and traditional policy approaches. There is an urgent need for paradigm shifts within institutional and organizational structures prioritizing climate action across scales and sectors.

The AGREE (Advancing Cultural Heritage Governance for Resilient Climate Adaptation) project focuses on governance frameworks and investigates the role of policy portfolios

in facilitating and implementing transformative change (Hurlimann, 2024). This paper explores the intersections of cultural heritage conceptualizations, climate adaptation policies, and Climate Risk Management (CRM) across three European case studies: Kingston upon Hull (UK), Lillehammer (Norway), and Turin (Italy). Using Guzman and Daly's (2021) conceptual framework for Policy Integration analysis, the study examines how cultural heritage is understood and operationalized and how these understandings enable or hinder synergies across governance sectors at national and local levels, with flooding as a common climate risk exacerbated by climate change.

The paper also investigates the potential of the Historic Urban Landscape (HUL) concept to drive transformative policy and planning, aligning heritage conservation with broader societal and climate adaptation goals. Findings highlight the importance of vertical and horizontal policy coherence in integrating heritage conservation into sustainable and equitable climate adaptation practices. By exploring the intersection of cultural heritage management and climate adaptation in policy portfolios, the research contributes to identifying ways to not only respond to climate change but also unlock the potential of broader governmental sectors to transform their practices for sustainable societal development. Preliminary results suggest several key policy recommendations: enhancing integration by aligning fragmented planning processes, bridging gaps between strategic frameworks and operational decisions, and identifying entry points for transformative change through a shift from reactive to proactive risk management approaches. The AGREE project illustrates how coordinated efforts can leverage cultural heritage as an asset for sustainability and resilience in urban contexts.

Keywords:

transformative change, policy integration, Historic Urban Landscape, adaptation governance

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 278

(Re)Production of Urban Space through Cultural Events: Legacy of the Bergama Festival

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Urban space emerges as a dynamic arena where spatial, social, and political forces converge and interact. This research examines how the temporary use of public spaces during events can permanently transform perceived, conceived, and lived spaces. Events, through their capacity to reshape the form, function and meaning of public spaces,

serve as key agents in this process of transformation. The Bergama Festival, a prominent cultural event in İzmir, represents an integral element of the city's cultural heritage. Bergama's historical legacy, spanning Roman, Byzantine, and Ottoman periods, earned its designation as a UNESCO "Multi-layered Cultural Landscape" in 2014. Initiated as one of the Turkish Republic's earliest tourism strategies in 1937, the festival has been held annually, incorporating diverse events such as concerts, sports competitions, theatre performances, and folk dances. Initially, the festival was designed to highlight local values, encompassing the rural landscape from the Çandarlı coastline to the Kozak Plateau and the Bakırçay Basin. However, subsequent policy developments aimed at enhancing accessibility led to the concentration of festival activities within the central public spaces. The event venues in the city center include not only modern everyday spaces but also protected historical sites. In 1993, Cumhuriyet Square was specifically designed by renowned architect Cengiz Bektaş to host festival events. Public spaces such as Atatürk Street and Çamlı Park are also temporarily adapted to accommodate these events. Furthermore, the festival redefined the use of the city's cultural heritage sites, including the Asklepeion, Acropolis, Ancient Theatre, and the Red Courtyard, by altering their accessibility and public engagement during festival periods. Driven by neoliberal trends, the festival program has shifted toward popular culture to enhance visibility and attract a broader audience. While this strategy expands its appeal, it also strains urban spaces and sidelines local cultural characteristics. Prioritizing visitor-driven consumption risks marginalizing residents, undermining their right to the city, eroding their sense of belonging, and reducing their support for the event. Methodologically, the research employs a mixed methods approach to capture the complexity of this phenomenon. The study first analyses archival and secondary sources, transforming this data into a comprehensive timeline of event policies and spatial story maps that trace the evolution of the form of festival venues. Second, semi-structured interviews are conducted with municipal representatives, non-governmental organizations, and residents, to uncover the changing function and meaning of event spaces. The content analysis of interviews reveals a conceptual framework of the socio-spatial challenges and potentials. The findings highlight the dual role of public space in the context of planned events. On one hand, festivals activate and revitalize urban spaces, expanding the cultural and social significance of heritage sites and fostering collective use. On the other hand, the commodification of historical and natural elements and the overcapacity of urban spaces during events temporarily restrict public access, raising questions about inclusivity and equity. This study critically evaluates these dynamics, contributing to ongoing debates about the contested nature of public space and the tensions between the rights of residents and visitors. This study contributes to debates on cultural event policies and urban space by critically examining the spatial challenges of the Bergama Festival and its role in shaping public space. By providing insights into how festivals transform both the form, function and meaning of urban spaces, it offers implications for urban planners and policymakers seeking to create more inclusive and sustainable public spaces in the face of global challenges.

Keywords:

cultural event; festival; cultural heritage; public space; sense of place

T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 727

A Retrospective of the Destruction of Ankara İller Bank in Ulus as a Paradigm Shift in Turkish Urban Renewal Politics

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State policies and planning decisions fuel the dynamic nature of urban space. The spatial implementations of authorities not only depict the socio-cultural position of the community but also lead a process of reconstructing power symbols in the city. In the radical shift of policies or movements, this spatial transformation tends to occur abruptly and

apparently. With this perspective, Ulus, Ankara, becomes a unique urban space that reveals the policy transition from modernism to neo-Islamist policies in Turkey. This paper reveals the differences between previous city plans and urban renewal projects after the 1980s with a particular focus on Ulus İller Bank, which was registered as a cultural asset. Changing demands from authorities resulted in this building's demolition and the construction of the Melike Hatun Mosque between 2013 and 2017. While the İller Bank building represents the modern identity of the Republican period, the mosque symbolizes neo-Islamist power relations. This study reveals this phenomenon with the comparative analysis of plans, earth images, expert and static reports of the administrative case, and discourse in magazines. Investigating the court reports of İller Bank and discourse in magazines becomes an original contribution to understand the dynamics of the transformation process. This retrospective effort examines the key relationships between urban identity and policy and their differences in modernism and neo-Islamism. The main contribution is the embodiment of the paradigm shift in urban conservation and renewal projects.

Keywords:

cultural heritage; paradigm shift; urban renewal; modernism; neo-Islamism

T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 1813

Defining typologies in the Bosphorus: Alternative Approaches for Future Proof Urban Coasts

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Coasts have always been preferred living spaces with the wide range of opportunities they offer. In addition to benefiting from natural resources, coastal cities are also preferred settlements with their advantages in terms of trade. In addition to the daily life shaped by the coast, large-scale functions such as ports, warehouses and shipyards play a major role in the formation of the economies and lifestyles of cities and in defining the common life established with the sea.

In the 21st century, the conditions of globalization have transformed coastal areas from a place where the daily lives of city dwellers become spectacular investment areas. Investments in coastal areas have come to be seen as flashy spaces that will bring cities to the global stage. Thus, coasts have become commodified, consumed spaces and the balance between publicness and use has changed according to market conditions (Shaw, 2026). While the global climate crisis discussions that have started to occupy the agenda in the last 10 years have defined important problem areas in all cities, the water crisis and rising sea level projections due to warming have brought the relationship with water resources and coastal areas to the agenda (Van Veelen et al. 2018, Demiroğlu et al., 2016). Water-sensitive urban design approaches have brought water-sensitive spatial practices to the forefront in cities and brought solutions to ensure the water cycle to the agenda. However, these approaches have often been limited to engineering solutions. However, in an era of unpredictable crises, it is important to create resilient societies, by remembering the place of water and the coast in the culture of urban life and the symbiotic bond between nature and man. Throughout history, natural disasters (earthquakes, floods, landslides...) have not resulted in the abandonment of coastal cities. A similar situation can be foreseen for the future crises. Identifying typologies of urban living and coastal use in harmony with nature, specific to cities, can be a tool for adaptation to new conditions and adaptation to the future.

The aim of this study is to recall the culture of living in coastal cities with the sea by analyzing the behavioral settings in the coastal sections. Defining typologies based on these settings and coastal culture can enhance cities to be resilient and develop adaptation scenarios against climate change or rising seas levels with the perspective of adaptive daily life and future proof coastal culture.

In the coastal city of Istanbul, the natural structures and lifestyles offered by the Black Sea and Marmara coasts and the Bosphorus coasts are different from each other. The Bosphorus culture, has created a life intertwined with the sea and unique coastal uses. The coastal fillings that began in the 1980s physically changed the coastal areas and transformed daily life practices. By providing a continuous connection through the coast, these fillings have defined a new interface of use. On the other hand, they have created areas at risk of earthquakes.

This study examines the physical transformations of the coastal lines and sections since the 1980s, and analyzes the changes in functional distribution and uses through physical space determinations. The topographical structure, the coastal edge line and the physical combination of the sea and the coast constitute the natural environmental data. Archive researches (postcards, photos) will determine the daily life dimension of the behavioral settings. Study area focuses on the Emirgan-Sarıyer coast and the Beykoz coast of the Bosphorus, which have been relatively less degraded in terms of zoning practices and profit-oriented constructions; and the Beşiktaş and Üsküdar squares and piers, which have changed drastically.

Keywords:

waterfronts, climate change, resilient urban waterfronts, sea level rise

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 299

ECONOMY OF CULTURE: RE-CONSIDER URBAN CULTURE OF DIYARBAKIR

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With the effects of the globalising world and rapidly changing dynamics, the place of culture in urban development policies and its share in local development is becoming increasingly important (Kagan et al., 2018). It is essential to understand the cultural economy, one of the areas where urban development is reconceptualised in the new economic geography (Gibson & Kong, 2005), to produce added value from culture and to integrate culture into the economic development of the city at the same time. Culture can turn into a production input that enables urban economic development at urban, regional and national levels (KEA, 2006). Tangible and intangible heritage assets included in urban development policies move away from the perception of mere protection and emerge as potentials that generate economic added value (Perry et al., 2018). Turkey's

cities, which differ at urban and regional levels with their cultural assets and related economic structures, can use these dynamics as a means of competition in urban development. This study evaluates the urban cultures of Diyarbakır, which has been an important city in terms of ethnic, social, political, administrative and economic aspects due to its strategic location throughout history, from the perspective of cultural economy. The city is culturally rich with its tangible heritage assets that are important for urban identity, as well as intangible heritage elements such as cinema, literature, traditional crafts, festivals, music and gastronomy. The main objective is to create a road map and raise awareness for public institutions, non-governmental organisations, academia, the private sector, professional chambers, investors and local communities with culture-based urban development scenarios for culture to provide an economic contribution to the city and for the city to benefit directly from its heritage potential. The cultural assets of the city have been evaluated through intangible heritage. The impact of culture on urban development has been analysed in detail through plans, policy, action and strategy documents prepared at regional and urban levels, the contribution of culture to the city, its relationship with other sectors as an economic input, the approaches of the institutions producing urban development policies, the implementation process of the decisions taken and strategies developed, and existing collaborations. In addition, Turkey's data on the cultural economy, policy documents, allocated budget, and funding sources were analysed to understand the country's overall approach. Subsequently, group interviews were conducted with culture-related public institutions, local administrations, development agencies, universities, civil society organisations, professional chambers, chambers of commerce and industry in Diyarbakır, and awareness of the economic impact of heritage was investigated. Among the identified groups, 23 actor interviews were conducted. The main problems are the lack of culture-oriented economic strategies and lack of awareness on the subject, the lack of a culture of cooperation and the inability to provide collaboration, the lack of qualified labour force and efficient solutions, the failure to create financing mechanisms and related economic and legal obstacles, and the fact that the city vision is far from up to date. The main opportunities are the existence of a unique city with a cultural ecosystem, the attempt to maintain traditional practices and the planning of current local cultural projects.

Studies, projects, and activities on the cultural economy in Turkey are quite few. Today in Diyarbakır, the production of crafts and related activities, festivals, culture and arts activities organised by local administrations, NGOs, foundations, and private enterprises, the efforts to continue these activities, and the series of activities planned by various institutions are concrete reflections of the existence of the city's strong cultural ecosystem. However, culture is not yet seen as a sector in urban economic development.

Keywords:

Urban cultures; culture economy; urban development; Diyarbakır

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 646

Reviving Cultural Heritage Under Pressure: Geopolitical Constraints and Rapid Urbanization in Ramallah's Historic Center.

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As cities worldwide grapple with the pressures of rapid urbanization and cultural heritage preservation, Ramallah's case study offers a compelling case to understand these challenges within the context of geopolitically constrained urban landscapes. While cities like Jerusalem, Nablus, Bethlehem, and Hebron hold rich cultural heritage and thus significance in the Palestinian context, Ramallah's historic center is less renowned. However, it encapsulates transformative impacts compounded by demographic changes, geopolitical pressures, and growth pressures, making it a unique lens through which to examine the tensions between urban development and heritage preservation.

Once a small village, Ramallah underwent significant transformation following the 1948 Nakba, which displaced waves of refugees from coastal Palestinian towns like Lod, Ramla, and Jaffa. This influx spurred rapid urban growth and renewal to accommodate refugees which did changes in the city's historic fabric, including the loss of numerous historic buildings. Another pivotal moment was the establishment of the Palestinian Authority in 1994, positioning Ramallah as the administrative hub and de facto capital of Palestine. The resulting population growth and economic expansion placed unprecedented pressures on the city's historic center, leading to its neglect and, in some cases, its demolition to accommodate new development and capital.

In addition to these internal pressures, Ramallah's geographic location is quite sensitive as its growth has been restricted by surrounding Israeli settlements, which limit access to land for urban expansion as well as the fact that 21% of its area is Area C which represents areas that are restricted for Palestinians to build at because they are fully Israeli-controlled. These geopolitical constraints have exacerbated the risks to the city's cultural heritage –both tangible and intangible –threatening its erosion and loss.

This article explores how such transformative changes have shaped Ramallah's historic center, emphasizing the risks posed by rapid urbanization and occupation. Using a mixed-methods approach, including observations, document analysis, and in-depth interviews with stakeholders and community members, it highlights the role of authorities and community-driven initiatives in safeguarding cultural heritage and reviving it. It emphasizes the role of grassroots efforts, such as festivals and cultural activities in re-connecting intangible cultural heritage with the city's tangible landscape and landmarks successfully, fostering social cohesion and resilience despite external pressures.

The study underscores how contested social relations, local resilience, and public awareness have shaped efforts to revitalize the historic center, even in the absence of formal regeneration and revitalization plans. Ramallah now stands as a powerful example of how cities in constrained environments can balance urban growth with heritage preservation and revitalization through innovative, community-driven approaches. The findings offer practical insights for urban planners, policymakers, and cultural heritage advocates working in similarly pressured contexts, demonstrating how heritage can serve as both a tool for resilience and a foundation for sustainable urban development. However, the study also identifies potential risks, such as gentrification due to uncontrolled and unmitigated urban development, which might displace long-standing communities and alter the area's cultural identity in the future.

Keywords:

Historic Centers; Cultural Heritage Preservation; Rapid Urbanization; Geopolitical constraints; Revitalization

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 413

Heritage Perception and Identity Construction Among Residents in Industrial Community Transformation: A Case Study of National Creative Park, Nanjing, China

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In recent years, China's deindustrialisation and reliance on land-based fiscal policies have posed significant challenges to the industrial transformation and urban regeneration of traditional industrial zones. Redeveloping abandoned industrial sites, such as through industrial tourism and creative office spaces, has become a priority for many renewal projects. To achieve both economic and cultural goals, industrial heritage sites often rely on constructing and reconstructing master narratives to create branding strategies that attract external visitors and investment. However, this process frequently marginalises the community residents who once lived and worked in these industrial zones. These residents, who lost institutional support following the closure of state-owned enterprises, face dual unemployment challenges and identity loss in deindustrialisation.

This study examines the redevelopment of the National Creative Park (NCP) Industrial Heritage Site in Nanjing, tracing its evolution from an essential factory in the Jiangnan region during the Qing Dynasty to its closure in 2011 and subsequent transformation into a significant creative office hub. Using qualitative methods, the research analyses master narratives across different historical stages to identify the dominant discourse shaping the site's branding as a development project. Additionally, in-depth interviews with various types of community residents—including retired workers, laid-off workers, displaced households, and new users—were conducted to evaluate their sense of place attachment and perceptions of industrial heritage. The findings construct a "community narrative" that contrasts with the official discourse.

The study reveals the dynamic interactions and differences between master and community narratives during the redevelopment of industrial heritage sites within the broader context of industrial restructuring and urban renewal. It highlights the complexity of community residents' perceptions and argues that these perspectives should be incorporated into the framework of industrial heritage conservation. Moreover, the study em-

phasises the importance of considering residents' views in ensuring the sustainable development and harmonious integration of industrial heritage sites with their surrounding environments.

Keywords:

Industrial heritage; Community narratives; Urban regeneration; Place identity

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 711

Mapping Changes in Public Perceptions of Chinese Historic Districts: An Integrated LDA-LLM Analysis of Social Media Commentary (2009-2023)

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Understanding public perceptions of historic districts demonstrates a pivotal role in both heritage conservation and sustainable urban development. While traditional surveys have long been the standard tool for gathering public opinion, social media commentary has emerged as an increasingly valuable data source, offering deeper insights across broader temporal spans and proven effective by many studies. However, current research faces several notable limitations: the tendency to focus on isolated aspects such as visitor experiences or aesthetic preferences rather than holistic public concerns; the prevalence of single-site, snapshot studies that fail to capture evolutionary patterns across different historic districts; and analytical methods that often decompose social media narratives into discrete units, losing the rich contextual meaning embedded in complete discussions. The recent emergence of large language models (LLMs) presents a promising methodological breakthrough through their capacity for sophisticated natural language understanding and contextual analysis.

To address these challenges, this study introduces an analytical framework that combines Latent Dirichlet Allocation (LDA) and LLM to systematically analyze public perspec-

tives on the historic districts. The framework demonstrates robust performance, achieving over 75% accuracy in viewpoint classification. Applying this methodology, we analyzed an extensive dataset of over 190,000 social media comments spanning 46 Chinese historic and cultural districts from 2009 to 2023. Through LDA, we identified eight primary thematic categories in public discourse: built environment, management and services, human behaviors, environmental atmosphere, commercial experience, heritage information, tour information, and district identity. These primary categories were further refined into 16 distinct subcategories to enable more granular analysis.

The thematic distribution derived from the summarization of LLMs and statistical analysis across districts reflects their distinctive characteristics. Noteworthy examples include districts where commercial themes are frequently mentioned in public commentary, such as Furong Street in Jinan, Nanluoguxiang in Beijing, and Ciqikou Ancient Town in Chongqing—all widely documented in literature as archetypal cases of commercialization in historic areas. Additionally, the thematic analysis illuminates public preferences regarding specific district features. Particularly striking is the heightened focus on historic architecture in districts built during the Late Qing to Republican period, especially those featuring well-preserved European-style districts, such as Beijing's Dongjiaominxiang and Tianjin's Wudadao. These districts stand out for their distinct architectural styles compared to the surrounding urban fabric, making them more likely to attract attention and discussion.

Analysis of topic evolution over the study period reveals three significant trends in public perception. Firstly, topics concerning historic buildings, heritage information, and cultural atmosphere have garnered increasing attention. This shift suggests that, following years of preservation efforts and educational initiatives, the public has developed a deeper interest in the cultural significance of these districts. This interest now extends beyond the tangible architectural elements to embrace the intangible cultural heritage, including local narratives, traditions, and historical significance.

Secondly, a particularly striking trend is the dramatic surge in location-based social sharing since 2017, with only a modest decline through the pandemic period. This phenomenon aligns with the rise of image-sharing platforms, where the desire to capture and share visually compelling images of historic districts has become a primary visitor motivation. extending even to less touristic areas.

Thirdly, the analysis also points to a noticeable decline in public discussions surrounding the living atmosphere and local memory. This shift can be attributed to the commercialization of historic districts, where urban renewal and architectural modifications have often overshadowed the preservation of authentic residential character. While these transformations have generally yielded positive economic outcomes, it has also diminished the traditional living environment that once defined these neighborhoods. This trend highlights the challenge of balancing the commercial development with the protection of the area's authentic character.

Keywords:

public perceptions; historic districts; large language model; social media

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 778

Integrating Historic Urban Landscapes into Urban Regulations:

Evaluating the contribution of Switzerland's Federal Inventory of Heritage Sites (ISOS)

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The paradigms of built cultural heritage have undergone significant transformations over the past two decades. A critical element of this shift is the valorisation of urban landscapes as bearers of unique cultural value rather than mere collections of individual assets. This perspective inspired the development of the Historic Urban Landscape (HUL) approach. Formulated by UNESCO in 2011, the HUL approach advocates leveraging the cultural values of urban landscapes as contributors to high-quality urban development. Although the HUL approach encompasses considerations beyond urban morphology, it warns that uncontrolled development (e.g., excessive urban densification) may erode the sense of place and undermine the identity of communities.

Balancing development and preservation in HULs often creates tensions among divergent economic, political, and social interests. These conflicts are frequently mentioned in specialised academic literature, particularly within cultural heritage. However, the interplay between HUL values and urban regulations governing changes in urban morphology remains underexplored in research. A significant knowledge gap persists regarding what characteristics of the HUL challenge their incorporation into urban regulations.

This study narrows the broad development-versus-preservation conflict, focusing on a specific aspect of urban form—density—to analyse the contribution of HULs to planned urban development. It examines Switzerland's Federal Inventory of Heritage Sites (ISOS), a nationwide inventory of culturally significant landscapes. ISOS aims to support high-quality and sustainable urban densification by identifying unique local landscape characteristics of cultural value and providing recommendations towards their preservation and perpetuation. Cantons and municipalities are legally required to consider ISOS when formulating their urban plans, thus promoting incorporating HUL values into the form and function regulations. The scope of ISOS and its role in planning make it an adequate case study for better understanding the connections between HULs values and urban regulations.

While the ISOS must, by law, inform binding regulations, its effectiveness can be compromised by conflicts and negotiations among stakeholders—such as governments, property owners, and communities—arising from competing interests. As a result, the extent to which ISOS recommendations are reflected in binding regulations remains uncertain. This study seeks to identify the most frequent recommendations issued by ISOS and assess the extent to which binding regulations align with them, namely on density-related aspects such as building volume and height.

Selected settlements were analysed to extract explicit recommendations from their ISOS dossiers, which were then compared with corresponding regulations outlined in urban planning documents. This comparison facilitated categorising regulations as either enablers or barriers to the transference of ISOS recommendations as binding rules. For instance, if ISOS recommends maintaining the existing built volume while regulations allow for its increase, this would represent a barrier to the ISOS recommendation. These evaluations were synthesized into a compliance indicator, offering a measurable framework to assess how effectively ISOS values are translated into enforceable rules.

The analysis highlights which cultural heritage considerations are more effectively integrated into urban planning regulations. Identifying the preservation measures that stakeholders are more reluctant to adopt also sheds light on the challenges of integrating the HUL approach into binding urban planning regulations. Although this study focuses on the Swiss inventory and planning system, its findings have broader relevance, as the HUL approach advocates the creation of similar inventories worldwide. This methodology has proven effective for evaluating the contribution of HULs to urban development and opens avenues for studying other aspects of urban form and function.

Keywords:

Historic Urban Landscape; Urban Densification; Planning Regulations; ISOS

T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 829**Silent evidence. On nuclear mounds, craters and caves****Author:** Ludovico Centis¹¹ *Università degli Studi di Trieste***Corresponding Author:** ludovico.centis@dia.units.it

Dealing with the heritage of the Manhattan Project does not simply mean expressing one's position as being against or in favor of nuclear weapons or nuclear energy for civil use. Either we like it or not, and whether we accept it or not, the Trinity test held on July 16, 1945, ushered humankind into a new era.

This proposal focuses on three sites –the Niagara Falls Storage Site, NY, the Nevada Test Site north of Las Vegas, NV, and the Waste Isolation Pilot Plant, near Carlsbad, NM – where the ground still shows the scars of atomic testing and where nuclear waste is stored, shielded by artificial mounds or in deep underground caves. Sites that following the categorization proposed by Alois Riegl in his fundamental text on the cult of monuments would be defined as unintentional monuments. Following the fact that the nuclear waste will remain active for thousands of years, Riegl's notion of age-value is pushed to its limit, evoking a future so distant that our limited sense of time as human beings can barely grasp it.

The mounds, craters and caves that punctuate these sites, along with others dispersed both through the US and other countries that experienced nuclear testing and activity, testify of the great sacrifices that were inflicted upon territories that, realistically, will never return to their original condition. In the case of sites associated with the Manhattan Project and its legacy, aesthetic considerations remain in the background, considering that many of these landscapes are hostile or deadly to forms of life, and will continue to be for millennia to come.

Considering the kind of impasse we are at today when it comes to dealing with atomic energy's byproducts, we might agree with Jacques Derrida's identification of nuclear energy as the most extreme *pharmakon*, a type of substance that can both injure and be a remedy; we must not forget the contributions of nuclear medicine and the diagnostic abilities it affords. At the same time, as philosopher Guenther Anders pointed out in his groundbreaking works, we must recognize that we live in a society in which the threats generated by scientific development and technological innovation cannot be managed confidently, for it is now capable of exposing us to unprecedentedly large-scale and enduring environmental-pollution phenomena. In this respect, one need only call to mind the Three Miles Island, Chernobyl and Fukushima accidents, as well as the Manhattan Project's own dangerous legacy at sites such as Hanford, WA.

In the meantime, mounds, craters and caves that punctuate the US landscape in sites as the Lake Ontario Ordnance Works, the Nevada Test Site and the Waste Isolation Pilot Plant stand as silent evidence of the new era opened by the discovery of atomic power.

Keywords:

atomic energy; landscape; monument; heritage

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 661

The heritage-climate change nexus: towards a values-based adaptive planning response

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Climate disruption is already affecting cultural heritage sites and anticipated climate change stressors will increasingly intensify the vulnerability of cultural landscapes (Sesana et al., 2021). This includes the impact of extreme weather events, including flooding, landslides, wildfire risks and drought, alongside longer term impacts relating to loss of landscape character due to shifting climatic conditions (e.g. loss of indigenous vegetation, new invasive species).

The relationship between climate change and heritage conservation is often discussed in terms of its physical impacts. However, the vulnerability and adaptation of intangible heritage, such as cultural practices, traditions, place attachment and community knowledge, remain largely overlooked, creating a significant research gap. In this paper, we explore the heritage-climate change nexus in relation to social values and cultural practices in the context of heritage-rich landscapes. Drawing on Harvey and Perry (2015), we contend that while heritage management is present-centred, it also involves a future-orientated processing of tangible and intangible sense of the past i.e. judgments concerning what is to be protected for future generations. This approach rejects the traditional view that heritage conservation carries a treasured past into a well-understood future. Instead, due to the climate emergency, heritage management should embrace loss, alternative forms of knowledge and uncertain futures.

Drawing on preliminary fieldwork in the Wicklow Mountains National Park (Ireland), we explore this relationship between tangible and intangible heritage within the context of climate change, arguing for a shift towards adaptive conservation and responsible heritage loss management through a values-based framework, which in turn requires alternative planning approaches to cultural heritage management. This includes greater use of participatory planning and stakeholder engagement as a means of understanding multiple socio-cultural values relating to heritage landscapes, capturing the interconnection between cultural practices and landscape management, and exploring heritage value through people's experiences and not simply professional (and technical) measurement. Moreover, a heritage lens provides a critical framing device to shift landscape management from a 'preserve and protect' approach towards a more dynamic exploration of loss and change, fostering adaptive conservation within a climate emergency.

Keywords:

Climate change; Cultural heritage; Vulnerability; Adaptive conservation; Values-based framework

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 805

Evaluation of the Contemporary Cultural Landscapes in Grand Canal (Hangzhou Section) based on Multi-Dimensional Value Coupling

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In the context of building Grand Canal National Cultural Park, the heritage conservation of the Grand Canal has entered a new stage since its inscription as a World Heritage site. In response to contemporary development needs, The urbanization process of Hangzhou City necessitate further urban renewal and cultural landscape enhancements along the Canal. With the successive promulgation of documents such as the General Rules for Land Space Control in the Core Monitoring Zone of the Grand Canal in Zhejiang Province and the Rules for Land Space Control in the Core Monitoring Zone of the Hangzhou Section of the Grand Canal, the issue of value conflicts between heritage preservation of the Grand Canal and local regional development has increasingly drawn attention. In this background, the challenge lies in making informed judgments on various landscape projects along the canal and leveraging cultural landscape initiatives to foster canal-side development while safeguarding canal-related cultural resources and nostalgic canal memories. This issue stands as a pivotal concern in the planning and development of the Hangzhou section of the Grand Canal today. Scientifically evaluating the value of various cultural landscape projects along the Grand Canal is the fundamental basis for coordinating the conservation of World Heritage sites, land use control, and urban development construction of the Grand Canal.

This study has explored the value evaluation framework for the conservation and development of cultural landscapes, focusing on the Hangzhou section of the Grand Canal. Based on the evolution of cultural landscape value paradigm, the multi-dimensional value evaluation system of the Grand Canal cultural landscape is constructed. Based on the coupling coordination degree theory, the synergistic adjustment mechanism of the conservative value and developmental value system of the canal cultural landscape is explored. The value evaluation of the 10 contemporary cultural landscape projects implemented since the application of the Grand Canal in Hangzhou is carried out, and the coupling coordination of their conservation and utilization is analyzed.

Through an analysis of 10 cultural landscape projects, it has investigated strategies for enhancing these landscapes, emphasizing integration of preservation and use, development orientation and comprehensive optimization, and remedying shortcomings to improve quality. Hangzhou section, characterized by its interdependence of city and river, is entering a new phase of establishing a national cultural park. Cultural landscape construction and regeneration projects along the canal is suggested to prioritize value coordination, further enhancing development while maintaining control. This approach seeks to explore pathways for constructing and developing new functional zones

within controlled conditions, aiming to create a canal landscape system that integrates seamlessly with urban life and is accessible to citizens.

In conclusion, this research underscores the importance of harmonizing conservation and development efforts in cultural landscapes and provides a reference for the cultural landscape construction along the “city-river interdependence” Grand Canal. By implementing the strategies identified, stakeholders can effectively navigate the complexities of enhancing cultural heritage while promoting sustainable urban integration along the Grand Canal.

Keywords:

Cultural landscape; The Grand Canal; Multi-dimensional value; Value evaluation

T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 368

Exploring the heritage - transnational nexus: Disassembling the Ara Pacis Museum in Rome

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Heritage cities undergo continuous forms of transformation –resulting from urban growth, destruction, gentrification, mass tourism, etc. Over the last several decades, there has been an increasing insertion of star architecture designed projects within sensitive heritage contexts (Cominelli & Jacquot, 2020). These transnational projects both benefit from the correlation with heritage sites while simultaneously transforming the imaginaries, experiences, and authenticity of these contexts (Van Oers, 2006). International conservation doctrines by no means forbid such projects, but rather emphasize the need for continued growth and evolution of historic cities through projects which respond to the contemporary values of their time (Lardinois, Arato Gonçalves, Matarese, & Macdonald, 2015). While initial research has been conducted on some of these projects, such as the Kunsthaus Graz (Dreher, Alaily-Mattar, & Thierstein, 2020) or the Acropolis Museum (Gravari-Barbas, 2020), there has overall been limited reflection on the heritage –transnational nexus which emerge within these scenarios.

This paper responds to this research gap by exploring the case of the Ara Pacis Museum in Rome. The Ara Pacis Museum represents the first new building in the historic city centre of Rome since WW2. Designed by Richard Meier from 1995 to 2006, the project's development has been highly contentious, due in large part to the role of the transnational star architect. Part of an ongoing research project, this paper unpacks the complex layers of the project's design and development within an incredibly sensitive heritage context. Assemblage theory is used to decipher the role of various human and non-human actors in generating a new socio-material assemblage within the centre of Rome. While Edensor (2011) has implemented this methodology to highlight the agency of material elements within historic structures, it has not been used to decipher the overlapping heritage layers generated within a transnational project located in a heritage site. The research reveals the multiple tangible and intangible heritage understandings and interpretations connected to the site to identify those which informed the museum's development and those which were overlooked. It also reframes the position of the star architect in relation to the other human and non-human actors as part of the wider socio-material assemblage to provide new understandings of the project and its long-term urban effects.

Keywords:

Urban heritage, transnational projects, star architects, Rome, assemblage theory

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 1346

From Market to Mall: The Evolution of Modiano Food Arcade in Thessaloniki

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This paper examines the transformation of the Modiano Food Arcade in Thessaloniki, Greece, from a historic central food market into a contemporary food mall and exhibitions' space, focusing on the intersecting themes of cultural commodification, urban regeneration, and touristification. Built in the early 20th century, Modiano Market has long been a vital symbol of Thessaloniki's market culture, local economy and innovative architecture while also serving as a vibrant space of recreation. After years of underfunding and lack of maintenance, the market was permanently closed in 2016, with a large percentage of its shares being sold to a private development company. Its redevelopment culminated in its re-opening in 2022 as a curated gastronomic destination, reflecting broader global trends where traditional spaces are redeveloped into "landscapes of consumption" (Zukin, 1991) that fail to preserve - or at least reintroduce - the original character of the site.

The study investigates how this transition reflects broader global trends in urban redevelopment, where traditional markets are reintroduced as spaces where authenticity blends with modern consumer culture. It critically examines the commodification of cultural heritage, the dynamics of urban regeneration initiatives, and the social impacts of tourism-driven urban planning. Drawing comparisons with other redeveloped markets, such as Barcelona's La Boqueria and Lisbon's Time Out Market, the paper contextualizes Modiano's transformation within a global framework.

By integrating primary (personal experiences, memories of the place) and secondary (press releases, polls) data, alongside a critical examination of urban renewal initiatives and heritage branding, the paper intends to raise important questions about the sustainability of such projects in preserving cultural authenticity while fostering economic growth. The case of Modiano Food Arcade highlights the challenges and opportunities in balancing local traditions with the demands of a globalized consumer landscape, offering insights into the complex interplay between heritage, commerce, and urban identity.

Keywords:

redevelopment; food market; heritage; commercialization; Thessaloniki

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 995

Balancing Tourism-Driven Dynamics and Everyday Life in Heritage Space. The case of Tallinn Old Town

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The competing interests of various actors around attractive urban heritage sites present ongoing and complex challenges, particularly in the context of increasingly intensifying tourism flows. These issues become even more relevant when viewed from the perspective of residents who are the most immediate preservers of local urban culture. While historic heritage areas of high symbolic value are often prioritized by competitiveness-oriented urban policies, the continuity of local urban cultures in these areas depends primarily on the daily rhythms of residents' lives. The presentation aims to offer a nuanced approach to understand the significance of local time-space specificities to be considered in building an understanding of contemporary touristification and its impact on local communities and urban cultures in gentrified heritage areas.

Drawing on findings from a mixed method study of Tallinn Old Town (UNESCO listed since 1997) residents in 2021, the presentation discusses residents'—the owners of heritage property—economic and socio-spatial practices to maintain and advance the liveability of the Old Town in the post-gentrification area. Quite contrary to the UNESCO claims to preserve the human environment and its social and functional diversity, the neoliberal laissez-faire attitude towards tourism management paves way towards mono-functionality of historical sites which tend to be consumed rather than inhabited (Minguez et al., 2019; also Tena et al., 2025). These developments might reduce the attractiveness of a destination as it loses its authentic character where history meets the modern everydayness. Our research indicates that residents' "small-scale acts of resistance" (cf. Rozena & Lees, 2021) to daily nuisances caused by excessive tourism may be insufficient to counteract place-based negative dynamics (cf. Cocola-Gant, 2018) as touristification becomes disruptive even for those residents who appreciate the vibrancy of a lively Old Town. This highlights the necessity for institutionalized measures and a public strategy that explicitly recognizes local residents (cf. Ferro et al., 2024; Ruis-Ulldemolins & Klein, 2022; Sgambati, 2024) as central actors in sustaining the heritage areas.

Keywords:

heritage; urban cultures; gentrification; touristification

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T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 1522

Digital platforms, regulatory planning and heritisation: Airbnb and new practices of heritage in the medina of Tunis (2011 to 2024)

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The present intervention explores the different ways in which the heritisation of the old city of Tunis has continued since the Tunisian revolution of 2011. It focuses on the ways in which the historic urban fabric has been the object of discourse and practice by urban planners, architects and tourism entrepreneurs, the latter category comprising individuals and businesses ranging from the highly professional to the amateur. We believe that this last category plays an increasingly important role in heritage development. Since the 1980s, the medina has been subject to a specific town planning code that the municipality was able to enforce fairly effectively until 2011. A major programme of works carried out before that year enhanced the historic aesthetics of an entire sector of the central medina; similar operations continued in the early 2010s. A municipal programme to improve private housing continued over the same period.

A new tool entered the houses of the medina in 2013: Airbnb. Until the arrival of this platform - and the authorities' new tolerant attitude towards seasonal rentals, severely restricted until the 2011 revolution - new players were able to enter the tourist accommodation market. Today, Airbnb-related activity might be considered the main force in

heritage-related development in a context where the state is unable to fund the restoration of the main monuments or fully apply the provisos of the planning code. Certain private actors, closely involved in holiday rentals and particularly adept at communication via digital platforms, are positioning themselves as key players in heritage conservation. In this context of weakened official urban planning, this paper explores how the digital accommodation platform is used by various groups partaking of heritage discourse in the old town of Tunis. What does Airbnb tell us about these actors and their vision of heritage, how does the platform effect power dynamics within the Medina? Is it possible to think of Airbnb as a tool foregrounding multiple visions of heritage? Leaving aside the repercussions of the platform on the urban property market, can it be seen to have an emancipatory dimension in the context of the Medina of Tunis?

To answer these various questions, our paper proposes an analysis of the interplay of the actors operating within the discourses of heritisation of the historic centre of Tunis. This analysis is underpinned by a key socio-political and cultural event: the 2011 revolution and its many repercussions.

Keywords:

Médina of Tunis, heritisation, urban conservation, Airbnb -digital platforms

T_06 URBAN CULTURES AND LIVED HERITAGE (A) / 1068

Co-designing Net Zero Strategy in historic settings: Bristol's case study

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Despite the widespread acknowledgement of the role of local communities in net zero transition, the approach in areas designated as conservation areas is predominantly expert driven with limited involvement from local communities. Conservation areas in England are areas of special architectural or historic interest, the character or appearance of which it is desirable to preserve or enhance. To protect the special character, there are stricter planning control in place in conservation areas which is perceived to have a negative impact on the uptake of energy efficiency and low carbon heating improvements for houses located in conservation areas (Fetzer, 2023) which are around 2.8 million houses (Historic England, 2021) with potential CO2 emissions of up to 3.2 million tons of annually (Fetzer, 2023).

This presentation interrogates the challenges and aspirations of local communities to protect the character of conservation areas while progressing with net zero transition by reflecting on the findings from engagement workshops with a selected conservation areas in Bristol, Sea Mills. Sea Mills neighbourhood is an intact example of a Garden Suburb in England and Bristol's finest example of planned post-WWI municipal housing (BCC, 2011). It is widely acknowledged that 20th-century heritage forms a significant layer of history displaying transformation of England's planning philosophy and culture, accompanied by the emergence of new building types, construction techniques and materials (Twentieth Century Society, 2017).

The intention of the workshops with Sea Mills' local community were to better understand the challenges that the local community is facing in adapting their homes and to co-design solutions with the local community. This presentation will share learnings from this project by concluding that it is through collaboration with local communities

and adopting grassroots approaches that the challenges of net zero transition in designated heritage areas can be addressed.

Keywords:

Net Zero; Conservation Areas; Bristol; Twentieth Century heritage; Local communities

T_06 URBAN CULTURES AND LIVED HERITAGE (B) / 1819

Rethinking Creative Cities: Towards Inclusive and Equitable Urban Transformations in India

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As societies deal with increasingly turbulent urban conditions, the role of creative city policies as potential catalysts for change becomes more urgent than ever. The concept of the Creative City has become a central framework in the urban policy of developed countries (Cooper and Florida, 2005; Pratt, 2011; Landry, 2012), often positioned as a driver of economic growth, cultural vibrancy, and urban regeneration. However, the policies and their implementation frequently overlook the socio-spatial inequalities they can generate as well as the shifting focus on design quality, small-scale public art projects and long-term impacts (Boddy and Parkinson, 2004; Evans, 2005), particularly in the Global South, where urban cultures and heritage become contested arenas for transformation (Molho et al., 2020). This research critically examines creative city policies and projects in Indian urban centres, focusing on their inclusivity, sustainability, and transformative potential for marginalised communities.

India's urban landscape presents a compelling case for exploring the creative city discourse. With rapid urbanisation and increasing socio-economic disparities, gentrification (Jaglan and Rajeshwari, 2021), cultural and creative projects have been integrated into planning strategies to foster urban renewal and development, especially after India underwent liberalisation in the 1990s. While these initiatives often claim to promote inclusivity and community engagement, their real-world implications remain underexplored. This study addresses three key questions: (1) What is the content of Indian policies and strategies dealing with the principles of the creative city agenda since the 1990s? (2) What has been the typology of projects dealing with principles of the creative city agenda in India since the 1990s? (3) How do selected projects impact local communities, particularly vulnerable groups such as low-income populations, informal workers, and historically disadvantaged communities?

This research employs a qualitative approach, including (a) a content analysis of central, state, and municipal policies, (b) a typological analysis of creative city projects, and (c) an in-depth case study of representative projects. The (a) content analysis explores policy narratives and their alignment with principles of access equity and sustainability. The (b) typological analysis categorises creative city projects based on their spatial characteristics, governance structures, and objectives, distinguishing between economic-driven creative industries and community-oriented cultural amenities. The (c) case study examines selected urban transformation initiatives, assessing their social and spatial outcomes through interviews, field observations, and photography.

Preliminary findings suggest that while creative policies in India aim to generate inclusive urban spaces, their implementation often accelerates the loss of lived heritage and intensifies socio-spatial disparities. Large-scale flagship developments, such as cultural

districts and creative hubs, contribute to gentrification, displacing existing communities and eroding cultural landscapes. Conversely, smaller-scale community-driven initiatives—such as public art projects and adaptive reuse of historic sites—demonstrate a stronger capacity for fostering inclusive urban transformations when adequately supported. These initiatives illustrate how urban cultures foster moments of engagement with the unknown and unpredictable, enhancing the capacity for creative action in shaping urban environments.

This study contributes to the discussion on planning for equitable and just futures on urban cultures and heritage as dynamic and contested processes by offering a critical perspective on the adaptation of the creative city model in the Global South. It calls for participatory urban strategies that prioritise social inclusion, accessibility, and sustainability. By situating India's creative city policies within broader global urban debates, this research highlights the need for context-specific, community-anchored planning approaches that genuinely address the aspirations and needs of diverse urban populations.

Keywords:

creative city; policy; Global South; India

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T_06 URBAN CULTURES AND LIVED HERITAGE (B) / 156

everyday heritage: an approach for value-driven transformation

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This paper provides a framework for value-driven transformation in residential neighbourhoods of the period 1965-1990 in the Netherlands. Many of these neighbourhoods are facing both massive restructuring programmes due to planned large-scale technical

upgrades as part of the regular maintenance cycle of buildings, infrastructure and public (green) spaces, and transformations as part of the policy of 'energy transition' and 'demographic transition'.

Although these neighbourhoods are not yet highly valued in public discourse, discussions are beginning within the heritage discourse about what should be considered 'valuable' about them. Is it the 'historic' architecture and landscape forms, or should the specific planning concept or the lifestyles and 'histories' of the inhabitants inform the transition policy? The generic and technological solutions recently projected by the government on these neighbourhoods do not take these questions into account, as they are - for the time being - just considered as 'run-down neighbourhoods'.

This paper aims to identify the different stakeholder values in order to arrive at a value-based transition policy. First, it analyses which attributes of these neighbourhoods are considered representative of this type of heritage from different stakeholder perspectives. Second, it constructs a conceptual framework to analyse what values are at stake when different conceptions of 'heritage' are pitted against each other. Third, the conceptual framework is 'tested' in different Dutch neighbourhoods through design research scenarios and stakeholder discussions. Finally, conclusions are drawn on how heritage elements could be reinterpreted and reworked in transition policies, taking into account different stakeholder inputs at different stages of the transformation process.

Keywords:

post-war heritage, the Netherlands, value-driven approach

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T_06 URBAN CULTURES AND LIVED HERITAGE (B) / 1457

Participatory heritage planning in practice: Lessons from Balıkcıköy, Istanbul

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Contemporary urban governance systems in heritage management face unprecedented complexity and challenges, particularly in reconciling participatory planning aspirations and realities with the need to balance the everyday life practices of local communities and formal planning processes. While UNESCO's 'living heritage' framework emphasizes the conservation of both tangible and intangible assets, translating the knowledge generated through communities' daily experiences and cultural practices into actionable planning decisions remains a significant challenge (Bandarin and van Oers, 2012). The gap between theoretical framework and practice has become increasingly evident as local communities, despite their vital role in cultural landscape conservation, encounter systemic barriers within formal planning processes. Thus, there is a clear need for more empirical studies to bridge the said gap.

The process of the Balıkcıköy Conservation Development Plan (CDP) in Maltepe, Istanbul,

presents a critical case study for examining these challenges. Known for its historical fishing identity which gives the neighborhood its name, Balıkçıköy Conservation Area is an area that has substantially retained its traditional physical and social fabric, harmoniously blending registered historical buildings with residential and commercial activities. The plan claims to have a people-centered participatory discourse with an emphasis on the sustainability of its unique qualities. Therefore, the primary motivation behind its preparation and implementation is to mitigate adverse transformations in Balıkçıköy resulting from global heritage site pressures, including tourism pressures, gentrification and spatial commodification, which are further deepened by conditions such as economic constraints on local stakeholders, infrastructure modernization demands, and deteriorating historic building stock. This complex interplay of challenges and objectives provides a unique context for examining how participatory planning approaches can be reconciled with social justice and inclusivity goals in heritage management.

This study investigates heritage-focused community participation over the case of Balıkçıköy through three interconnected dimensions: the mechanisms for translating community consultation findings into technical planning decisions; the methodological approaches for bridging community heritage values with formal planning frameworks; and the representational adequacy of documented consultation outcomes. Building upon Arnstein's (1969) seminal critique of tokenistic participation and incorporating recent theoretical advances in Healey's (2003) collaborative planning, the study develops a comprehensive framework for evaluating participatory effectiveness in heritage contexts.

The research methodology employs four stages. First, content analysis of participation reports and planning documents evaluates how community input is documented and framed. Second, semi-structured interviews with local community members examine their understanding of the site's value, daily interactions, and experiences with the engagement process of the Balıkçıköy CDP. Third, semi-structured interviews with planning professionals assess the challenges of integrating community feedback into formal planning decisions. Finally, findings are synthesized into an analytical framework, evaluating the effectiveness of participation in terms of representation, access, transparency, inclusiveness, and impact, while providing insights into both procedural and outcome-oriented aspects.

This study contributes to participatory heritage planning in several ways. It develops an adaptable framework for evaluating participatory effectiveness, informed by criteria such as inclusiveness and transparency, ensuring applicability across diverse contexts. It identifies mechanisms for translating community knowledge into actionable decisions, addressing challenges like misalignment between community values and technical planning frameworks. It also provides empirically grounded recommendations by comparing documented consultation outcomes with insights from community members and planning professionals. The study thus demonstrates that heritage is not a static condition but a dynamic process continuously redefined through communities' everyday life practices. The findings reveal discrepancies between participatory ideals and implementation, and the importance of adaptive governance models that align participatory goals with practical realities. By bridging these gaps, the study offers a comprehensive framework for improving participatory planning practices in heritage contexts, with actionable strategies for achieving equitable and sustainable planning, particularly in rapidly transforming urban environments.

Keywords:

Heritage planning; community participation; knowledge integration; urban conservation; urban governance

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T_06 URBAN CULTURES AND LIVED HERITAGE (B) / 483**Possible Uses of Urban Heritage for Social Cohesion****Author:** Rafael Maximiliano Flores de Leon¹¹ *Brandenburg University of Technology (BTU) Cottbus-Senftenberg***Corresponding Author:** floreraf@b-tu.de

The field of heritage faces growing pressures to demonstrate its benefits or contributions as funding declines and the sector is required to conform to results-oriented systems. In this context, arguments suggesting that urban heritage fosters social cohesion gain prominence. However, these arguments often do not specify how urban heritage can enhance social cohesion, which is further complicated by the fact that the concept of social cohesion is versatile and can encompass multiple notions. The Ph.D. project overarching this paper uses discursive institutionalism as a theoretical basis and combines policy analysis methods and interviews with experts to examine how ideas linked to social cohesion are (re)produced in and around key documents for the nomination and management of World Heritage (WH) cities. My paper for the AESOP conference focuses on the results of the interviews with experts to identify possible uses of urban WH to promote social cohesion. It discusses how expert advisors and authors of guidelines from the WH system largely focus on participation and promoting shared responsibility for the care of the heritage sites; meanwhile, managers working on the nomination and management of the sites emphasize the need and ongoing efforts to preserve traditional economic activities and spaces that enable and support the continuity of social structures. The paper also discusses how mobilisations of heritage under the banner of social cohesion may work towards contrasting objectives, ranging from reinforcing established power structures to promoting social justice. Finally, the paper reflects on the role of documents and actors in the process of identifying and constructing the narratives that justify the Outstanding Universal Value of WH Cities, pointing out the decision-making role of expert advisors from the WH System.

Keywords:

Social Cohesion; Urban Heritage; World Heritage, Heritage Management

T_06 URBAN CULTURES AND LIVED HERITAGE (B) / 1654**Integrating Heritage Planning into Urban Policy Frameworks: The Case of Istanbul Vision 2050****Authors:** Müge Yorgancı Ozar¹; Yiğit Ozar¹¹ *Istanbul Planning Agency***Corresponding Authors:** mugeyorganci@gmail.com, ozaryigit@gmail.com

Istanbul is a metropolis that both experiences the effects of multiple crises—sometimes even becoming part of the crisis dynamics—and has the potential to develop proactive solutions to them. Since 2019, the city has been actively working to address these challenges through innovative planning approaches.

The macro-scale planning outputs of these new approaches are the Istanbul Vision 2050 Strategy Document and the Istanbul Vision 2050 Action Plan (VEP). The Istanbul Vision 2050 Action Plan was developed with a perspective that considers the challenges posed by multiple crises and follows a multi-scale planning framework. These efforts

have evolved through a comprehensive participatory process, synthesizing contemporary academic research, the demands of civil society, and the conditions of local governments.

Within this contemporary planning practice in Istanbul, heritage planning has become an increasingly important issue due to the multi-stakeholder nature of cultural and natural heritage governance and the unique ontological value of the city's heritage itself.

This situation has opened up discussions on how Istanbul's cultural heritage can move beyond merely being an asset that requires conservation to play a more decisive role in urban policies. In this context, the intersection of cultural heritage strategies and actions with other urban policy areas has strengthened its impact and expanded its role. This paper aims to explore and evaluate the growing role of heritage in Istanbul Vision 2050 and examine how this transformation has taken shape.

The Istanbul Vision 2050 Strategy Document focuses on the challenges of integrated conservation for Istanbul's cultural and natural heritage. It defines the "Istanbul Heritage" approach not only in terms of heritage elements such as protected areas and registered cultural assets but also in relation to its broader metropolitan and even transboundary impacts. At the same time, the management, conservation, accessibility, and sustainability of Istanbul Heritage are framed as essential urban services, much like transportation, education, and healthcare.

In this context, VEP proposes a heritage-based spatial network to operationalize the concept of Istanbul Heritage. It identifies tools and steps for adapting theoretical approaches to cultural landscapes and complex socio-ecological networks into practical applications for local governance. The goal is to develop actionable strategies for implementing innovative conservation practices.

The Vision 2050 Action Plan is structured around the strategic action framework of "Istanbulites' Right to Cultural Heritage", guided by discussions on cultural heritage rights and rights-based conservation. Within this framework, specific actions have been identified to ensure inclusive participation in cultural heritage conservation, foster sustainable heritage governance, and facilitate access to and engagement with cultural heritage. Additionally, the multi-crisis-oriented structure of VEP has enabled Istanbul Heritage to be addressed through a more multi-scalar and intersectional approach.

Istanbul's current planning experience has gained distinctiveness within the field of heritage planning by bridging theoretical discussions, civil society demands, and expert knowledge with practical planning tools implemented by local governments. This paper aims to discuss and further develop the Istanbul Heritage planning approach, summarizing key focal points within this evolving planning framework.

Keywords:

Urban policies; heritage planning; participatory planning; cultural heritage; spatial networks

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T_06 URBAN CULTURES AND LIVED HERITAGE (B) / 1707

Environmental imaginaries of resistance: the case of the waterfront of Thessaloniki

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In the context of climate change and the prospect of rising sea level and floods, urban waterfronts are seen as increasingly vulnerable geographies between the urban fabric and the sea. At the same time, they are attractive terrains for investment that transform varied coastlines to new landscapes of leisure and high end residential developments. Such large scale projects of waterfront regeneration, typically engaging both private and public actors in new schemes of entrepreneurial urban governance, aim at boosting the city's economy by promoting an attractive image to the world. Indeed, urban waterfronts having lost their productive industrial character, are often projected in planning terms either as dormant opportunities for cities' overall image and their competitiveness in world economy or as vulnerable zones of ecological importance that need to be protected. A large amount of literature has presented urban waterfronts from both these often contradicting perspectives, foregrounding their environmental or the strategic role.

This paper discusses urban waterfronts as places of the everyday around which environmental movements are articulated. Moving beyond, dualistic approaches to waterfronts - natural / technical, formal / informal, global/local - the paper embraces the approach of urban political ecology, viewing the waterfront as socio-natural urban terrain, to unveil the variety of conceptualization of nature, of "ecological imaginaries" (Gandy, 2006) that are vested on it. It suggests that, beyond its global character as an eldorado of real estate in the context of large urban regeneration projects and its natural character as zones of protection of biodiversity and management of climate risks, urban waterfronts are sites of - formal and informal - heritage, public spaces of common access, lived places of the everyday. Such varied imaginaries, often overlooked by formal plans, are foregrounded by local movements that resist proposed plans and actively claim their right to the waterfront, as a common good and a socio-natural heritage.

Adopting this understanding of the waterfront as a terrain where dominant imaginaries of "ecological modernization" coexist and collide with varied, lived ecological imaginaries of the everyday, the paper then examines the case of the waterfront of the city of Thessaloniki. The waterfront of Thessaloniki has been the object of various urban plans and projects of different scales, initiated by different actors, during the last decade. The proliferation of projects is related to developments in planning policy and the management of public land that were introduced during the years of the financial crisis in Greece. The paper maps the projects that have been proposed and/or are already underway, identifies the actors involved and their representation of the waterfront, their "waterfront imaginaries". Next to and in constant interaction with the formal actors, different movements that have resisted, and acted against, these developments are charted. Such resistance is not homogeneous or static in time. It originates from various actors, organized movements or ad hoc initiatives, may be highly localized or city-wide. They may also be expressed as "nonmovements" (Bayat, 2010) i.e. "shared practices of large numbers of ordinary people whose fragmented but similar activities trigger much social change, ... rarely guided by an ideology or recognizable leaderships and organizations". Although there is no homogeneity or stability, these nascent urban cultures of resistance articulated around the waterfront, unveil this prominent stretch of land as a space of cultural, social and environmental value produced in different scales and temporalities.

The case study is based on recent schemes proposed on the eastern, less developed, part of Thessaloniki's waterfront as well as on interviews of people participating in local movements.

Keywords:

urban waterfronts, environmental imaginaries

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T_06 URBAN CULTURES AND LIVED HERITAGE (B) / 704

The Dilemma of Authenticity: The Conservation and Reconstruction of Traditional Residences in China —Taking Pingyao, Suzhou and Shanghai as Examples

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Thirty years after the release of the Nara Document on Authenticity, the concept of authenticity still faces many difficulties in its localization in China, which are manifested in three aspects: the contradiction between absolutization and relativization, materiality and spirituality, and authority and popularization. In China's historic cities, there are a large number of traditional residences, which constitute the background of the “authenticity” of urban heritage. However, due to the traditional wooden construction in China, these traditional residences have undergone nearly a century of historical changes and suffer from problems such as structural aging and long-term disrepair. Unlike the legally protected historical buildings in China, which are maintained by the state, most traditional residences are protected by individuals, and often encounter difficulties such as lack of funds and high maintenance costs during the conservation process. To a considerable extent, there are also calls for demolition and reconstruction among the public. How to maintain the authenticity of traditional residences? This paper takes three historic cities in China - Pingyao, Suzhou and Shanghai - as examples to explore three different protection models caused by the different land values: government-led, market-led, and swinging between government-led and market-led. It also discusses the similarities and differences in the attitudes of the government, experts and the public towards the protection of traditional residences, and how they maintain a delicate balance like walking on a tightrope to the greatest extent possible to preserve the authenticity of traditional residences.

Keywords:

authenticity; dilemma; traditional residences; conservation; reconstruction

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T_06 URBAN CULTURES AND LIVED HERITAGE (B) / 1381**Social Entrepreneurs as Innovators in Sustainable Heritage-Led Urban Regeneration****Author:** Federica Scaffidi¹¹ *Leibniz University Hannover***Corresponding Author:** scaffidi@staedtebau.uni-hannover.de

The intersection of cultural heritage and urban regeneration provides fertile ground for reimagining the sustainable future of cities. Within this dynamic field, social entrepreneurs have emerged as pivotal agents of change, driving innovative and community-centered approaches to revitalizing heritage assets (Scaffidi, Micelli, Nash; 2024).

While the state of the art in social entrepreneurship and its effect on urban regeneration is well-documented (Sacco & Segre, 2009; Mangialardo & Micelli, 2016; Micelli & Scaffidi, 2022; Micelli, Ostanel, Lazzarini, 2023), there remains a gap in the literature regarding the specific role of the social entrepreneur in sustainable heritage-led urban regeneration. This study –published in *Cities Journal* (Scaffidi, Micelli, Nash; 2024) - aims to test the hypothesis that social entrepreneurs play a crucial role in this context.

This research examines 17 European case studies where social enterprises transformed neglected industrial heritage into thriving community assets, contributing to cultural vibrancy, social inclusivity, and environmental sustainability. It employs qualitative research methodologies, including unstructured interviews, exploratory and dialogic surveys, data analysis, and comparative analysis.

Through regeneration, creativity and community-driven models, social entrepreneurs effectively bridge the regeneration of lived heritage with the demands of contemporary urban life. Projects such as ExRotaprint in Berlin and Dolomiti Hub in Italy exemplify this synergy, transforming derelict spaces into cultural hubs that celebrate local narratives while promoting equitable urban futures.

The findings show key success factors, including the cultural sensitivity, innovative mindset, and resilience of social entrepreneurs, alongside the systemic challenges they face, such as restrictive policies and funding limitations.

Aligning with Track 6 of AESOP 2025, this abstract underscores the potential of heritage-led regeneration to sustain and enhance urban cultures. It invites discussion on how social entrepreneurship can serve as a mechanism to preserve urban identities, celebrate diversity, and foster sustainable futures. By linking theoretical insights with practical examples, this contribution provides actionable recommendations for practitioners, policymakers, and academics invested in the evolving dialogue of lived heritage and urban transformation.

y linking theoretical insights with practical examples, this contribution provides actionable recommendations for practitioners, policymakers, and academics invested in the evolving dialogue of lived heritage and urban transformation.

Keywords:

Social entrepreneurship, heritage-led regeneration, cultural urbanism, sustainable development, community-driven innovation

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T_06 URBAN CULTURES AND LIVED HERITAGE (B) / 972

Affective Discourses Against Heritage

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In Finland, the building stock is relatively young: the majority of the buildings is built during the second half of the 1900s. Yet, statistics show high demolition rates in Finland, in particular in growing cities, where demolishing has boomed in parallel with real estate business. Demolition does not only erase potential layers of heritage, it also threatens officially protected historic buildings and areas. Detailed knowledge about the motives and reasoning behind demolitions has been scarce. (Huuhka & Lahdensivu, 2016)

In my doctoral dissertation, published in January 2025, I studied decision making and urban planning processes in a real estate development project, Tikkurila Church Quarter, where a protected church was dismantled and replaced by a new church and housing blocks. The aim was to explore the discursive struggles for and against heritage in a development project typical for 2010s'Finland. In my analysis, I applied critical discourse analysis and Sara Ahmed's concept of affect (Ahmed, 2004). The data consisted of minutes of decisions made, planning documents, opinions and media texts concerning Tikkurila Church Quarter.

In the complicated case, demolition was justified by discourses that made use of affective language. Negative emotions like fear and disgust were aroused by exaggerating the risks of renovation: pointing out "mold", "poisonous" materials and "polluted" structures, that possibly could not be removed, and mystifying the "indoor air problem" that would keep spreading the contaminated air. Affects mobilised decision-making more efficiently than facts. The narrative of the pro-demolition discourse suggested, that buildings inevitably deteriorate in the course of time. It ignored that the owner, who wanted to dismantle the building in hope for economic profit, had not maintained it appropriately. (Julin, 2025).

According to Ahmed, affects are sticky; they unite communities of fear and adhere from similar objects to another. In Finland, old buildings that are in need of repair are in common language often called "mold houses". In USA, demolition of economically unwanted buildings and areas can be justified by "blight" (Abramson, 2016; Nelson, 2014). Interestingly, the concept of blight refers similarly to mold and contamination. In this paper, I explore the connections between these affective discourses appearing in different countries.

Keywords:

demolition; real estate development; affects; critical discourse analysis

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T_06 URBAN CULTURES AND LIVED HERITAGE (B) / 1055

Digital Platform for Inner Areas

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In the context of the European debate on the valorisation of the most fragile and scarcely accessible territorial contexts, a key role has long been recognised for heritage, no longer a static constraint to be preserved, but a real driving force in territorial cohesion and development policies. Heritage has acquired a central role in stimulating the exchange of specialised and local knowledge, in strengthening social resilience through connection to places and in promoting participation.

Within this framework, the contribution outlines the progress of the research within a nationally significant interdisciplinary project aimed at experimenting with a virtual system for exploring small historic villages in inner areas using digital technology and the valorisation of the historical heritage and landscape as well as the promotion of more inclusive access.

In particular, we investigate the role that the virtual platform tool can acquire in these contexts to guarantee the right to knowledge and sharing of heritage, understood as a set of socio-cultural and spatial, material and immaterial, cultural and environmental assets that constitute the identity and common heritage of places, removing obstacles to accessibility in both physical and information terms. A digital 'space' to be built in collaboration with local communities, in which to identify - also through virtual interaction between user-space and users - shared strategies for the protection, valorisation and promotion of cultural heritage and to foster the exchange of ideas between stakeholders (private individuals, public decision-makers and inhabitants). At the same time, it will serve as a community archive that allows the community to tell its own story.

The conceptual and operational set-up of the platform, as well as the underlying public involvement processes (of co-design and co-management), are currently being tested in the village of Stigliano, a leading municipality of the inland area 'Montagna Materana' in Basilicata.

The platform and the entire digital ecosystem proposed by the project acquire a dual significance in the research objectives. First, it becomes a useful tool to support and strengthen strategies aimed at countering territorial inequalities, in a context marked by structural socio-economic gaps that have accelerated depopulation, leading to a depletion of social capital and both material and immaterial resources. Through the integration of data on heritage, local businesses, citizen or visitor services, cultural events, and other public manifestations, as well as the ability to interact within a virtual environment, the platform aims to increase the visibility of the territory, the activities taking place there, and the connected landscape, facilitating remote access and attempting to stimulate interactions between users in the virtual environment to foster opportunities for cooperation and investment. However, this potential is countered by the risk that remote access may become self-contained within the virtual space, failing to promote physical presence or produce tangible benefits for local economies and communities. A second meaning is related to the preservation of memory and local identities. Digitizing the cultural heritage in areas subject to depopulation and high levels of hydrogeological risk (aggravated by the climate crisis) represents, in practice, an important oppor-

tunity for accumulating knowledge in the face of the potential 'inevitable fate' of abandonment. In a 'town that is crumbling' (Teti, 2024), like Stigliano, whose historic centre is part of a relocation perimeter, as is the case for other towns in the Italian Apennines, preserving cultural heritage, even in digital form, means acknowledging 'a fundamental democratic need' (Tosco, 2014) and the identity of these territories and their communities. The platform thus becomes an accessible and shared archive capable of recording past and ongoing transformations, opening a dialogue on the future with the communities involved, including through paths of cultural and social regeneration.

Keywords:

cultural landscapes; digital platform; inner areas

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T_06 URBAN CULTURES AND LIVED HERITAGE (O) / 244

Fixing Collective Memory: embracing Designer-Led Regeneration practice of Historic Community

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Over the past decades, large-scale urban construction has conflicted with collective memory, causing the decline of urban collective memory, especially in China. This trend of decline is manifested in the hollowing out of historic communities, mono-functionality, and spatial homogenization after regeneration (Chu, Xie and Chang, 2019). However, current perspectives dealing with these problems primarily focus on citizens, governments and markets, each of which has its limitations (Chen, Ye and Liu, 2023; Wang, Zhang and Wu, 2022). Relatively little attention has been paid to designers' perspective. To fill this gap, we choose the Tongxing community in Chongqing, China, which has a history of more than 400 years, as a typical case study. To revitalize this community, a team of urban designers organized a series of activities to address the decline of collective memory, which is an emerging and significant pattern of historic community regeneration. Based on this, we investigate the impact of designer-led regeneration practices on the collective memory of historic community and the challenges encountered during regeneration.

Designers are crucial to the regeneration process of historic community. On one hand, as hands-on practitioners of place regeneration, they usually possess a comprehensive understanding of the natural, historical, and cultural context of the historic community before the practice. On the other hand, designers usually negotiate with relevant stakeholders and play a role of coordinator, who strive to explore the regeneration potential of historic community and meet the needs and demands of multiple stakeholders.

To this end, we start from conceptualizing collective memory in historic community, which refers to the shared memories of members concerning past events within a certain community. It emphasizes common experiences, cultural identity, and the dynamic transmission of the memory within a social group (Halbwachs, 2020; Connerton, 1989; Türkoğlu and Günay, 2018). In this way, we build a conceptual framework of collective memory, classifying it into three aspects, communicative memory, cultural memory, and media memory (Assmann and Czaplicka, 1995; Neiger, Mayers and Zandberg, 2011; Van Dijck, 2007).

On the basis, we first analyze the spatialization of these collective memories in the Tongxing community. Second, we summarize designer-led regeneration practices through field research and interviews. Third, we organize workshops involving different groups of people to analyze the impact of these designer-led regeneration practices on the collective memory of the Tongxing community, and their significance and future potential. Finally, we assess the practical challenges faced by the designer team through return visits and interviews.

In Tongxing community, collective memory is mainly reflected in public spaces, iconic nodes, and monumental sites. We classify designer-led regeneration practices into three categories: environmental beautification, cultural inheritance, and community building. These designer-led regeneration practices have had a significant impact on collective memory. Regarding communicative memory, they have facilitated communication within and outside the community. Regarding cultural memory, they have strengthened residents' sense of identity. Regarding media memory, they have expanded the external influence of the Tongxing community. Additionally, regarding spatial improvement, they enhance the environment quality of residents' life and the vitality of the space. Designer-led regeneration practices have effectively addressed the decline in community cultural activities, weakened communication, and spatial decay. More importantly, they have revitalized residents' mindset, offering valuable insights for future spontaneous community building. Nonetheless, the designer team also faced challenges such as difficulties in securing funding, and conflicts with the local government's preservation guidelines. Our study reveals a new paradigm for driving the development of historic spaces and urban transformation, which contributes to the reshaping of the collective memory of the area and provides suggestions for urban regeneration and heritage conservation practices in contemporary China as well as in international contexts.

Keywords:

Collective memory decline; designer; historic community; lived heritage; workshop

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T_06 URBAN CULTURES AND LIVED HERITAGE (O) / 157**Lived Heritage through the Changing Gaze: A Views and Vistas Analysis for Valletta****Authors:** Wendy Jo Mifsud¹; Alexander Farrugia¹¹ *University of Malta***Corresponding Authors:** wendy-jo.mifsud@um.edu.mt, alexander.farrugia@um.edu.mt

This paper investigates the transformative potential of urban planning by presenting the process through which the authors drew up a comprehensive Views and Vistas Analysis for Valletta, a UNESCO World Heritage Site and Malta's capital city. As a Mediterranean port city, Valletta's urban form and architectural heritage, deeply intertwined with its maritime history, reflect a rich tapestry of cultural and historical significance (UNESCO, 2023). The theoretical background to the Views and Vistas Analysis shall be presented through three key themes related to Urban Cultures and Lived Heritage: Spatiality, Community and Ritual. Through the first theme, Spatiality, we shall examine the situatedness of a person experiencing a cultural landscape (Bressa et al., 2021). We shall investigate how the city's spatial organization, including its distinctive grid-iron morphology, its robust fortifications, and its characteristic waterfronts, contribute to its enduring cultural value. Secondly, we shall delve into the theme of Community, considering how a viewer's changing gaze contributes to their intangible experience of the city (Viik, 2011). Here, we shall describe how the pressures of development are altering the city's visual character and its intangible cultural values, such as its sense of place, community spirit, and social fabric. This includes examining how the increasing influx of tourists, the demands of contemporary lifestyles, and the application of development control mechanisms are all factors in the ongoing transformation of the city. Finally, we shall explore how Ritual is intricately linked to the role of the city (Wasserman, 1998), since Valletta was conceived as a bulwark of Christianity that has served uninterrupted as a site of pilgrimage and spectacle. We shall explore how the movement of people for religious ceremonies, daily life, and cultural events such as festivals and parades has shaped the city's sightlines and imbued it with a unique sense of performance and theatricality.

The Views and Vistas Analysis for Valletta was conducted through a rigorous seven-point methodology inspired by literature (e.g. LeBlanc, 2008) international Charters for Heritage Conservation (e.g. ICOMOS, 2005, 2013) and similar initiatives (e.g. DEGW, 2002; Veldpaus and Roders, 2014; Municipality of Florence, 2022), specifically using the Statement of Outstanding Universal Value for Valletta (UNESCO, 2023) to identify key view-based indicators. This methodology aims to understand the significance of urban views for Valletta by identifying key visual elements within the city that contribute to its visual appeal, assessing the aesthetic and symbolic importance of these features, determining optimal viewing positions to experience and evaluate these views, analysing the visual composition of the views, considering elements in the foreground, middle-ground, and background, and finally, outlining measures to protect the visual integrity of these key views by mitigating potential threats from development and other factors. This approach therefore seeks to understand and protect the visual character of Valletta by identifying its most significant views and developing strategies to safeguard them. The analysis resulted in a set of key principles for good governance in the interpretation and application of Maltese spatial planning policy. These principles emphasize the importance of assessing the cumulative impact of development within the city and its immediate environs, recognizing that incremental development can significantly impact the city's skyline through the articulation of its roofscape. Ultimately, the Views and Vistas Analysis is a tool to define a Sphere of Influence (UNESCO, 2009, 2011, 2021) around the city, this serving as a zone within which development is to be carefully assessed to maintain Valletta's urban attractiveness in the way the city is visually experienced both from within and without.

Keywords:

Community, Ritual, Spatiality, Views, Visual Integrity

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T_06 URBAN CULTURES AND LIVED HERITAGE (O) / 38**Reimagining Postgrowth Urbanism: Adaptive Reuse of Industrial Heritage for Sustainable Futures**

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Amid escalating planetary crises, postgrowth urbanism emerges as a critical paradigm shift, challenging traditional planning models by prioritizing ecological balance, social equity, and community well-being over relentless economic expansion. This paper investigates the adaptive reuse of industrial heritage as a transformative tool for advancing sustainable urban futures. Focusing on regions shaped by extractive industries, such as West Texas and the MENA region, the study examines how these legacy sites can be reimagined to address today's environmental, social, and cultural challenges.

Drawing on comparative analysis, the research delves into exemplary adaptive reuse initiatives that integrate principles of community participation, climate resilience, and circular economy. Case studies include the repurposing of oilfields into renewable energy hubs and the transformation of former industrial zones into cultural and ecological assets. These projects demonstrate the dual potential of preserving cultural heritage while fostering economic opportunities aligned with postgrowth ideals, such as local entrepreneurship, green industries, and resource regeneration.

However, significant barriers persist, including fragmented policies, financial limitations, and resistance to change. This paper identifies these obstacles and offers actionable strategies, such as leveraging public-private partnerships, integrating flexible financing

models, and promoting community-led planning frameworks. These approaches can help bridge the gap between theoretical aspirations and practical implementation, fostering a more inclusive and resilient urban future.

The study contributes to the theoretical discourse on postgrowth urbanism by linking it to actionable design and planning practices. It emphasizes the role of planners as agents of systemic change, advocating for interdisciplinary collaboration to address complex, interconnected challenges. Adaptive reuse, when applied thoughtfully, emerges as a key strategy for reshaping urban landscapes into inclusive, sustainable, and regenerative spaces.

By rethinking urban development in the context of planetary and societal well-being, this work invites dialogue among scholars, practitioners, and policymakers on leveraging industrial heritage to foster equitable, sustainable cities and regions in an era defined by uncertainty and transformation.

Keywords:

Postgrowth urbanism; adaptive reuse; industrial heritage; resilience

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T_06 URBAN CULTURES AND LIVED HERITAGE (O) / 274

The Sacred Mountain of Gargano: Urban Culture and Sacred Landscapes

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The Gargano promontory, located in Puglia, south of Italy, is a distinctive territory, punctuated by an extraordinary concentration of sacred sites that have profoundly shaped its cultural and landscape identity over centuries. Referred to as the “Sacred Mountain,” it epitomizes the transformative interaction between cultural heritage and natural landscapes, influencing not only the physical terrain but also social and spiritual dynamics. This research examines the sanctuaries of Gargano—including San Matteo and Santa Maria di Stignano in San Marco in Lamis, San Pio in San Giovanni Rotondo, San Michele Arcangelo and Santa Maria di Pulsano in Monte Sant’Angelo, the Holy Trinity in Mattinata, and Santa Maria di Tremiti—as focal nodes in a living cultural landscape.

Employing a multidisciplinary approach that integrates archival research, historical cartography, and field surveys, this study explores how the sacralization of the Gargano landscape has given rise to forms of lived heritage deeply intertwined with its geographic and historical contexts. The sanctuaries and pilgrimage routes are analyzed as cultural infrastructures that mediate between tradition and innovation, fostering a territorial resilience capable of addressing contemporary challenges such as environmental degradation, the abandonment of local religious practices, and the pressures of overtourism.

Gargano emerges as a living palimpsest a cultural landscape that is not merely a repository of historical memory but an adaptive, evolving space capable of regeneration. This research highlights the risks posed by the loss of authenticity and proposes an integrated valorization strategy that balances contemporary needs with the preservation of these sites' spiritual and cultural essence. By examining the interplay between architectural forms, natural settings, and human narratives, the study identifies operational pathways for the sustainable management of Gargano's sacred heritage.

Through a comparative analysis of the sanctuaries, the research aims to outline actionable solutions for enhancing conservation, accessibility, and social regeneration. Ultimately, it seeks to safeguard the transformative power of these sacred sites as enduring expressions of a harmonious synthesis between nature and culture, ensuring their relevance and vitality for future generations.

Keywords:

Gargano; cultural landscapes; sanctuaries; Sacred

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T_06 URBAN CULTURES AND LIVED HERITAGE (O) / 897

From Large-scale Modernist Planning to Small-scale Urban Blocks: Spatial Transformation Experiments in China's Large Gated Communities

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Background:

Modernist urban planning has profoundly shaped urban environments during global urbanization, emphasizing functional zoning, large-scale land parcels, and rapid transit systems. In China, the extensive construction of new towns since the 1990s has been guided by modernist planning principles and executed via regulatory detailed planning. While this approach has facilitated rapid growth, it has also exposed significant deficiencies in spatial quality and long-term sustainability. As a hallmark of this development model, large-scale gated residential communities face critical challenges related to spatial characteristics, functionality, environmental impact, social interaction, and urban identity, highlighting the urgent need for innovative reform (International Panel on Social Progress, 2018).

Purpose:

Despite extensive critique and revision of modernist urban planning concepts within academic discourse, practical applications for transforming large-scale and low-density residential areas remain scarce (Wu et al., 2021). This study seeks to translate these theoretical advancements into urban regeneration practices, addressing the prevalent challenges faced by new residential areas in China. Utilizing the “urban cells” theory as a framework (Cai and Xu, 2021), it aims to explore strategies for the re-urbanization of large-scale gated communities.

Methods:

Through theoretical analysis, case studies, and a spatial transformation design experiment in the core area of Shanghai New Jiangwan Town, this study investigates the theoretical significance and practical approaches to spatial transformation in contemporary large-scale communities.

Figure 1: Status of New Jiangwan Town

Results:

At the theoretical level, a comparative analysis of modernist planning principles and sustainable, human-centered approaches reveals the advantages and operational challenges of adopting models such as mixed-use functions, dense grids, and small blocks. It further highlights the “urban cells” theory as a critical framework for analyzing modernist urban issues.

At the case study level, the analysis of exemplary urban spaces and residential areas clarifies the spatial logic of “Plot-Building-Block-District” and identifies the key characteristics of vibrant, sustainable districts. Furthermore, by examining cases of urban space reconstruction, the study explores densification strategies for spatial transformation and categorizes specific operational patterns.

At the design research level, this study proposes a reconstruction plan for the core area of New Jiangwan Town. Based on the analysis of urban cells, the study modifies the scales of cell units (community blocks) and cell interstices (street spaces), employing a densification strategy to reshape the urban structure and foster vibrant districts. Additionally, the study examines technical challenges in implementation, including ownership changes, legal conflicts, financial burdens, and social frictions, to enhance the operability of the proposed scheme.

Figure 2: Reconstruction Experiment of New Jiangwan Town

Conclusions:

Within the context of China's urban regeneration, this study critically examines large-scale gated residential communities shaped by modernist planning principles, directing the urban design perspective toward spatial quality and sustainable development. In practical terms, the design experiment uses Shanghai New Jiangwan Town as an example to validate the technical feasibility of spatial transformation in large residential areas, demonstrating the broader applicability of spatial densification strategies and the "urban cells" theory. The findings offer both theoretical insights and practical recommendations for the future reconstruction of large-scale gated communities worldwide, contributing to the broader discourse on sustainable urban regeneration.

Keywords:

Modernist planning; Large-scale gated communities; Urban cells; Scale optimization; Densification

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T_06 URBAN CULTURES AND LIVED HERITAGE (O) / 901

The Manifestation of Patterns and the Reconstruction of Meaning: The Reproduction of Spatial Patterns and Role Interpretation Along Xi'an's Historical Urban Axis

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Cities with rich historical layers, such as Xi'an, continuously face a persistent tension between urban renewal and heritage conservation. This conflict may find resolution in the integration of archaeological sites into contemporary urban life, fostering both preservation and adaptive reuse. However, in the context of rapid economic growth, many historical areas are subjected to transformations driven by urban renewal, resulting in the erosion of historical continuity. [Pezzetti, 2019] The fragmentation of historical traces in these cities has led to the loss of systematic readability, while the reconstruction of meaning for key historical sites has often been limited to superficial forms of individual buildings along prominent historical axes, with less consideration for the larger spatial organization that once supported urban life. [Pezzetti and Liu, 2019]

Xi'an, as a representative example of historical cities, illustrates how architectural relics, embedded within the broader urban fabric, contribute to the value of individual buildings. (Miu, 1990) This study focuses on the evolution of historical spaces along three main axes within the city's structure. By analyzing several districts that continue to preserve and renew these historical axes, the research examines urban renewal projects in these areas and their impact on the overall historical configuration. It highlights the influence

of these historical patterns on urban space and explores how these areas continue to play vital roles in contemporary urban environments. The research places particular emphasis on the continuity of spatial patterns that reflect traditional urban life, understood as a deep structure that preserves the memory of the city, and investigates their potential for identity reconstruction within the rapidly changing urban landscape.

This study positions conservation and urban renewal as two complementary actions driven by the same intellectual framework (Rogers and Ernesto, 1958). It explores how these actions can ensure the preservation of historical axes and spatial patterns, while also allowing for their integration into the current urban fabric, enabling the transmission of cultural meaning through urban life. Lastly, the study addresses the crisis of cultural identity in post-growth Chinese cities and examines the potential for creating new cultural spaces within the urban environment. By reconstructing public spaces through the lens of historical urban patterns, this research suggests that public spaces can serve as tools for re-reading and rewriting the city's history (Gennaro, 2018), transforming a state of cultural silence into an active process of uncovering and interpreting the city's historical structure.

Keywords:

urban cultures, spatial pattern, urban axis, reconstruction of meaning, rewriting

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T_06 URBAN CULTURES AND LIVED HERITAGE (O) / 537

Research on Cultural Adaptation Mechanisms of the Duku Heritage Corridor Based on Heritage Ecosystems

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The Duku Heritage Corridor is known as "China's Most Beautiful Highway", represents the essence of the Tianshan World Heritage Scenic Byway. The 14th Five-Year cultural development Plan from China's central government emphasizes the importance of systematically protecting and utilizing historical and cultural heritage. This policy highlights the need for holistic strategies to integrate heritage conservation with sustainable development. Cultural adaptability plays an important role in achieving this balance by fostering harmony between cultural heritage and ecosystems. Through the creation of

adaptive landscapes, integrating “ecological restoration - health restoration - cultural restoration - economic restoration”, it is possible to ensure both preservation and sustainable use of heritage corridors. The Duku Heritage Corridor serves as a valuable case study for exploring how these principles can be implemented effectively. This study aims to clarify the educational value of the Duku Heritage Corridor by identifying its key landscape characteristics and heritage elements. It also considers subjective factors such as the public’s demand for recreation, behavioural patterns and perceptual experiences. By analysing the “production space”; “living space”; and “ecological space” along the corridor, the research provides insights into how these spaces can coexist and support each other. To support this analysis, advanced methods such as digital footprint and user-generated content (UGC) from social media are utilized to capture and evaluate public interactions with the heritage corridor. The findings inform the development of a culturally adaptive management model that can guide route planning, infrastructure design, and conservation strategies. Ultimately, the proposed model offers a comprehensive framework for understanding the unique cultural and natural heritage of the Duku Heritage Corridor. It provides actionable recommendations for promoting the sustainable development of urban and rural heritage areas while enhancing their educational value.

Keywords:

Heritage ecosystems—Duku heritage corridor—educational value—cultural adaptation—management model

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T_06 URBAN CULTURES AND LIVED HERITAGE (O) / 179

Antifragile Monuments: The Metropolitan Dimension of Living Culture and Sustainable Heritage

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This paper explores the evolving notion of the monument within the context of urban conservation, emphasizing its relationship with time, values, and societal continuity. Moving beyond traditional definitions, we propose that a monument is not merely a static physical object, but an architectural sign that establishes virtuous behaviors over

time. This perspective highlights the concept of antifragility, wherein monuments and cultural heritage do not simply withstand time's challenges but grow stronger through their interactions with changing societal contexts. Conservation, we argue, must align with the sustainability of human society, evolving dynamically to reflect contemporary values, rather than just preserving material accuracy.

In this framework, we examine the metropolitan dimension of living culture, where cities, as living monuments, embody a dynamic interplay between heritage, innovation, and sustainable development. The metropolitan environment serves as a fertile ground for cultural exchange, fostering both the preservation of traditions and the integration of new knowledge.

Furthermore, we address the transformation of nature into a secular monument, where human interaction with the environment is defined by freedom, constraint, and ethical responsibility. This transformation embodies the idea of nature as a secular sacred, a shared responsibility that evolves with societal needs.

Finally, through the lens of the Paraty-Quilombo do Campinho project, we explore how local knowledge and cultural landscapes are harnessed as agents of change to address pressing global challenges such as climate change, inequality, and poverty. The paper proposes that urban centers, through their living culture, play a pivotal role in creating resilient, antifragile communities capable of adapting to and thriving in the face of contemporary challenges.

Keywords:

Metropolitan heritage; Antifragility; Secular Monument; Cultural landscape; Local Knowledge.

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T_06 URBAN CULTURES AND LIVED HERITAGE (O) / 817

Characteristics and Mechanisms of the Spatial and Temporal Distribution of Cultural Heritage in the Section of the Yellow River Basin in Qinghai Province

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The Yellow River culture is one of the origins of Chinese civilization. The section of the Yellow River Basin in Qinghai Province contains more than 70% of the cultural heritage of Qinghai Province. It is not only the central hinterland for the inheritance of historical culture in Qinghai Province, but also a key node of the heritage corridor in the Yellow River Basin. Analyzing the distribution characteristics of its cultural heritage and exploring its influencing mechanisms have important theoretical and practical significance for

the protection of historical culture in Qinghai Province and even in the middle and upper reaches of the Yellow River. Taking 2,727 cultural heritages in the study area as the research objects, this paper uses the Arcgis platform and remote sensing information data to classify and segmentally identify the spatial locations of cultural heritage carriers in different periods. By calculating parameters such as the kernel density analysis model and the nearest neighbor index, it systematically analyzes the characteristics of spatial and temporal distribution. At the same time, based on the perspective of new historical theory, this study examines the generation and evolution of cultural heritage from both historical and geographical dimensions, reveals its main influencing factors and action mechanisms, and proposes corresponding protection and inheritance strategies, providing reference for the protection and inheritance of historical culture in the section of the Yellow River Basin in Qinghai Province.

The results show that: 1) In terms of spatial distribution, the cultural heritages are characterized by large - scale aggregation and small - scale dispersion. The high - density areas are concentrated in Xining City. The high - density core areas in different periods show a fluctuating distribution centered around Xining City. 2) In terms of spatial evolution, it can be divided into six time periods for research: ancient Qiang culture, integration of Han culture, integration of Tubo culture, co - existence of multiple ethnic groups, and relative stability. The cultural heritages mainly show the characteristic of changing from concentration in the Hehuang area to dispersion in the surrounding areas. 3) In terms of influencing factors, the spatial distribution of cultural heritages is affected by key factors such as topography, basin hydrology, climatic conditions, and political culture.

Keywords:

Cultural heritage; Spatial and temporal distribution; Influencing factors

T_06 URBAN CULTURES AND LIVED HERITAGE (O) / 715

Exploring Spatial Evolution of Traditional Settlement Landscapes in the Southern Taihang Region of China: A Study on Cultural Ecosystem Dynamics and Reconstructive Strategies

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Traditional settlement landscapes, exemplifying the symbiotic cultural system between humans and nature, have developed distinctive regional spatial forms and organizational structures within historical environments. Yet, the preservation of China's traditional settlements faces significant threats from industrialization, urbanization, and globalization, leading to systemic fragmentation, diminished developmental momentum, and social imbalances. Addressing these challenges necessitates embedding settlement landscapes within a broader cultural ecological framework to scrutinize their developmental and evolutionary patterns. This study adopts a cultural ecological approach to devise an analytical framework for discerning the evolutionary mechanisms of traditional settlement cultural ecosystems. Focused on traditional settlements in the Southern Taihang region—a central area of the Central Plains culture—this research explores the components, developmental processes, and mechanisms that influence the local cultural ecosystem. The agrarian civilization of Southern Taihang, molded by material, social, and spiritual cultural elements, has evolved from its initial agrarian state, through phases of adaptation to external disruptions, into thriving agrarian-merchant states, followed by a decline due to environmental shifts, and reconstruction through modern tourism. This evolutionary trajectory is driven by interactions among natural

environments, economic conditions, and social structures. In response to the imbalances within the cultural ecosystem, this study proposes protective and reconstructive strategies at macro-regional, meso-cluster, and micro-node levels, advocating for the harmonious integration of external natural and cultural environments with settlement ecosystems. It champions a shift from static preservation to dynamic, integrative conservation methods. This research not only provides a novel theoretical perspective and practical pathways for the adaptive reconstruction of traditional settlements in Southern Taihang but also offers valuable insights into the dynamic adaptation and renewal of cultural heritage globally and in similar regions.

Keywords:

Traditional Settlement Landscapes; Cultural Ecology; Evolutionary Mechanisms; Southern Taihang; China

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T_06 URBAN CULTURES AND LIVED HERITAGE (O) / 1396

Cultural heritage as an urban welfare infrastructure for sustainable, safe and inclusive territorial development

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The issue of enhancing cultural heritage increasingly intersects with the significant challenges of contemporary society - climate change, depletion of non-renewable resources, social inequalities, and the crisis of the welfare State - all of which are leading to significant changes in the socio-economic and spatial models of territories. Over the last decade, the concept of Cultural Heritage (CH) has undergone a paradigm shift, focusing more on its social implications and human interactions as part of "territorial cultural systems"(Nigro, 2007), key resource for making cities and human settlements "inclusive, safe, resilient and sustainable"(Agenda 2030). In this perspective, heritage becomes an active resource that creates new meeting spaces, community hubs, and places of social inclusion, essential for identity processes linked to integrated enhancement projects. In line with this idea, the European Year of Cultural Heritage has positioned cultural heritage as a resource for the future, putting local communities at the centre, promoting accessibility and supporting public development (COM, 2018). An important role is being recognised for culture in urban welfare policies, which requires a multidisciplinary approach to conceptualise heritage as a public good and local identity (Biehl, 2015). This vision highlights the systemic and relational nature of the concept of heritage as a common good (Leoni, 2020). It is therefore essential to manage and plan the transformation of cities, promoting a different growth model based on existing heritage, and on the centrality of open public space as possible widespread network of use and accessibility.

This paper presents a study carried out by the DiARC-UNINA group, developed within the WP4 - Spoke 1 of the PE5 CHANGES research project "Cultural Heritage Active Innovation for Next-Gen Sustainable Society", entitled "Strategies4Changes". The article reflects on the importance and role of cultural heritage as a catalyst for services and urbanity in a new welfare system through public space understood as an active resource for the sustainable development of territories and the improvement of quality of life. The case study focuses on the Campi Flegrei area, a fragile and endangered landscape, where rampant land consumption has led to a gradual depletion of territorial resources. The uncontrolled growth of urban areas in restricted and high-risk zones has disfigured the landscape and even contributed to reducing the quality of the living environment and the attractiveness of the places. "Landscapes of Ordinary" characterized in part by a spontaneous settlement fabric that sacrifices the 'space between things' and a public dimension of living marked by introversion, monofunctionality and degradation. This condition requires a new approach to housing, starting with a renewed relationship with the key resources of the territory - the cultural heritage - for the definition of a new welfare system.

The research outlines a study methodology aimed at developing guidelines for urban planning, articulated through the definition of interpretative frameworks that address the relationship between cultural heritage and welfare, identifying three different dimensions: (i) cultural heritage and illegal settlements, in the absence of institutional control; (ii) cultural heritage and public heritage, in the absence of well-being and spatial quality, as a result of processes of privatisation and fragmentation of public spaces; (iii) cultural heritage and abandonment, in the absence of maintenance and management. These critical issues form the basis of a reflection that supports the concept of cultural heritage as a new form of welfare, based on a relationship of stewardship, recognition and interdependence between heritage and communities as a co-produced outcome of collective action. This perspective is based on a proximity approach - micro-neighbourhood units - characterised by homogeneity in terms of cultural heritage and services, where the presence of a community dimension can be recognised.

Keywords:

welfare; cultural heritage; common good; community heritage;

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T_06 URBAN CULTURES AND LIVED HERITAGE (O) / 83

Understanding the cultural potential of rural history: A conceptual framework of cultural capital development

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As the process of globalisation accelerates, cultural diversity is receiving unprecedented attention. The international community's ongoing exploration of sustainable development models for traditional communities has increasingly highlighted the importance of culture in shaping local identity, transforming the value of resources and enhancing economic competitiveness. The intrinsic connection between the cultural potential embedded in rural history and the concept of cultural capital has become a research hotspot across national boundaries. Peasant Life in China: A Field Study of Country Life in the Yangtze Valley opens a window for international academics to understand China's countryside, and the historical and cultural resources of the classic case of Kaixiangong Village in the book have undoubtedly become an excellent example for exploring the mechanism of transforming rural cultural capital and the path of sustainable development in the context of the new era. In the context of the new era, it has undoubtedly become an excellent example for exploring the transformation mechanism and sustainable development path of rural cultural capital. Therefore, our study takes Kaixinbow Village as an example, and collects comprehensive and in-depth data information about the demographic changes of the village, the pulse of industrial development, the current status of rural cultural inheritance, the creation of cultural IPs, and the level of villagers' cultural cognition in the summer of 2023 through field surveys, semi-structured interviews, and questionnaires, among other multi-dimensional data information. The study aims to accurately analyse the constituent elements and transformation obstacles of its cultural capital, deeply explore the positive role of rural historical and cultural potentials in contemporary socio-economic development, and further expand the application dimensions and feasible paths of the conceptual model of cultural capital in rural revitalization practice, so as to contribute innovative and referential Chinese wisdom and solutions to the effective development and utilization of global rural cultural resources.

Keywords:

Cultural capital; Cultural potential; Rural history; Kaixiangong village;

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Immanent Vulnerabilities of Coastal Urban Heritage to Climate Change

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It is known that cultural heritage sites are affected by the impacts of climate change (CC) in physical (e.g. sea-level rise, coastal erosion, or increase in temperature (Simpson et al., 2022)), social (e.g. migration or demographic shifts (UNESCO, 2007)), cultural (e.g. cultural erosion (UNESCO, 2007)), environmental (i.e. biodiversity loss (Lafrenz Samuels, 2017) or deforestation (IPCC, 2023)), and economic (e.g. poverty (Gasper, Blohm and

Ruth, 2011)) dimensions (Fatorić and Seekamp, 2017; Brewer and Riede, 2018; Casey and Becker, 2019; Fatorić and Biesbroek, 2020; Aktürk and Dastgerdi, 2021; ICOMOS, UNESCO and IPCC, 2021; Orr, Richards and Fatorić, 2021; Sesana et al., 2021; Axon, Chapman and Light, 2024). Even though there are various studies on monumental heritage buildings or archeological heritage sites in the context of CC, urban heritage, which refers to all tangible (features of built and urban environments), intangible (events, traditions, skills, knowledge, etc.), and natural (landscape, etc.) aspects of urban zones is less studied (Dai, Zheng and Yang, 2022). Yet, since urban zones have a significant part in greenhouse gas emissions in the atmosphere (IPCC, 2023) UH is severely affected by CC. Moreover, urban heritage sites located in the coastal zones are affected more due to being “hot spots” in terms of the frequency and severity of CC-related events (IPCC, 2023).

Since vulnerability is defined as the propensity or predisposition to be adversely affected (IPCC, 2019) there are some immanent vulnerabilities, due to common values of coastal urban heritage (CUH; is the sum of the tangible and intangible values of urban life that are formed over time due to social, economic, cultural, physical, and environmental features unique to coastal areas), that derive from the nexus of the coastal and urban context. However, there are also some unique vulnerabilities to each zone since each heritage site is in an inimitable dialogue with its actors, location, and natural features.

Nevertheless, all of these vulnerabilities derive from the complex structures of the CUH sites which include not only the tangible elements of urban and coastal contexts but also various stakeholders involved in the coastal-urban processes (living-managing-utilizing-etc.) and their multi-layered networks. Hence, addressing these vulnerabilities in the management process requires an integrated approach to well-defined problems. However, there are no studies that focus on both immanent or unique vulnerabilities of this specific type of heritage site (CUH) to promote their management processes in the context of CC.

Therefore this study aims to determine the immanent and unique vulnerabilities of CUH sites in terms of CC to contribute to the management approaches. To achieve this, a content analysis was conducted in the State of Conservation (SoC) Reports of UNESCO on World Heritage Sites (WHS). SoC reports are aimed at identifying the negative effects on the World Heritage properties which are under threat. With the cumulation of these reports and analyses, generic threats, trends, and potential dangers can be identified (Veillon, 2014), including the ones that are related to CC. Moreover, the SoC reporting system can be seen as the most standardized global monitoring system that provides data for qualitative and quantitative interpretations so far (Veillon, 2014; Young, 2016; Guzman, Pereira Roders and Colenbrander, 2018). Hence, mapping and selecting the coastal urban heritage sites among WHSs, analyzing the threats they are dealing with, and combining these results with the urban heritage literature would give us a framework for their vulnerabilities.

Consequently, by identifying the vulnerabilities of CUH, this study aims to contribute to the theoretical literature as well as the management practices. Obtained results are expected to provide a well-defined framework of immanent and unique vulnerabilities, and therefore, help policymakers adopt more on-target actions.

Keywords:

coastal; urban heritage; climate change; vulnerability; state of conservation

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Study on evaluation of liveliness level and promotion strategy for intangible cultural heritage in Qinghai Province

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With the gradual deepening of the protection of World heritage, the protection of intangible cultural heritage has gradually shifted from "cultural residue" to "living state" protection. The state of intangible cultural heritage development, its level, and how to evaluate the liveliness level of intangible cultural heritage are pressing issues that need to be addressed in its development. However, there are few researches on the evaluation of the liveliness level of intangible cultural heritage, so it is of great significance to evaluate the liveliness level objectively and scientifically. Therefore, this paper uses mathematical analysis model as a tool, and determines the index weights from four aspects: carrier inheritance degree, policy support degree, social exchange degree and production efficiency degree through analytic hierarchy process (AHP), and constructs the evaluation index system of intangible cultural heritage's liveliness level and its comprehensive evaluation function. On this basis, the intangible cultural heritage of Qinghai Province is taken as an example to verify the scientificity of the liveliness level evaluation system and the feasibility of the evaluation function. The results show that: (1) The overall characteristics of the intangible cultural heritage in Qinghai Province are relatively active, but the internal differences are obvious; (2) There are great differences in the attitude of the four criteria, the carrier inheritance degree is high, the social exchange degree is average, but the policy support degree and the production efficiency degree are low; (3) Analysis of classification characteristics shows that traditional music, traditional dance and traditional art with strong appreciation and communication are in a high vitality attitude, while folk literature and folk art with weak popularity and audience are in a low vitality attitude. Finally, according to the evaluation results, this paper puts forward the dynamic addition of intangible cultural heritage, the construction of intangible cultural heritage space, "intangible cultural heritage +N" and other promotion strategies. This study has certain guiding significance and practical significance for the evaluation and liveliness level of intangible cultural heritage.

Keywords:

Intangible cultural heritage; Liveliness level; Evaluation system; Promotion strategy

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An Integrated Visual Framework: Using SVIs to Inform Detailed Street Renewal in Historic Urban Spaces

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Background: In the context of increasingly unsettled urban development, historic urban spaces serve as crucial physical carriers of a city's culture and memory, providing collective connections that shape the city's sense of social identity. These visual elements of historic streets constitute spatial memory patterns that are deeply intertwined with people's cultural lives. However, with the rapid development of cities, historic urban areas are facing ageing challenges which increasingly demand detailed street renewal to address the various issues of urban instability and imbalance.

Research Gap: Due to the varying levels and unique cultural landscapes across different cities, the overarching policies of core cities are not often applicable to smaller towns. As a result, governments and stakeholders lack effective quantitative references for different scales of urban renewal, hindering the development of their own tailored strategies for cultural landscape protection. To solve this problem, most local governments conduct subjective analyses based on comprehensive local data of the city's unique cultural characteristics and detailed manual investigations for small-scale validation. However, in areas with limited data, the cost of manual investigations is high and the policies may lack quantitative measurements. Furthermore, limited investigations cannot collect data targeted on the specific renewal needs, making it difficult to obtain effective references from existing historic urban renewal cases.

Method: In the era of big data, urban street-view imagery (SVI) provides an opportunity for efficient quantitative analysis (Fan et al., 2023), offering rich visual information which includes diverse spatial elements, building colours, architectural styles, materials, and more (Zhou et al., 2023). These indicators, which support a human-centred analysis of historic streets, can directly inform detailed urban planning guidelines, especially for cultural landscape preservation (Chen et al., 2024). Our research selected Kaifeng as a case study and employed an integrated visual analysis framework to process SVI data for the renewal of historic urban spaces. In the analysis part, we first employed semantic segmentation via computer vision models to extract the spatial perception elements from historic streets of the city, including street vegetation, street building, and street enclosure. Subsequently, we isolated the street buildings in SVI pictures through the Deeplab models, applied computer vision to evaluate their colour distribution, and constructed a colour benchmark for the historical urban area. Finally, we trained a deep learning model for building material recognition and calibrated each historic street with its corresponding symbolic types. These three steps offer quantified references for street element renewal, colour harmony control, and material enhancement in historic urban spaces. In the following implementation, we applied our framework to exemplary cases from the cities of Xi'an and Luoyang, whose historic areas share similarities with Kaifeng,

in order to compare the results and derive references that can directly inform detailed street renewal policies.

Conclusion: The quantified results of these indicators validated the efficiency of our SVI-based integrated visual framework, highlighting its capability for large-scale, high-precision measurement of historic urban places. By expediting the formulation of spatial optimization policies for urban renewal and cultural heritage preservation, this data-driven approach provides a computational design solution to address the challenges of dynamic and inequitable urban development.

Keywords:

Urban historic places; Street renewal; Street-view imagery; Spatial policies;

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Drawn City: the effects of women's graffiti in public spaces of Rio and Barcelona through cartography

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Graffiti, as a transformative element of the contemporary urban landscape, plays an important role in the consolidation of cultures and identities. Despite its relevance, the graffiti scene is predominantly male, and women face difficulties in being accepted in this field (Pabón-Colón, 2018), reflecting the oppressions of the patriarchal system (Federici, 2017). Consequently, feminist struggles emerge for greater participation of women in urban development (Muxí, 2018). However, can a graffiti made by a woman transform the landscape of a city's public space? The study investigates how graffiti created by women can transform public space, focusing on two neighborhood: the Santo Cristo of Rio de Janeiro, Brazil, and the Poblenou in Barcelona, Spain, both analyzed in 2024. These areas were chosen for their significant concentration of female interventions and for a significant cultural and artistic activity.

The research adopts an interdisciplinary approach, involving Urbanism, Art History, Geography and Design, and uses critical cartography (Cosgrove, 1989) as the basis for mapping female graffiti. The aim is to understand the symbolic impacts of these manifestations on public space, highlighting graffiti as part of the graphic landscape (Till, 2014) and a global artistic phenomenon with local specificities. Furthermore, the research seeks to contribute to the dissemination of knowledge and methodological advancement in urban art studies. The central hypothesis is that historical urban sites, are preferred locations for female graffiti artists because they offer visibility and freedom of expression.

The methodology consists of five stages. First, female graffiti artists are identified through social networks and contacts with artists. Then, field visits are made to

document the interventions, capturing photographs of the graffiti and analyzing their symbolic and material dimensions, as well as their relationship with the local environment. Subsequently, the collected data is digitally mapped to create georeferenced databases and maps that explore new dimensions of graffiti in the landscape. This data is refined to include information such as authorship, themes and location, and is presented in graphs. Finally, the results are shared with society through scientific dissemination, promoting discussion about the importance of female graffiti.

Preliminary results show that in the Santo Cristo, 23 pieces of graffiti by 12 female artists were identified, while in Pólenou, 7 pieces by 7 artists were found. The interventions are often located on metal gates of shops and near squares and cultural centers, emphasizing their ephemerality and their connection with the liveliness of these spaces. The most common themes include signatures, gender and politics, demonstrating graffiti as an act of resistance by the female artists.

The study also highlights the importance of mapping as a way to legitimize the presence of women in the urban art scene and the construction of the cultural landscape. The methodology employed proved to be effective and replicable in different cities and contexts, allowing for a comparative analysis of urban artistic manifestations. Graffiti, treated as an international phenomenon, reveals how female interventions address global themes that reinforce their presence and struggles for rights.

It is concluded that graffiti created by women is a powerful tool for resistance and transformation. By occupying public space with their interventions, female graffiti artists not only mark their existence but also strengthen the feminist struggles for the right to the city. Despite the barriers faced, their voices resonate on issues of cultural and political relevance, contributing to the creation of a symbolic and graphic landscape that engages with identities and cultures. Thus, the study reaffirms the impact of female graffiti on the urban space, highlighting its relevance as artistic expression and resistance in a global context.

Keywords:

urban art; critical cartography; right to the city; cultural landscape

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Reversing cultural marginality in inner peripheries: the key role of heritage communities

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Across Europe, inner peripheries (ESPON, 2017) are increasingly struggling with marginalization shaped by spatial, socio-economic, political, and symbolic dynamics (Schmidt, 1998; Kühn, 2015; Rodriguez-Pose, 2018). From a cultural perspective, marginalization manifests itself as geographical isolation, characterized by a limited access to cultural resources, centers, and infrastructure, such as museums, theatres, and universities. This isolation reinforces perceptions of exclusion, while socio-economic trends, such as the emigration of the youngest and highly educated population, further deprive these regions of innovation and creativity. Moreover, the disconnection from local to global cultural networks, the limited influence on policy-making processes and the persisting urban-centered development models further exacerbates the sense of subalternity of communities living in inner peripheries. As a result, marginal territories are perceived as “places of elsewhere” (Membretti et al., 2022), distant from the values and dynamics of cultural production. This symbolic marginalization fosters a negative self-image within communities, reinforcing narratives of cultural subalternity and isolation.

Despite these challenges, cultural heritage offers an important transformative potential for inner peripheries, acting both as a resource and as a catalyst for change and community empowerment (Duxbury, 2020).

According to the Faro Convention (2005), heritage goes beyond physical artefacts to encompass values, practices and meanings that define collective identities, and it is intrinsically linked to community recognition. The latter is crucial, in fact, to preserve and activate heritage as a resource.

This perspective is particularly relevant in inner peripheries, where cultural subalternity often arises from a lack of both internal and external recognition (Schmidt, 1998). Heritage can serve here as a powerful counter-narrative. Bottom-up approaches to the enhancement of cultural heritage can reverse the perceptions of marginality, fostering new visions and opportunities for local development.

Based on the analysis of the Tammaro-Titerno case-study, in the Campania region, which is part of Italy's “inner areas” (Barca et al., 2014), this paper explores potential and limitations of cultural practices in strengthening relations between heritage and community. In particular, the first outcomes of a participatory mapping process in a small town of the Tammaro-Titerno area will be discussed. The process highlights the deep historical stratification and the interplay between human practices and physical environment that contributed to shape the unique territorial identity. The community mapping process and the numerous bottom-up initiatives currently underway in the Tammaro-Titerno area allow us illustrating how a shift from subalternity to agency can be achieved through participatory processes and place-based cultural practices.

Keywords:

inner peripheries, cultural marginality, cultural heritage, heritage communities

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T_06 URBAN CULTURES AND LIVED HERITAGE (O) / 1488

Research on the Conservation and Development of Residential Historic Districts Based on the Transformation of Human-Land Relationship: A Case Study of Hehuatang Area in Nanjing

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The preservation and revitalization of heritage districts within the context of urban regeneration and cultural economic development have garnered increasing attention. For residential historic districts characterized by complex social fabrics and relatively scant economic resources, the emphasis lies in maintaining the authenticity of daily life, where autonomous participation from community residents is particularly crucial. The human-land relationship, with a focus on the interaction between people and their dwellings, has emerged as one of the core driving forces for urban development. However, due to an inadequate understanding of this interactive relationship, current research and renovation models tend to rely heavily on either spatial or human-centered dominance. The mismatch between the poor quality of the neighborhood environment and the low level of human capital constrains the transformation of residential groups into viable social resources for urban renewal. Therefore, to enable urban cultural heritage to effectively capitalize on the benefits of modern urban development, it is imperative to conduct thorough and systematic research into the operational logic and preservation strategies of residential historic districts.

Drawing on fieldwork data and semi-structured interview materials from the Hehuatang historic district in Nanjing, this study delves into the historical origins and social succession mechanisms of residential historic districts. It uncovers the objective dilemmas faced by these districts in terms of material spatial decay, weakening social networks, and the erosion of cultural attributes. Using the scientific principle of human-dwelling coupling, the study explains the human-land mismatches at levels such as property rights structures, development measures, and community management within historic districts. The findings indicate that the fundamental obstacle to neighborhood revitalization stems from the multiple contradictions accumulated through repeated residential turnover in terms of property rights, responsibilities, and interests. The ambiguity and fragmentation of ownership impede the functioning of traditional incentive mechanisms during preservation and utilization, thereby reducing the inherent motivation for preservation and increasing overall costs. Based on these insights, strategies for property rights integration and mechanism innovation, rehabilitative regeneration, adaptive reuse, and the construction of spiritual places are proposed. These strategies aim to achieve a harmonious unity between preservation and development within residential historic districts, encompassing both material space and socio-cultural dimensions, providing support for the theoretical research and renewal practices of residential historic districts.

Keywords:

historic district; human-land relationship; property rights; sustainable renewal

T_06 URBAN CULTURES AND LIVED HERITAGE (O) / 1830**Complex System Conservation Technology for Spatial Cultural Heritage Networks: A Case Study of Qinghai Province, China****Author:** CHAO MA¹**Co-authors:** ZUOBIN WU¹; YIMIN WEI¹¹ *Xi'an University of Architecture and Technology***Corresponding Authors:** 12225341@qq.com, 735900973@qq.com

Qinghai Province, situated in the eastern Qinghai-Tibet Plateau, encompasses 517 designated cultural heritage sites at both national and provincial protection levels, distributed across its vast territory spanning 720,000 square kilometers. The spatial fragmentation of these cultural assets presents significant challenges to conservation efforts.

While contemporary scholarship on cultural heritage spatial networks has transcended the isolated conservation paradigm by emphasizing spatial connectivity, cultural transmission dynamics, and systemic risks within heritage systems, critical gaps persist in dynamic network modeling and the quantification of cultural values.

Through the integration of Arc-GIS spatial analysis and space syntax methodologies, this study systematically quantifies the spatial distribution patterns of cultural heritage. Leveraging big data analytics and AI-driven technologies, we pioneer a multidimensional evaluation framework that synthesizes cultural value, environmental vulnerability, and social connectivity. This innovative approach has revealed, for the first time, the hierarchical architecture and vulnerability distribution characteristics inherent to Qinghai Province's cultural heritage network. Key conclusions include:

1□ Establishment of a five-tier classification system for heritage network vulnerability in Qinghai;

2□ Constructing the "Tri-Core and Triple-Corridor" Cultural Heritage Network Protection Framework in Qinghai Province□

3□ CV index (Cultural Value Index) is proposed to dynamically evaluate the node importance, break through the limitation of single material value evaluation, and construct a multidimensional network model of

This study establishes a methodological paradigm that profoundly responds to UNESCO's advocated "culture-nature synergistic conservation" framework, delivering operational solutions specifically tailored for ecologically fragile multi-ethnic plateau regions. Through groundbreaking integration of spatial network analysis, dynamic risk simulation, and intelligent decision support into a cohesive technical system, the research achieves transformative breakthroughs in highland cultural heritage conservation. Crucially, the developed framework provides a scientific foundation for Qinghai Province to establish an "International Demonstration Zone for Highland Cultural Heritage Conservation." This initiative aligns with the 2030 Sustainable Development Goals□while addressing region-specific conservation challenges through technology-empowered governance mechanisms, offering a globally replicable Chinese model that harmonizes theoretical innovation with practical adaptability.

Keywords:

Cultural Heritage Spatial Network□Cultural Value Index□Synergistic Conservation□Qinghai Province, China

Track 7 | INCLUSION

T_07 INCLUSION (A) / 868

The Economic Benefits of Gender Equality: A Case Study from Europe

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This research explores how gender equality shapes economic growth in Europe by focusing on the Gender Equality Index (GEI) as a key measure. Using the E3ME econometric model, it examines how reducing the gender pay gap, encouraging women's participation in STEM fields (Science, Technology, Engineering, and Mathematics), and promoting equal job opportunities contribute to GDP (Gross Domestic Product) and employment rates across different regions. Comparing the economic impacts of different levels of gender equality, the study closely examines the 27 EU member states. Also, it includes Special Economic Models to find practical options for enhancing growth potential in regions with high potential.

Research shows that areas with better gender equality scores have better economic growth and more jobs and areas with continuing inequality have economic problems. The study shows that gender equality is not only a hugely desirable goal for society but also an important element in increasing economic growth, considerably contributing to the long-term strength and resilience of regions.

Keywords:

Gender Equality, Economic Growth, Labor Productivity, Social Inequalities, European Society

T_07 INCLUSION (A) / 198

The Role of Spatial Alienation in the Journey of Existence as an Actor in Contested Urban Areas: The Case of Kasımpaşa, Istanbul.

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Although alienation represents the "arche" of Marxist theory, it has also been an important topic of discussion in terms of urbanism. Parallel to the alienation of man from his labour, his own life and man from man, the aggressive policies of production relations in cities trigger the alienation and exclusion of man from the city. This research examines the levels and types of alienation created by aggressive and neoliberal urban policies on urban space in Kasımpaşa, one of the most chaotic neighbourhoods of Istanbul. The multicultural structure of Kasımpaşa, the fact that it is home to many ethnic groups and immigrants, as well as being rapidly affected by complex urbanisation and the intensity of gentrification projects have been effective in determining Kasımpaşa as a case area.

Kasımpaşa is also home to the additional service building of Istanbul Metropolitan Municipality. The main objective of this study is to examine the alienation dimension of the users' relationship with the space from the perspective of local administrators, who are the dominant subjects of Kasımpaşa. Considering the role of local administrators as urban politicians in the decisions taken about the city, the problematic of whether they are real actors in their environment or just passing by and unable to establish meaningful relationships with their environment stands out as the problem that this study tries to solve. The main method of the study is a questionnaire survey and the target group is the employees of Istanbul Metropolitan Municipality. With this survey, the personal and professional relationships they have established with the neighbourhood and which urban interventions lead to spatial alienation in the neighbourhood will be analysed.

Keywords:

Alienation, Gentrification, Being Actor, Borders, Neoliberal Urbanisation

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T_07 INCLUSION (A) / 1316

Urban Environmentalism and the Political Ecologies of Waste in India: Narratives of Inclusion of Informal Waste Workers in the Formalised Waste Infrastructures from Patna

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Indian cities are transitioning towards more modernist, techno-managerial, and capital-intensive approaches to understanding and managing urban ecologies under national flagship programs such as the 'Clean India Mission-Urban' and the 'Smart Cities Mission.' While these transitions are deemed normative pathways for achieving 'sustainable development' and addressing the 'polycrisis' cities are facing, they often depoliticise urban environmentalism by reducing complex socio-ecological issues to mere technological fixes. These technocratic imaginaries and practices primarily cater to the normative imaginations of the urban bourgeoisie and, at times, become violent and exclusionary for the

urban labouring poor (Baviskar, 2018; Sharma, 2022). One such intervention is formalising municipal solid waste management systems to eradicate manual waste handling and scientifically managing it instead. Despite informal waste workers' crucial, effective and efficient contributions to waste metabolisms and reproducing the desired city(scapes), their knowledge, labour and socio-spatial practices are delegitimised, their questions, claims and contestations are rendered invisible from urban ecological imaginations, and they scarcely get featured in urban (environmental) planning scholarship.

My PhD project critically and carefully examines these infrastructural transitions and their implications on the labour, livelihoods, and lives of (in)formal waste workers in Patna, India. Theoretically grounding my research in the heterodox field of situated and embodied Urban Political Ecology (Truelove, 2011; Lawhon, Ernstson and Silver, 2014; Doshi, 2017), and drawing on the work of Simone (2004), Graham and McFarlane (2014), and Fredericks (2018), who approach and understand infrastructures as 'peopled', 'lived', and '(em)bodied', I employed multi-sited ethnography of waste infrastructures as my methodology to engage with the lived realities of people, places, and practices examining how these 'in-transition micro-geographies' are embodied, contested, and navigated by the (in)formal workers in their everyday lives.

In this paper, I present my preliminary findings, arguing how informal waste workers are subject to elitist and caste urban sensibilities, imaginaries, infrastructures and practices, which, although fetishise and benefit from their cheap, dirty, exploitative, and precarious labour, continue to dispossess them of their labour and livelihoods and deny their claims to city-zenship. Foregrounding their everyday labour and lives, my research critically examines how informal waste workers embody, contest and navigate the changing waste infrastructures, drawing on their intersectional identities, social relations and subjectivities and using the precarious temporality of waste infrastructures to their advantage.

This research aims to contribute to the understanding of informality as a critical analytic site to understand better how, in this 'polycrisis', informal workers contest and navigate uneven, unjust, uncertain, and unfree urban ecologies in their everyday lives. These uneven embodiments, contestations and navigations of urban infrastructural transitions and their situated and relational understandings foregrounded in the everyday lived realities open new avenues for theorising diverse urbanisms of/from the Global South, which are socio-spatially rooted, ecologically aware, and politically engaged. These would also help raise and engage with wider political claims around urban inclusion, socio-ecological justice, city-zenship and 'the right to city(life)', which David Harvey (2003), Colin McFarlane (2024) and several others have convincingly argued for.

Keywords:

Ethnography; Inclusive Planning; Informality; Infrastructures; Precarity; Urban Environmentalism; Political Ecology

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T_07 INCLUSION (A) / 1602

Governance, Participation, and Trust: Insights from the Lower Ouseburn Valley

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Participation in decision-making processes is a longstanding issue in both research and practice. It is widely claimed that planning can become socially equitable and more democratic by incorporating stakeholders' perspectives and altering the power dynamics within urban governance. However, further research is necessary to assess the degree of influence that participation grants to non-powerful stakeholders and to identify the conditions that enhance their impact on decision-making processes. This research examines these issues through a case study of the Lower Ouseburn Valley in Newcastle upon Tyne, that has been subject to ongoing rounds of urban regeneration since the late 1990s, where governance structures have evolved around a community-based trust. By using participant observation and semi-structured interviews, the study analyses the shifts in participatory governance over time. Findings reveal a transition from inclusive, community-led decision-making to tokenistic consultation, reinforcing existing power imbalances. However, the study also identifies conditions under which participatory processes can empower non-powerful stakeholders, including the structure of governance models, the design of participatory mechanisms and the role of trust. By examining these factors, the research highlights the importance of inclusive governance frameworks that prioritise meaningful engagement and redistribute power.

Keywords:

Participation; Urban governance; Power; Lower Ouseburn Valley

T_07 INCLUSION (A) / 1957

Community-Driven Approaches to Climate Equity and Adaptation

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As climate change accelerates, its effects disproportionately impact vulnerable and historically marginalized populations, amplifying existing social and economic inequalities. Rural and coastal communities, Indigenous nations, and under-resourced regions often lack access to the scientific data, policy frameworks, and institutional support needed to navigate these challenges. The Institute for Engagement & Negotiation (IEN) at the University of Virginia has developed a range of community-driven resilience initiatives that prioritize inclusion, equity, and local knowledge in planning for climate adaptation. This session explores three IEN projects—the Resilience Adaptation Feasibility Tool (RAFT), Climate Collaboratives in Appalachia, and the Eastern Shore of Virginia (ESVA) Livability Hub—each of which employs inclusive planning strategies to center vulnerable populations in climate adaptation efforts.

Each of these projects exemplifies a commitment to inclusivity by embedding equity considerations at every stage of planning, decision-making, and implementation. The RAFT directly engages historically underserved communities and sovereign tribal nations, providing tailored resilience assessments and action plans that reflect their unique priorities and constraints. Climate Collaboratives in Appalachia ensures that rural, economically distressed communities are active participants in shaping their energy futures, positioning renewable energy development as a tool for local empowerment rather than external imposition. The ESVA Livability Hub centers community voices through co-production of knowledge, fostering decision-making processes that integrate local expertise with scientific data to address climate risks. Across all three projects, participatory governance structures—such as community advisory boards, collaborative workshops, and stakeholder-led assessments—serve to democratize resilience planning, ensuring that solutions are not only technically sound but also socially just and community-driven.

By embedding equity within resilience planning, these initiatives create replicable models that empower communities to drive their own adaptation efforts, ensuring that no one is left behind in the response to climate challenges.

Keywords:

community-driven adaptation; equity; community engagement; resilience

T_07 INCLUSION (A) / 1824

Counteracting digital divides through a place-based inclusion process. Insights from an ongoing research project.

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The inclusion paradigm involves creating spaces where everyone feels comfortable, yet it raises a paradox: how can we achieve inclusivity in contexts where discomfort—stemming from extreme social and economic vulnerability in marginalized areas—defines daily life? How truly inclusive is inclusion, and which inequalities remain unaddressed or even worsened? This paradox forces us to consider how inclusion is translated from an abstract idea into urban policies and practices.

Of the disruptive processes shaping our cities, digitalization has been one of the loudest claiming inclusion. The “smart city” model, in particular, continues to be promoted as

the foundation for more inclusive urban environments, however, it falsely assumes that computational and data-driven methods to urban life inherently create innovative solutions and improve transparency. In reality, technocratic approaches shift the responsibility for “smartness” onto individuals, overlooking systemic and structural barriers preventing equitable access to services. As a result, digitalization not only reinforces existing inequalities but also creates new forms of socio-spatial divides, intensifying disparities as new technologies continue to emerge (Eubanks, 2018; Maalsen, 2022; Crampton & Krygier, 2015).

It is crucial to move beyond the “smart city” as an idealized, one-size-fits-all solution (Leszczynski & Elwood, 2022). A promising alternative is adopting an ecological thinking towards the digitalization of welfare systems. This entails focusing on “how” we can live together more sustainably rather than “what” the technological outcomes are, emphasizing collective responsibility and engagement in shaping digital futures (Haraway, 2019). Rethinking inclusion through this lens, we move beyond static comfort zones toward more dynamic forms of engagement, centering marginalized experiences to challenge power structures and create new, meaningful connections across diverse social groups (hooks, 1984).

Underscoring these issues, the COVID-19 pandemic accelerated the adoption of digital tools in almost every sector, including welfare, while simultaneously deepening the digital divide. In Italy, the pandemic’s impact has led to initiatives like the PNRR (“National Recovery and Resilience Plan”), a strategic framework developed to access funds from the European Union’s NextGenerationEU program. Among other foci, the PNRR emphasizes digitalization and supports large-scale academic projects, which also fund initiatives aimed at vulnerable populations. However, how can a national plan like the PNRR translate into place-based programs? And, more crucially, how can these programs address the specific needs of vulnerable groups in diverse urban settings?

This paper focuses on the ‘(E)Welfare in the City’ project, which is part of the PNRR-funded M.U.S.A. (Multilayer Urban Sustainability Action) program. Drawing on insights from urban planning, sociology, and social policy, it discusses our experience applying an ecological approach to address digital disparities in the municipality of Rozzano, located south of Milan. Rozzano stands out as it displays one of the largest public housing areas in Italy and Europe. It faces significant socio-economic challenges, including high poverty rates, elevated school dropout rates, and a large share of young people not in education, employment, or training; and, demographically, it is characterized by a significant presence of foreign-born residents, second-generation immigrants, and an aging population.

Despite these challenges, Rozzano has a strong network of social services, including the “Tavolo Connessioni,” a long-standing initiative connecting educators, social services, and schools to address youth distress and school dropout. Building from this culture of engagement, our research group is co-designing alongside two key social groups experiencing digital disparities: young people and the elderly. We aim to co-create programs that are responsive to the unique needs of Rozzano’s communities. This process is not just about digital access but rethinks the relationship between urban planning, social policy, and technology to build truly inclusive communities.

Keywords:

digital divide; welfare; co-design

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T_07 INCLUSION (A) / 1254**Shaping urban and rural contexts for healthier lives: environment as a key driver for promoting health –SURVIVE****Author:** Nicola Pontarollo¹**Co-authors:** Luca Gandullia²; Lucia Leporatti²; Marcello Montefiori²; Rosella Levaggi³¹ *University of Brescia*² *University of Genoa*³ *University of Brescia***Corresponding Authors:** luca.gandullia@unige.it, nicola.pontarollo@unibs.it, marcello.montefiori@unige.it, lucia.leporatti@unige.it, rosella.levaggi@unibs.it

Promoting healthy living environments necessarily passes through awareness that the determinants of health lie mainly outside the control of the public health sectors. Healthy living is the result of several factors that may produce health inequalities across socio-economic groups. As shown by WHO and other organizations, inequalities should be reduced for equity reasons and for sustainable development. Inclusion, income distribution, and access to services are critical for post-pandemic recovery and fundamental goals of the NextGenerationEU (NGEU) Plan. The study will allow describing the health status and its determinants in different environmental contexts and for different demographic and socio-economic profiles of individuals. We will exploit an original and comprehensive database collected at the suburban level for the city of Genoa in Italy derived from administrative archives and ad hoc surveys. The study on health, well-being, and urban environments will complete the “hard” data with subjective ones. Specifically, the research is structured on the following four pillars:

- analyze the environment-health-healthcare services trade-off and its evolution across demographic and socio-economic groups;
- detect the role that the family and the non-profit sector play in reducing some of the barriers to accessing healthcare;
- identify the long-term strategies that local governments and individuals may put forth to improve health;
- provide graphic representations and interactive tools that summarise the relationship environment-health-healthcare.

Our results will help local policymakers identify strengths and opportunities and benchmark neighborhoods within a city against other neighborhoods within the same town, with upper territorial levels, and with other cities or neighborhoods within other cities.

Keywords:

Quality of life; health cities; suburban level; survey data

T_07 INCLUSION (A) / 771**Gender Inclusive Approach in Local Adaptation Policies in Climate Disaster-affected Coastal Settlements****Author:** Landung Esariti¹**Co-authors:** Amy Young²; Dina Auliya Kharisma¹; Wiwandari Handayani¹¹ *Universitas Diponegoro*² *Griffith University*

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The impacts of climate change, including sea level rise and tidal flooding, significantly affect communities. These include changes in livelihoods, migration due to environmental changes, household finances, health, and education. Climate change poses major challenges for communities, particularly women and vulnerable groups. These groups often face barriers and issues related to gender discrimination arising from the impacts of tidal flooding, such as unequal access to resources, information, and participation in decision-making. Meanwhile, responses to disasters tend to focus on infrastructure development, with few strategies addressing interconnected social justice issues or paying attention to nature-based solutions. This suggests that policies related to adaptation strategies do not demonstrate gender integration, and the needs and roles of women and vulnerable groups are not addressed fairly and inclusively.

This research emphasizes the importance of a gendered approach to strategy planning through inclusive engagement. Quantitative methods and data collection were conducted through observational surveys, roundtable discussions, and in-depth interviews in coastal settlements in Jakarta, Semarang, Demak, and Pekalongan Cities, with 400 respondents consisting of women and children under 16. The results showed three main findings. First, climate change impacts household finances, with more than 80% of the women participating in the survey reporting that their income was affected by climate change. As many as 75% of female respondents' homes were damaged by disasters, causing increased spending on home repair costs. These increased costs push families into poverty. Second, sea level rise and land subsidence have impacted traditional livelihoods in coastal areas, hence, women and children are being forced to work in the informal sector without certainty of employment, wages, and other rights as workers to meet family needs. The lack of alternative skills makes it difficult for them to adapt or shift to new livelihoods. Third, there is a link between school dropout and working children, climate change impacts, and migration. The economic pressure on families due to climate change and the school enrolment of children affected by migration means that children are forced to work at home and not attend school. Access to transportation to school is also disrupted by flooding.

In terms of gender recommendations for inclusive engagement strategies, this research reveals two important recommendations. First, social development strategies need to pay attention to social cohesion in decision-making. Guaranteeing the inclusion of women's and children's voices, and providing space for meaningful participation will strengthen the community consultation process, so that the resulting policies can accommodate community needs effectively. Community empowerment and capacity building need to be integrated into adaptation strategies. Pathways to well-being, safety and economic empowerment need to be mapped and tailored to both formal and community-based interventions. The research also highlights the importance of existing "community champions" in the community, which can be used as a starting point for future interventions, including initiatives in capacity building.

Second, there is a need for social security for women working in the informal sector. Increasing the effectiveness of women's economic empowerment, including training, access to soft loans (micro-enterprise credit), marketing, and strengthening support groups for women in coastal communities. In addition, community-level research on alternative livelihoods (including green economy) and women's empowerment and involvement in decision-making should be encouraged. Initiatives related to child safety and protection, for example by providing access to quality education, and providing psychological support for families affected by disasters to support families in overcoming their increased vulnerability during and post-disaster. These recommendations are expected to encourage adaptation policies that are more inclusive and responsive to the needs of women and other vulnerable groups.

Keywords:

Climate Change Disaster, Gender, Inclusive, Coastal Settlements

Evaluating the quality of children's Active School Travel Spaces through multi-source big data: An approach for informing better child-friendly urban design

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With the advancement of child-friendly urban planning initiatives, the quality of Active School Travel Spaces (ASTSs) has an important impact on children's healthy growth. However, existing research on evaluating the quality of school travel spaces predominantly relies on subjective experience, and a systematic, large-scale quantitative measurement framework hasn't been established. As a response to this situation, we systematically reviewed the literature and design guidelines related to child-friendly urban spaces and ASTS based on the hierarchy of children's needs. Measurement indicators were systematically refined through Large Language Models (LLMs), and a quantitative "ASTS Index" framework suitable for large-scale measurement was developed. The measurement framework includes four dimensions: accessibility, safety, comfort, and convenience, with a total of 28 quantitative indicators.

This study takes street spaces along children's school routes and high-activity street spaces in the central urban area of Shanghai as research objects. The quality of streets is evaluated with the support of spatial design network analysis, multi-source big data and machine learning algorithms. Based on the evaluation results, each street segment is hierarchically clustered. Through experiments involving children's participation, the study reveals a high level of consistency between the results of the quantitative measurements and the subjective perceptions of the participants, providing preliminary evidence for the scientific validity and rationale of the analytical framework. This analytical approach makes a step forward for urban design practices through focusing on the assessment of ASTS quality and highlighting priority areas and short-board dimensions.

Keywords:

Active school travel; Child- friendly; Multi-source big data; Machine learning

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T_07 INCLUSION (A) / 802

Neighborhood Contexts and Their Role in Intergenerational Economic Mobility in South Korea

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This study utilizes the Korea Labor Panel to explore how neighborhood characteristics moderate intergenerational mobility of income and assets in South Korea. We employ moderation analysis using MPLUS to examine the interaction between parental socioeconomic status and neighborhood factors, such as average income, wealth distribution, and housing stability. The findings indicate that high-income neighborhoods and equitable wealth distribution reduce the persistence of economic inequality, thereby fostering greater intergenerational mobility. Conversely, housing instability exacerbates economic persistence by limiting access to upward mobility pathways. Socioeconomic conditions of neighborhoods, including income levels and educational resources, play a significant role in facilitating intergenerational mobility, while housing quality and regional disparities in opportunity structures do not appear to have the same impact. Moreover, the results highlight the nuanced role of environmental factors, with indicators like housing affordability and neighborhood stability influencing mobility differently across regional contexts. For instance, resource-rich neighborhoods provide better educational opportunities, improving children's outcomes, whereas areas with concentrated disadvantages may amplify economic stagnation. Policy implications include targeted investments in regional economic and housing policies, such as equitable wealth redistribution, affordable housing initiatives, and the enhancement of educational resources. By addressing the structural factors limiting mobility, these interventions can reduce socioeconomic inequality and foster upward mobility across generations. This study underscores the critical role of neighborhood environments in mediating the effects of intergenerational economic mobility and offers actionable insights for policymakers.

Keywords:

Intergenerational Economic Mobility; Neighborhood Effect; Socioeconomic Inequality

T_07 INCLUSION (A) / 286

A Capital-Based Assessment of the Livelihood Vulnerability of Syrian Refugees

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Refugee livelihoods have recently attracted attention as they are increasingly caught up in and related to major global transitions in climatic, economic and social systems. In particular, human-made disasters and mass migrations make it necessary to examine the livelihood vulnerability of refugees. The United Nation's 2030 Sustainable Development Goals adopt a livelihoods approach to emphasise capital assets that reflect people's adaptive capabilities and sensitivities. A sustainable livelihood can maintain resources and reproduce capital assets against shock and stresses. The study contributes to the existing literature by addressing an existing gap in research on livelihood vulnerability assessments at the household level for Syrian refugees in Türkiye. The capital-based approach allows the incorporation of context-specific and community-specific variables associated with Syrian refugees besides variables commonly used in vulnerability assessments. The study assesses the livelihood vulnerability of Syrian refugees based on a capital framework and vulnerability dimensions (exposure, vulnerability and adaptive capacity) determined by Intergovernmental Panel on Climate Change (IPCC) by creating a Livelihood Vulnerability Index (LVI) to capture socio-economic problems, the presence or absence of diverse forms of capitals, and problems of organisation or balance among these capital types. The research questions are as following: What is the level of LVI of Syrian refugees, and what type of capitals make it more or less vulnerable? What dimension of vulnerability is more effective on vulnerability? How should planning strategies

regulate the distribution and reproduction of capitals in refugee-dense areas? A mixed method was employed by including both qualitative and quantitative analyses to maximise the reliability of the research. The capital-based livelihood approach is based on five types of capital: human, social, financial, physical and natural. Syrian refugees were selected as a vulnerable group due to the difficulties they face as a result of the Syrian Civil War and forced displacement. The study area is Basmane, Agora and Kadifekale neighbourhoods of Konak District of Izmir, where Syrian refugees densely live. The literature review, field visits, discussions with vulnerable Syrian refugees, and in-depth interviews with non-governmental organisations, and household surveys were employed in order to grasp their needs, perspectives, and experiences. The study primarily relied on data derived from household surveys exploring or gaining a more nuanced understanding of complex issues related to livelihood vulnerability. The findings show that Syrian refugees have highly vulnerable level of LVI, and their vulnerability based on financial capital is the highest, while human capital is the least. Considering vulnerability dimensions, exposure, which includes indicators of hazards, climatic variability, population growth and occupation, is more effective contributing factor to livelihood vulnerability. Adaptive capacity of Syrian refugees is weak due to mainly indicators' values of housing ownership, education, livelihood strategies, socio-economic status and minority/language. In conclusion, physical and natural capital reflect high exposure level of Syrian refugees, while social, human and financial capitals reflect Syrians' capabilities and sensitivities. The study area, which is already a slum, has experienced an increase in inequalities and scarcity of resources due to an imbalance in the types of capital belonging to the host community and vulnerable groups, and the sharing of capitals among them. Planning as a transformative factor should develop convenient practices and strategies to reproduce capital and regulate the distribution of capital to cope with stressors or shocks according to specific characteristics of community and context.

Keywords:

Vulnerable Syrian Population; Refugee Crisis; Livelihood Capital

T_07 INCLUSION (A) / 350

Exploring Environmental Perception, Cognition, and NIMBY Sentiments Toward Psychiatric Hospitals: A Spatial Planning Perspective

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The deinstitutionalisation movement has been implemented in mental healthcare since the 1950s. In the 1980s, Taiwan also introduced the idea of psychiatric rehabilitation, intending to shift the focus of mental healthcare from symptoms to restoring individuals' ability to live in the community. However, there are many difficulties in the deinstitutionalisation process. For instance, in 2019, owing to safety concerns and the perceived impact on quality of life, the Zhoumei community opposed the establishment of the "psychiatric recovery home" in their community, reflecting that mental healthcare institutions are still seen as **"NIMBY (Not in My Backyard) facilities"** in Taiwan.

Existing studies on the NIMBY sentiment about psychological fear primarily approach from the perspective of socially constructed risk perception to discuss the issue. However, from the standpoint of spatial planning, socially constructed cognition influences both "how planners plan facilities" and "how individuals experience them," thereby shaping people's perceptions of such facilities. For example, many psychiatric hospitals in Taiwan were historically located in suburban or rural areas, distant from where people live, and often featured spatial designs with clear boundaries.

Due to urbanisation, many psychiatric hospitals in suburban areas have become inte-

grated into cities, whereas some rural facilities remain relatively isolated campuses. The differences in community scale and facility design lead to varying interactions between residents and their surroundings. Therefore, this study compares the NIMBY sentiments and cognition of community members surrounding psychiatric hospitals in urban and rural areas, further exploring how geographical context and lifestyle influence perception and cognition.

This research examines how environmental stimuli shape community members' perceptions of mental healthcare institutions, highlighting the importance of spatial planning. The research objectives include:

1. To understand how community members cognitively perceive psychiatric hospitals.
2. To explore how spatial planning affects residents' perception of psychiatric hospitals.
3. To investigate whether significant differences exist between urban and rural residents' perception and cognition of psychiatric hospitals.

The research employs a questionnaire survey to assess community members' basic cognition of psychiatric hospitals, such as their functions and target populations. Subsequently, the **Semantic Differential (SD) Scales** are employed to assess how hospital environmental design shapes residents' perceptions and whether these perceptions affect their quality of life, serving as a measure of NIMBY phenomena. In addition to questionnaire data, this study will carry out semi-structured interviews to identify other factors influencing NIMBY sentiments and cognition, achieving a more comprehensive understanding.

The results of this study are expected to show that spatial planning can impact people's perceptions and cognition regarding NIMBY. This result enables future research to investigate the mechanisms underlying these phenomena more profoundly. From the spatial planning perspective, this research examines people's perceptions of psychiatric facilities and the impressions created by existing planning. It seeks to identify gaps between societal perceptions of mental health institutions in the current situation and the direction of policy expectations. Furthermore, it proposes a spatial planning strategy to support the social integration of mental healthcare institutions. This strategy aims to implement deinstitutionalisation while ensuring a secure living environment for residents in the original community.

Keywords:

psychiatry hospital; mental healthcare institutions; NIMBY; perception; cognition

T_07 INCLUSION (A) / 1395

Searching for Possibilities of an Age-Friendly Planning in a Small-Sized City: Saray, Tekirdağ - Turkey

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In Türkiye, cities typically pursue growth-oriented visions spurred by economic expansion and a focus on construction. Conversely, smaller cities facing difficulties in meeting these criteria experience setbacks like population decline and a decrease in quality of life stemming from economic contraction (Arslan et. al, 2016). To address these challenges, adopting new planning concepts creates opportunities to reshape urban possibilities by

taking into account the morphological and environmental traits of cities, demographic compositions, and the quality of life for residents, particularly older adults who chose to stay in these shrinking small cities.

This research centres on the inclusiveness of older adults in a small-scale city, focusing on the Age-Friendly Cities conceptual framework developed and elaborated by the WHO (2007, 2018, 2023). It targets the creation of urban areas that priorities safety, accessibility, and support for older adults. This includes features such as walkable neighborhoods, public safety, accessible transportation, affordable housing, and avenues for social engagement.

Based on these concepts, this study aims to discuss the possibilities of inclusive and age-friendly city implementation and policies in the small-sized city of Saray, Tekirdağ in the Thrace region of Turkey. Saray is a compact city characterized by flat terrain, where population and services are primarily concentrated in its city center, reflecting a shift from its traditionally rural settlement pattern to apartment complexes.

Basic urban services such as education and health need to be improved according to the requirements of the Turkish Planning legislation, while primary schools are widespread close to the 15 Minute City accessibility parameters and cultural-educational activities organized by the Municipality for youth and children show the awareness of the local government towards young citizens. Primary health care services are few and not widespread. The Cultural Center, located at a highly accessible point in the city center, has an active program that mostly targets children and youth.

According to 2023 population data (TÜİK, 2023), 51,224 people live in Saray of which 28,071 reside in the city center. While the rate of increase in Turkey is 21% compared to 2013, the 65% increase in the elderly population in Saray is quite remarkable. While having a rapidly growing elderly population, it also provides labor for the intensive industrial production in Çerkezköy, Çorlu, and Kapaklı in its region. Therefore, it is important to search for and discuss age-friendly and inclusive city planning steps for Saray that aim to create a more livable environment for all.

This paper examines the results of a field study and questionnaire conducted in Saray, a first for Turkey, and evaluates Saray's capacity for, age-friendly city. The findings reveal a lack of a clear vision for an age-friendly city within Saray's urban policy. Current planning documents and practices do not contain specific initiatives aimed at older adults. Nonetheless, the city's flat terrain and compact layout enhance accessibility for older citizens. Although there is no dedicated policy to encourage their involvement in governance, the municipality's focus on people-centered policies is received positively. Social engagement among older adults largely occurs within the family setting.

Keywords:

age-friendly cities; inclusive cities; 15-minutes cities

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Gender-Responsive Approaches in Post-Disaster Temporary Settlement Planning: Insights from Malatya and Adıyaman

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The earthquakes that struck southeastern Turkey on February 6, 2023, caused widespread destruction and displaced hundreds of thousands of people to temporary shelters. This study examines the applicability of the design criteria developed for the UN Women Turkey Gender-Responsive Settlement Model (GRSM).

The research evaluates temporary shelter areas in earthquake-affected cities in southeastern Turkey using a checklist based on the guiding principles of GRSM. This pilot study encompasses Adıyaman and Malatya. During the evaluation, it was determined that the guidelines need modification, as intermediate scales of assessment beyond simple yes/no responses are necessary both administratively and practically.

The study employs various data collection methods, including online surveys, field observations, unstructured interviews, and an expert consultation workshop, with content analysis applied to the gathered data. The findings will aid in developing new settlement design criteria and principles that are sensitive to local needs and prioritize gender equality.

The design criteria established by the GRSM address critical issues such as safety, accessibility, access to social services, women's participation in decision-making processes, and economic opportunities. The aim is to guide local governments and authorities in supporting sustainable settlement planning in post-disaster contexts. The cases of Malatya and Adıyaman will serve as valuable pilot models for localizing gender-responsive settlement planning.

Keywords:

Gender; Temporary Settlement; Post-disaster; Türkiye

T_07 INCLUSION (A) / 760

Neighborhood walkability for older adults and their travel — Shanghai Anshan area case study

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With the continuous increase in the aging population, ensuring the mobility of older adults contributes significantly to their physical and mental well-being as well as their social participation. The built environments in neighborhoods with the concept of healthy aging are a critical area of focus of study. The older adults heavily rely on walking as their primary mode of neighborhood travel. In a gated community, where land use tends to be highly homogeneous, walkability becomes a key factor influencing the travel behavior of older adults. A substantial body of research has been devoted to calculating neighborhood walkability indices. Facing rapid aging, the walkability indices require adjustments according to their walking speed and service needed with finer resolution.

We conducted a travel-tracking survey involving 30 older adults to obtain their travel

characteristics, such as walking speed in the Anshan area, where the proportion of elderly residents is high. We collected 378 questionnaires, which included information on older adults' socioeconomic attributes, physical health status, family responsibilities, and travel activity characteristics. Our research focused on the influence of the built environment on the number of their travel per day. The modified walkability index for older adults was compared with the traditional one, and the walkability score was calculated based on a 50 m x50 m grid. Moreover, we examined the impact of co-residence with family members and family responsibilities on the travel behavior of older adults. These factors were incorporated as explanatory variables in a regression model to validate the effectiveness of the modified walkability index.

The preliminary results indicate that older adults typically travel twice per day. They tend to combine community activities with trips related to family responsibilities, such as shopping or picking up and dropping off children. Due to their familial obligations, older women living with their spouses and offspring exhibit lower travel frequency. The impact of the modified walkability index will be examined in the paper. Enhancing the walkable environment can effectively stimulate older adults' willingness to travel and strengthen their social engagement. This study will help policymakers adjust improvement projects to build an aging-friendly old neighborhood facing the aging society.

Keywords:

Aging Society; Walkability Index; Older adults; Daily Travel; Community Planning

T_07 INCLUSION (A) / 1099

What do we mean when we talk about feminist urban planning?

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According to feminist theorists (Federici, 2017, 2019; Hollanda, 2018; Kern, 2019; Lugones, 2020) and scholars from urban disciplines (Collectiu Punt 6, 2019; Falú, 2020; Hayden, 1980; Horelli, 2017; Horelli and Damyanovic, 2019; Huning et al., 2019; Tavares, 2015), the structure and design of our cities exclude women due to highly unequal societal and non-representative power structures, as the social, political, and economic context that shape our urban planning reproduces hegemonic and hierarchical masculinities. The feminist perspective questions the placement of the male figure as the main paradigm of collective representation (Kern, 2019; Perez, 2019). The inequalities between males' and females' representativeness are perpetuated and legitimized through urban configuration, planning, and management (Muxí, 2019; Tavares, 2015). The feminist perspective on urban planning calls for a fundamental shift in values, challenging the universalist approach.

As bell hooks (2015, p.1) states, "feminism is a movement to end sexism, sexist exploitation, and oppression". Within this framework, a feminist and intersectional approach to urban planning adopts a critical stance, aiming to promote equal opportunities in accessing and experiencing urban spaces. Feminism requires a re-evaluation of urban priorities through diverse variables, perspectives, and lived experiences, and raises the question of how urban planning may benefit certain groups while harming others (Muxí, 2019).

Feminist urban planning studies imply improving access to the city for all, regardless of their socio-cultural characteristics and often argue that "planning that benefits women also benefits everyone" (e.g. Horelli, 2017; Kern, 2019; Muxí, 2022). This argument is frequently used to demonstrate the broader societal significance of feminist research and to emphasise the necessity of feminist urban planning. However, if feminist urban planning aims to achieve outcomes that benefit everyone, is it meaningful to pursue feminist research to identify universally beneficial planning strategies rather than

directly researching planning that advantages all? When we talk about feminist urban planning, what exactly are we discussing? How does it differ from good urban planning? To answer these questions, we will review relevant research publications to identify the trends and findings in feminist urban planning studies. The results will be compared with the criteria and indicators for comprehensive urban planning and spatial development developed by Horelli and Damyanovic (2019) to highlight the unique contributions of feminist planning research.

A literature search was conducted on Scopus and Web of Science with the search string: (TITLE-ABS-KEY ("feminism" OR "feminist" OR "gender equality" OR "gender-sensitive" OR "gendered spaces" OR "intersectionality")) AND (TITLE-ABS-KEY ("urban planning" OR "city planning" OR "urban design" OR "urban development" OR "public space" OR "urban policy")). In total, 1677 documents were retrieved from the two platforms. After duplicate deletion and non-English literature exclusion, 1096 potential documents are retained. Later, we will screen, categorise, and analyse the selected ones. The analysis of the selected literature consists of two parts: quantitative analysis and qualitative analysis. First, the selected literature will be categorized based on publication time, geo-cultural context, research themes, methods, and formats. The coded data will then be utilized for quantitative analysis to identify historical trends in methodologies and research subjects within the field. For qualitative analysis, abductive coding based on the criteria and indicators proposed by Horelli and Damyanovic will be applied to the content of the literature to construct an epistemological model of feminist urban planning. By examining the selected literature, this study seeks to uncover the evolving narratives, frameworks, and analytical tools that shape discussions on feminist urban planning. The findings will highlight emerging trends, conceptual approaches, criteria, and indicators, offering insights into how feminist perspectives improve urban planning studies.

Keywords:

Urban planning; Feminist urban planning; Feminist perspective

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Desiring a Gadjó City: Political Economy in Post-fascist and Post-colonial Rome

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In dialog with recent research on urban planning, race and ethnicity (e.g. Mele 2017; Beebejaun 2022; Williams 2024), in this paper I examine the planning of camps for socially disadvantaged, Eastern European Roma by the municipality of Rome from 1993 to 2020. Drawing on extensive archival, policy and interview-based research, I trace the intersections of political economy and planning narratives during each of the six waves of camp planning – 1993-1998 (i); 1998-2001 (ii); 2001-2006 (iii); 2006-2008 (iv); 2008-2013 (v); 2013-2020 (vi).

Here I detect the guiding figure of the future city that the municipal authorities have been striving for in each planning wave. This figure differs in the six planning waves, but since the mid-2000s - when political economy and urban security became the main planning principles - it crystallized as that of a “Gadjo city”. Since “Gadjo” means “non-Roma” in Romani language, I use the term “Gadjo city” to refer to a city in which there are no Romani cultural expressions. In partial disagreement with the scholarship on planning and race, I argue that the Gadjo city is not only exclusionary but also inclusionary. The municipal authorities strive for a racially purified city by both excluding Roma as self-sovereign subjects and including them as voiceless and passive subjects who are either housed in camps or assimilated into the white majority.

To explain the peculiarity of the ambivalence of inclusion and exclusion that characterizes the rationales of camps for civilians worldwide (Picker and Pasquetti 2015; Minca et al 2018), I show that camp planning in Rome is predicated on a twofold urban planning history. On the one hand, the planning of indigenous quarters in Italy-occupied Ethiopia (1936-1940) was driven by a desire for *racial segregation and exclusion*. On the other hand, the planning of Fascist new towns in central Italy (1932-1936), drew on the opposite desire for territorial reclamation (*bonifica*) and moral reeducation of white Italians (*racial inclusion*). As I show, the partial similarity between these three planning experiments - i.e. the Roma camps in Rome, the New Towns in central Italy, and the indigenous quarters in Ethiopia - is heuristic rather than coincidental. It is not limited to morphology, but signals the continuity of certain 20th century visions of the urban future in the 21st century.

The main value of this paper’s contribution arises from its relation to current research on urban planning, race and ethnicity. While this research focuses almost exclusively on Anglo-Saxon cities, where only colonialism and empire play a key role in the planning imagination (e.g. Roy 2006), my analysis opens a new window onto mainland urban Europe, where the combination of Fascist/Nazi and colonial planning legacies may be a distinctive element.

Keywords:

ethnicity; race; Rome; camps; Roma; fascism; colonialism

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T_07 INCLUSION (A) / 1137**Exploring a framework for children's participation in mobility issues and urban planning****Author:** Lotte Luykx¹**Co-authors:** Imre Keserü¹; Sara Tori¹¹ *Vrije Universiteit Brussel***Corresponding Authors:** imre.keseru@vub.be, lotte.luykx@vub.be, sara.marie.tori@vub.be

Urban environments are seldom tailored to the needs of children and young people. Through car-centric development, children's use of public spaces, opportunities for play, physical activity and social interaction became increasingly limited. This exclusion impacts their physical, socioemotional, and cognitive development. Child-friendly cities, as defined by UNICEF, prioritize children's rights and inclusion in decision-making, requiring accessible, diverse, and well-designed spaces. But despite legal frameworks supporting children's participation in urban planning, children are often excluded from designing the spaces they use most. Existing research with children's direct involvement, is mostly limited to child-centric spaces (e.g. playgrounds) and to specific groups (e.g. school-attending, able-bodied children from high-income families). Broader urban challenges such as housing or land planning, remain unaddressed. Processes are often limited to 'façade participation' (e.g. consulting or informing). Even when a meaningful contribution is required, children's ideas are easily misinterpreted or not taken seriously by decision-makers, leading to a limited impact of the process's outcome. This demonstrates the lack of adapted methods to effectively and ethically involve children in the participatory design.

This research explores a framework for co-creation with children, enabling a better understanding of its potential as a tool for inclusive urban planning and policymaking. Using a comprehensive literature review with keywords searches on Scopus and Google Scholar, relevant peer-reviewed studies were analysed. The selected studies address topics such as urban planning (e.g. public spaces, rural areas), mobility (e.g. active transport, school streets) and child-centred spaces (e.g. outdoor play, child-friendly neighbourhood). The findings identified barriers and drivers influencing children's participation.

A first finding is that granting children agency in designing the process and defining their roles, increases engagement and peer-to-peer collaboration. Flexibility in tailoring a process to a specific group enhances participation, while active listening, group-decision making, and mutual learning empowers children to contribute in a meaningful way. Prior training on the topic of participation allows for informed decision-making. Facilitators must create a "safe space" where children feel heard and can express themselves without judgement. This can be supported by training the facilitators on how to build trust and manage relations effectively.

Secondly, managing the power dynamics involved requires strategies to reduce the distance between adults and children, such as using informal language, explicitly asking opinions, and sharing personal insights. Parallely, recognition of the differences in motivation of age groups allows for the methods and materials to be adapted accordingly (e.g. gamification and creative approaches).

Thirdly, stakeholder involvement is critical to demonstrate the value of children's contributions and ease possible resistance to the process's results. And the other way around, children can learn and empathize through interaction with the local community, positioning themselves within it. Benefits from participation for children range from increased social skills, acquired knowledge on the topic to positive attitude effects.

Lastly, children generally produce more creative outcomes. Yet, the translation of children's ideas into design might be a barrier, due to misinterpretation, misunderstanding

of ideas and sometimes dismissing their input as impractical. Feedback might also be biased when the activity is grade dependent, obligatory to take part in or when responses come from a desire to please or misunderstood expectations. However, many methods lead to material-focused solutions rather than a structural transformation.

Based on these findings, recommendations for policymakers and planners to effectively and ethically co-create with children include maintaining children's agency in the process design; fostering informed decision-making; managing power dynamics with adults; involving the community; using age-appropriate methods; and effectively translating children's ideas into actionable outcomes. Practical applications of this framework aim to foster inclusive urban planning processes that value children's perspectives and create structural transformations, advancing child-friendly urban development.

Keywords:

Children's participation; Participatory Urban Planning; Inclusion; Co-creation; Mobility

T_07 INCLUSION (A) / 1219

How Spatial Factors Affect Respiratory Health in Coal Resource-based Cities: a Case-control Study in Eastern Yunnan Province, China

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Urban planning can affect respiratory health. Due to industrial and mining pollution, unique spatial structure, etc., the built environment factors of coal resource-based cities have special impact paths on respiratory health. Lung cancer is one of the cancers with the highest incidence and mortality rates worldwide. Qujing, located in the eastern part of Yunnan Province, China, is dominated by the coal mining industry. Since the survey in the 1970s, it has been the area with the highest incidence of lung cancer in China. Compared with the national average, the standardized mortality rate is 3 times that of men and 5 times that of women. Existing studies are mostly centered on the field of epidemiology, among which there are few studies on spatial influencing factors and the research indicators are single. This study aims to explore the spatial influencing factors of lung cancer in resource-based towns in eastern Yunnan and propose corresponding spatial intervention measures.

We used a case-control study based on individual data, interviewed 100 lung cancer patients and 100 healthy people in two local hospitals, and obtained individual-level influencing factors through questionnaires. Non-spatial factors such as smoking history were controlled as confounding factors; spatial influencing factors such as migration history and residential environment history were the core content of the study. On this basis, we used supervised classification methods in ENVI5.6 to identify remote sensing images from Landsat and extract pollution sources such as mining land and industrial land. Wind environment simulation was performed in Wind Perfect DX to construct the spatial relationship between residence and the location of pollution sources. Spatial statistics were performed in ArcGIS to compare the relative differences in spatial distribution between the case group and the control group. Individual matching was established according to gender and age (± 2 years) in SPSS29, and the exposure ratio in the case group and the control group was compared using a non-conditional Logistic regression model.

We found that the case group and the control group were distributed in different hot spots; Ripley's K function showed that the case group had the highest degree of aggregation at 2 km, and the control group had the highest degree of aggregation at 5 km.

The relationship between the upwind direction and downwind distance of the residence and the pollution source, as well as the ventilation conditions, are associated with an increased risk of lung cancer. Living within 600 meters of a coal mine increases the risk of disease by about 4 times, and the risk is even higher downwind of a coal mine. Living in a civil structure house for more than 30 years and using more than 100 tons of bituminous coal increases the risk of disease by about 3 times. The size and morphology of the settlement and the ventilation conditions in the houses can affect the diffusion of pollutants, although not significantly, but showing a certain trend. However, macro indicators such as NDVI, distance to roads of various levels, and land fragmentation were not significant in the study and did not show trend characteristics. Our study provides a basis for promoting the implementation of health equity planning at the meso and micro levels.

Keywords:

Resource-based cities; Lung cancer; Case-control study; Residence history; Health equity

T_07 INCLUSION (A) / 719

Access to Sanitation in Informal Settlements of Jakarta

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The research investigates the accessibility of sanitation facilities in slum areas, specifically focusing on Kampung Muka in North Jakarta. The study is motivated by the recognition that adequate sanitation is a fundamental human right and essential for public health, as emphasized by the United Nations and the World Health Organization. Despite global attention to sanitation issues, a significant portion of the population remains without access to proper facilities, leading to severe health consequences, particularly among children. This study employs a qualitative approach to explore the disparities in sanitation access among low-income urban communities. Data was collected through in-depth interviews and direct observations, involving residents of Kampung Muka, which represents a typical slum environment in Jakarta. The findings reveal that while there has been an increase in households with private toilets, a substantial number of families still lack access to basic sanitation. The research identifies two main issues contributing to this situation: a focus on physical infrastructure without addressing social dimensions and inadequate measurement criteria for sanitation access. The results indicate that many residents rely on on-site sanitation systems, such as septic tanks, which are often poorly constructed and maintained. The study highlights the importance of not only providing physical facilities but also understanding the socio-economic factors that influence sanitation practices. It concludes that improving sanitation access requires a comprehensive approach that includes education on hygiene practices and community engagement to address the underlying social barriers faced by marginalized populations. In summary, this research underscores the necessity of recognizing sanitation as a complex issue intertwined with social justice and public health, advocating for inclusive policies that ensure equitable access to sanitation for all residents in urban slums.

Keywords:

access, sanitation, informal settlement, Jakarta

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T_07 INCLUSION (A) / 1422

School and Residential Segregation in Ankara: The re-production of urban divisions

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Education is critical for understanding urban and social inequalities in Turkey. The Turkish Statistical Institute's annual report on education expenditure and poverty highlights a significant disparity: individuals in the highest income bracket spend nearly ten times more on education than those in the lowest. The statistics reveal a striking correlation between education and poverty rates; illiterate individuals face a poverty rate of 27.7%, which dramatically decreases to 7.8% for high school graduates and just 2.6% for university graduates (TurkStat, 2023). As a result, obtaining a university degree is often seen as a key to a stable and esteemed future, especially among middle and upper socio-economic classes in Turkey. This widely held belief has made education increasingly competitive. Many parents express concerns about their children facing low educational quality, insufficient language and analytical skills, and unstable social settings, especially within public schools. While parents from middle and upper-income backgrounds are generally viewed as proactive regarding their children's education, those from lower-income families are often perceived as less involved in their children's schooling (Bagci & Gizir, 2013; Ünal et al., 2010).

Studies on segregation in Turkey, on the other hand, tend to focus more on residential segregation. Although the division of cities into different social groups and its causes have received ample attention (Güvenç & Işık, 2002, Işık & Pınarcıoğlu, 2009; Ataç, 2016), the relationship between education, schools, and residential segregation is not yet fully understood. Nonetheless, education is a critical factor even in the development of urban patterns in Turkey.

Based on this backdrop, this study aims to investigate the socio-spatial relationship between the academic performance of high schools and residential segregation in education line within the Ankara metropolitan area. Ankara serves as an unexplored yet promising case for examining the relationship between education and segregation. As

the capital city of Turkey, Ankara boasts the most highly educated population and is often referred to as the educational capital. The research, therefore, seeks to answer these questions: Is there a spatial relationship between the academic performance of high schools and residential segregation in educational line in Ankara? If such a relationship exists, does it give rise to new urban divisions in the city? What is the role of public and private schools in shaping the divided structure of the city? How are residential segregation and the segregation of high schools interrelated? To address these questions, academic performance is represented by the results of the National University Entrance Examination at the high school level, while residential segregation is analyzed through the population census at the neighborhood level. By cross-referencing these two datasets and using mapping and statistical techniques, the study examines the relationship between school-based and residential-based segregation in Ankara metropolitan area.

The research reveals three core findings. First, there is a visible spatial segregation among high schools in Ankara, which correlates with academic performance, where public and private schools play a significant role in this division. Second, residential neighborhoods within Ankara are distinctly segregated based on the educational attainment of their inhabitants. Lastly, there is a clear connection between school-based segregation and residential segregation; these two phenomena are often intertwined, suggesting that Ankara is characterized by divisions related to education and the academic outcomes of its high schools. The study concludes that education serves not only as a criterion for social and economic status in Turkey but also plays an essential role in shaping patterns of segregation related to both residency and schooling, contributing to the emergence of new divisions within urban areas.

Keywords:

School segregation, residential segregation, urban divisions, Ankara

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T_07 INCLUSION (A) / 1179

Justice on the move: Behavioral interventions for inclusive and active mobility

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This paper explores the potential of behavioral interventions to drive a modal shift from unsustainable transportation modes to active mobility—walking, cycling, and wheeling—particularly with a focus on people in vulnerable situations, such as the elderly, women, children, people with disabilities, low-income groups, and their intersectionality. The research is conducted within the framework of JUST STREETS, a Horizon Europe project that supports pilot and follower cities from nine European countries in reshaping public spaces and streets to prioritize inclusivity for all.

The study applies the COM-B model (Capability, Opportunity, Motivation –Behavior), to identify key behavioral barriers faced by individuals in vulnerable situations and evaluate targeted interventions to foster active mobility as an equitable and sustainable transportation option supported by interventions aiming at changing behavior and policies enabling those as outlined by Michie et al. (2011).

Drawing from best practices across different European countries, interventions are categorized based on their ability to address specific needs, including accessibility, safety, affordability, ability, motivation, and reliability while applying the lens of the COM-B framework to understand their effectiveness in overcoming barriers to active mobility targeting the benefits and the impacts on vulnerable population. We include over 50 active mobility interventions covering diverse interventions including community-driven programs to enhance motivation, training initiatives to build capability, and infrastructural improvements that increase perceived and actual opportunities for active mobility touching upon various behavioral change determinants as emotions, beliefs, social influences and motivation.

The paper underscores the importance of integrating behavioral insights into policy-making and urban planning, highlighting strategies to empower vulnerable populations, shift travel behaviors, and ensure access to safe, affordable, and reliable transport for promoting active mobility and fostering long-term behavioral change toward inclusive, sustainable urban transport systems.

Keywords:

Active Mobility, Inclusion, COM-B Model, Accessibility, Mobility Justice, Behavioral Change

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T_07 INCLUSION (A) / 1480

Transformation of Everyday Life Practices of Urban Migrants in Rural Gallipoli Peninsula

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In response to growing planetary crises and the COVID-19 pandemic, urban-to-rural migration has emerged as a significant demographic shift, challenging traditional planning approaches and spatial justice considerations. This spatial mobility is particularly visible

in Turkey's rural areas, where improved infrastructure, remote working possibilities, and changing lifestyle preferences have accelerated urban-to-rural migration. This study examines how urban migrants transform and adapt to rural life in the villages of Gallipoli Peninsula, Turkey, where the construction of the Çanakkale Bridge in 2022 has intensified urban-rural mobilities and triggered significant socio-spatial transformations.

The research employs Lefebvre's rhythmanalysis as a theoretical framework to investigate the integration processes and everyday life practices of urban migrants through an intersectional lens. The Gallipoli Peninsula provides a unique research context due to its historical significance and protected status, which has helped preserve its rural character despite increasing urbanization pressures. Analysis of land registry data from 2012-2022 reveals a sharp increase in rural property transactions following the bridge's construction announcement, indicating emerging patterns of rural gentrification and changing land-use dynamics.

The study utilized a qualitative research methodology, combining ethnographic fieldwork conducted during winter (January 2023) and summer (August 2023) periods to capture seasonal variations in rural life. Data collection included in-depth interviews with 16 urban migrants across nine villages, representing diverse migration types (retirement, lifestyle, return migration) and settlement patterns. Participant observation was conducted through extended stays in migrant households, allowing direct experience of daily rhythms and community interactions. Additionally, informal conversations with local residents and spatial analysis of changing rural landscapes provided contextual depth to understanding the transformation processes.

The findings reveal three key dimensions of transformation in migrants' everyday practices: temporal, actional, and communal rhythms. While urban migrants transition from clock-based urban temporality to nature-based rural rhythms and develop new forms of bodily engagement through agricultural activities, their integration experiences are significantly shaped by gender. Male migrants often achieve faster social integration through traditional spaces like coffee houses, while female migrants face more complex challenges in navigating rural social norms and establishing community connections.

The study identified emerging hybrid rural communities that demonstrate both opportunities for social innovation and risks of exclusion. Urban migrants' presence is transforming traditional rural spaces through new land-use patterns, alternative agricultural practices, and changing social dynamics. This transformation sometimes leads to tensions with local residents over resource access and community participation, particularly regarding traditional agricultural practices and land enclosure.

The research reveals early signs of rural gentrification in the region, including changing property values, emerging lifestyle-oriented businesses, and new forms of spatial segregation. These changes raise important questions about spatial justice and inclusive rural development, particularly regarding access to housing and agricultural land for local communities.

This study contributes to planning literature by offering insights into how demographic shifts reshape rural spaces and social relations, while highlighting the need for inclusive planning approaches that address both newcomers' integration needs and local communities' concerns. The findings suggest that successful rural transformation requires planning interventions that promote spatial justice while preserving rural character and fostering inclusive community development. The study also emphasizes the importance of gender-sensitive planning approaches in rural areas, particularly in addressing the different integration experiences of male and female migrants.

Keywords:

urban-to-rural migration, lifestyle migration, rural integration, everyday life, rhythmanalysis

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Multiculturality in Lisbon: Migration, Integration Policies, and Urban Space

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Since migration is an urban reality, many cities are unavoidably associated with the politics of multiculturalism. However, multiculturalism refers to a variety of incomplete and everchanging political strategies and processes in different countries, calling for a rethinking of the social and spatial integration of immigrants and new ways to live together for urban planners and designers. In contemporary Portugal, where over 8% of the population is comprised of foreign nationals, reaching approximately 11% in the capital city of Lisbon, the multifaceted concept of inclusion brings out unique challenges. While Lisbon has a rich multicultural history, the city is confronted with the imperative of transforming into an inclusive space that embraces diversity. To face these challenges, Lisbon recognizes its complex socio-cultural realm and aims to achieve high standards for a city for all. For instance, in the European Council's intercultural city index (ICC), Lisbon had the first spot in 2014 and 2018 with its good innovative practices to integrate different cultures. Also, in the 2023-2027 report "Main Development Strategies" of the Lisbon City Council, there are policies indicating a participatory city underlining the citizen participation (participatory budgeting, local citizen council) and provision of open data. However, from a spatial integration perspective, the integration methods and their results, especially in public space and everyday life practices are open for a closer analysis.

Traditionally in theory and practice, integration policies focus on key aspects such as employment, housing, education, health, citizenship rights and overcoming language barriers. In Lisbon, too, policies and innovative technologies are utilized to ease migrants' integration into the bureaucratic 'system'. However, when it is about the integration of (less-privileged) migrants to urban space, where principles of social and spatial justice must be actively considered, there seem to be gaps or deficiencies in existing research and ongoing initiatives. For instance, in a recent urban regeneration program in the historical Mouraria neighborhood at the city center, the multiculturalism of the area is advertised with the slogan "visiting the world without leaving Lisbon" and followed by several urban interventions from public space regenerations to city-scale events. Despite contributing to the area's touristic attractions, these methods neither precisely address nor solve the socio-spatial needs of the foreign populations living there. Today, there are several examples of participatory design activities for public space requalifications. Still, not all the dimensions of spatial justice such as distributive, recognitional and procedural aspects are met. Moreover, as xenophobic policies persist, public spaces predominantly used by migrants have increasingly become the targets of hostile actions and police controls sparking significant public backlash and highlighting the growing urgency of this issue.

This study aims to critically analyze the ‘multiculturality’ of Lisbon and the presence of spatial integration policies for migrants in the city by examining policy documents and strategy reports. For this, case studies of recent participatory public space design projects (such as Martim Moniz Square and Almirante Reis Avenue) will be consulted to see whether integration policies are used solely as a tool to promote city’s image or as an aim to achieve inclusion, while also questioning the possible role of urbanists, planners and designers in these processes. The final objective is to open the nuanced differences between spatial integration and inclusion into urban planning and design. First findings suggest a focus on design of spaces rather than on processes, which might compromise the success of public spaces in terms of stimulating multiculturalism. Additionally, the final remarks aim to reflect on the potential role of practitioners and researchers in shaping urban spaces that promote inclusivity meeting the socio-spatial needs of diverse populations.

Keywords:

multiculturalism; public space; participatory planning and design; migration; spatial integration

T_07 INCLUSION (A) / 1451

Class polarization and housing accessibility for migrants in the Zurich urban area

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Migration flows are becoming increasingly polarized in many cities worldwide, widening the gap between vulnerable and privileged migrants and, more broadly, sharpening class differences in our cities. This division is particularly evident in highly attractive and economically competitive cities like Zurich, where the polarization of the migration configuration is becoming evident in the social geography of the urban area and in access inequalities to the housing market.

Migration and mobility studies have long uncovered that definitions and categorization of migrants/natives and foreigners/nationals are class-specific (Castles, 2010; Çağlar, 2017) and that global mobility, not unlike other global phenomena, is unequal (Söderström et al., 2013) and can be characterized both by privileges and vulnerabilities. Some authors have, therefore, pointed out the necessity to look at privileged and unprivileged migration as a continuum (Cranston and Duplan, 2022) as their interrelations have been made evident e.g., in the job market. However, to deepen and expand this argument, the urban rental housing segment still needs further investigation.

In this paper, the concept of ‘migrant’ is understood as a socio-political construct (Glick Schiller and Salazar, 2013; Wyss and Dahinden, 2022) where the border regimes of the nation-states regulate and decide who is a migrant in opposition to who is a national (Scheel and Tazzioli, 2022). In the housing market, more specifically, it is often based on individual characteristics that migrant representations and perceptions are made – sometimes regardless of the residents’ actual migratory background – like legal status, race, language, religion, or cultural norms (Semperebon et al., 2022). Among these characteristics are also indicators of economic status, such as income, profession, education level, and, more broadly, class (Ibid.).

This study challenges the assumption that all migrants face the same disadvantages and discriminations in the housing market and instead seeks to introduce a more nuanced,

class-oriented analysis. Specifically, it examines how class - understood through an intersectional framework - shapes housing access for both lower- and upper-class migrant groups in the Zurich urban area. Given Zurich's strong economic competitiveness, its increasing socioeconomic polarization, and the severity of its housing crisis, understanding the mechanisms that influence housing access is crucial.

More precisely, we ask: What are the main mechanisms in the housing access process for lower- and upper-class migrants? To answer this research question, we conducted twenty-four in-depth qualitative interviews with stakeholders and users of urban housing in Zurich to: first, study the **housing access process** (housing search, home viewing, application procedure, selection process, property allocation, and final access); second, look at both the **human** (landlords, real estates, intermediaries) and **digital factors** (platforms, documentation, background checks); third, understand their impact in terms of **housing accessibility** (housing affordability, housing and neighborhood quality and location, housing trajectories and security) for migrants by class.

Our key finding is that class -at the intersection with the migratory background - plays a prominent role in shaping human and digital interactions throughout the housing access process. Specifically, economic conditions -such as income, title, profession, and employer -significantly influence the extent to which migrants' applications are selected and their housing needs - in economic, social, and spatial terms - are met.

Why does money count the most in housing accessibility for the migrant population in the Zurich metropolitan area? We believe it is because of political responsibilities: 1. because of economic development strategies meant to attract and facilitate upper-class migrants; 2. because of profit-oriented logic in the provision and allocation of housing that privileges upper-class migrants; 3. because of inadequate provision of affordable and accessible housing for lower-class migrants.

Keywords:

Migration; polarization; housing accessibility; class; Zurich

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disciplinary research on urban vulnerability

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In contemporary society, the growing demographic of older adults and rapid urbanization make rethinking the relationship between health and the urban environment crucial (WHO, 2017). Housing quality and organization of urban spaces significantly impact older adults' physical and mental health, shaping their aging trajectories (Oswald et al., 2011). This underscores the need for innovative, inclusive housing and urban models, challenging ageist stereotypes that equate aging with assisted living (Phillipson, 2013). Aging in Place (AIP), which aims to support older adults in maintaining social connections and fostering meaningful relationships within supportive environments (WHO, 2007), could represent a paradigm shift. It offers a framework for understanding how aging trajectories lead to varying quality of life outcomes depending on residential and urban contexts by integrating perspectives on healthy aging and urban health (Lewis & Buffel, 2020; Yarker, Doran & Buffel, 2024). Psychologically, AIP focuses not only on modifying physical spaces to accommodate aging but also on the connection between urban environments and health development (WHO, 2017). Contemporary psychological research, such as the lifespan development approach (Morganti, 2024) and Stanford University's "New Map of Life" (longevity.stanford.edu), supports this perspective. Moreover, research highlights the role of residential living, as well as cultural, economic, and social structures, in promoting healthy longevity (Rosenwohl-Mack et al., 2018). Addressing the complexity of AIP requires a multidisciplinary approach in urban analysis and public policy-making. The Italian national research project "CASA" exemplifies this methodology by integrating demography, statistics, psychology, and urban planning to examine housing and urban vulnerability. Focusing on Bergamo, a medium-sized city in Italy, CASA aims to develop strategies applicable to similar urban contexts. The project investigates how urban characteristics influence aging trajectories, offering insights for creating inclusive, age-friendly environments.

The psychological perspective within the CASA project, as presented here, provides a situated understanding of place, emphasizing the dynamic individual-environment relationship (Butti & Morganti, 2024). This redefinition of AIP proposes a novel conceptualization in which contexts are defined as sets of affordances—opportunities for action (Gibson, 1977)—that shape and are shaped by individuals who are in interaction and by interacting within the contexts. This theoretical framework raises research questions concerning the influence of urban environments on healthy aging and the potential creation of barriers that increase individual's vulnerability. The analysis is underpinned by a bio-psycho-social-ecological lifespan approach, as initially conceptualized by Bronfenbrenner (1979), encompassing both individual experiences and broader systemic factors. It explores how older adults perceive and manage their housing and aging processes in relation to healthy longevity.

A comprehensive investigation into the dynamics of neighborhoods in Bergamo is being conducted, encompassing five distinct spatial regions within the city. Using a mixed-method approach, the research combines quantitative and qualitative data collection, including in-depth interviews, surveys, and focus groups, ensuring a nuanced exploration of individual-environment interactions.

Preliminary findings underscore salient themes, namely autonomy, independence, sociality, and physical health. The housing choices of participants reflect a strong desire for independence, indicating a sense of empowerment. However, it is important to note that a strong sense of place attachment can also lead to vulnerability if individuals lack awareness and responsibility for their aging processes. These findings emphasize the imperative for incorporating residents' voices into urban and housing planning. Understanding the constraints and possibilities of different environments is essential, considering the physical and mental conditions of inhabitants and the affordances available to them.

Understanding how urban spaces function as either constraints or enablers of daily life requires observing them through this lens. This analysis will facilitate a deeper under-

standing of how cities, along with their structural and relational elements, can become environments conducive to healthy aging.

Keywords:

Aging in place; age-friendly city; healthy longevity; empowerment; social inclusion

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Rethinking Social Inclusivity. The Case of Urban Villages in Delhi

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Rapid urbanization has transformed cities into vibrant yet unequal spaces, often escalating socio-spatial inequalities through commercialization, marginalization, and gentrification (Raymond et al., 2021). Marginalized communities tend to seek refuge in informal settlements like slums, squatter settlements, and urban villages, wherein exclusion manifests spatially (McCartney and Krishnamurthy, 2018). Urban villages, formerly rural settlements engulfed by expanding cities due to urban expansion and migration, stand out as distinct spaces within the urban landscape. However, today, urban villages have become a major challenge in rapidly developing nations such as China, India, and Indonesia (Banerjee, 2021). Despite their critical role in integrating rural migrants and supporting the local economy, urban villages are viewed as urban blight. High-density, mixed-use development, unorganized land use, inadequate infrastructure, substandard rental housing typifies these areas, while their exclusion from urban planning frameworks exacerbates the socio-spatial divide (Al, 2014, Zhang et al., 2003, Thinh et al., 2024).

It can be argued that urban villages become marginalized entities due to biases in centralized planning, which prioritizes economic gains over community needs. Their exclusion from the policy landscape increased the potential of gentrification, displacing both indigenous villagers and rural migrants while intensifying socio-economic disparities. To confirm this hypothesis, this study undertakes a qualitative analysis of zoning and planning policies in Delhi’s National Capital Territory (NCT), India, with a focus on Hauz Khas and Zamrudpur urban villages. Through a case study approach, the study examines how

centralized planning has accelerated Zamrudpur's marginalization and fuelled gentrification in Hauz Khas. To better understand the policies surrounding urban villages, data was sourced from publicly available policy and planning documents like master plans, government committee reports, and survey reports.

A fundamental planning gap in Delhi's urban villages is the lack of legal documentation and fuzzy land ownership records, which impedes efficient planning and policymaking. The British-era land management system, introduced in 1908, which separated agrarian land from village habitation by a "lal dora" (red-tape boundary), has left urban villages in a governance vacuum. On the institutional front, numerous bodies, including the Central Government, State, and Municipality, with overlapping duties hinders decision-making. Further, the study reveals that the failure to integrate urban villages into formal city planning leaves them either vulnerable to marginalization or gentrification.

The findings in Hauz Khas corroborate the concept that gentrification is driven by centralized planning that prioritizes economic returns and infrastructure upgrades. In 1962, Hauz Khas was designated as an "urban village" by the Delhi Development Authority (DDA), exempting it from municipal by-laws and zoning regulations. This exemption enabled for new residential, industrial, and retail development, converting rural land into high-density commercial spaces with restaurants and boutiques (Ramesh et al., 2023). This process altered the socio-economic fabric of Hauz Khas, driving long-term residents, especially rural migrants, to the periphery. Furthermore, minimal monitoring and irregular development contributed to building congestion, accentuating the socio-economic disparity (Ramesh et al., 2023).

Zamrudpur, on the contrary, has become increasingly marginalized due to a lack of focused policies. Here, urban planning has failed to accommodate critical infrastructure improvements, resulting in prolonged socio-spatial and economic hardship. The lack of sufficient public services, insufficient housing, and limited access to opportunities has made Zamrudpur vulnerable, inhibiting their integration into the larger urban fabric and escalating existing social inequalities.

Overall, the findings highlight how a lack of effective and inadequate planning regulations contributes to uneven and unequal development, with villages like Hauz Khas experiencing gentrification and Zamrudpur remaining overlooked. This reinforces the need for more inclusive, context-sensitive participatory planning policies that promote both socially cohesive urban development and community preservation.

Keywords:

Social Inclusion; Socio-spatial disparities; Urban villages; Centralized planning; Policy gaps

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T_07 INCLUSION (A) / 498**Navigating Host Cities as Muslim Women Refugees; the role and potential of socio- spatial Integration****Author:** Reem Elnady¹¹ *University of West of England- UWE Bristol***Corresponding Author:** reem2.elnady@live.uwe.ac.uk

Muslim women refugees, particularly those from conflict-affected regions such as Syria, Afghanistan, Iraq, and Somalia, face unique and intersecting barriers related to gender, religion, ethnicity, and refugee status. These challenges significantly impact their spatial integration in host cities, shaping their perceptions of belonging and access to resources within urban environments. The visibility of religious attire, such as hijabs, often subjects these women to surveillance, discrimination, and harassment, limiting their mobility and access to essential services, and further hindering their ability to engage with the host society (Husain, 2019; Casey, 2018; Galonnier, 2015).

While the formal refugee status under international law defines a refugee as someone who has fled their home country due to a well-founded fear of persecution, this research takes a broader, more inclusive approach, focusing on women with refugee-like experiences. These women may not always meet the strict legal definition of a refugee, yet their lived experiences of displacement, trauma, and exclusion are similar to those of formally recognized refugees. As highlighted in recent scholarship, the rigid legal framework often overlooks individuals whose circumstances do not fit neatly within the refugee category but who still require protection and support (Parekh, 2020). Many Muslim women, for instance, arrive in host countries on spouse or dependent visas, yet their experiences of forced migration mirror those of refugees. They face many of the same challenges—economic hardship, social isolation, and limited access to services—despite lacking formal refugee status.

This study, centered on Bristol, UK, examines how socio-spatial elements of the built environment—such as housing, transportation, public spaces, and access to services—impact the integration experiences of Muslim women refugees and those with refugee-like experiences. By prioritizing the lived experiences of these women over formal definitions of refugee status, the research amplifies their voices through qualitative methods, including feminist grounded theory, focus groups, and photovoice. Therefore, the research offers participants a powerful means to document and express their daily lives, shedding light on experiences of exclusion, resilience, and the complexities of navigating urban spaces as marginalized individuals (McClean et al., 2019; Harper, 2015; Bignante, 2010).

Through thematic analysis, the study will identify key social and spatial barriers these women face, while also uncovering opportunities for integration and empowerment. It will explore how intersecting identities—such as religion, gender, ethnicity, and refugee status—shape these women's experiences of space, belonging, and mobility within the urban environment (Muhanna-Matar, 2022; Yuval-Davis, 2006; Ruddick, 1996; Crenshaw, 1991). Furthermore, the research will investigate how these women navigate systemic barriers to social inclusion, negotiate their identities within a host society, and face challenges in accessing vital services.

By identifying the socio-spatial challenges and opportunities for inclusion, the study will provide practical recommendations for urban planning and policy adjustments to better address the needs of Muslim women refugees and those with refugee-like experiences. These recommendations will aim to enhance their sense of belonging, foster social inclusion, and improve their access to resources, creating more equitable and welcoming urban spaces.

Ultimately, this research aspires to inform inclusive urban planning practices that recognize the complex, intersecting needs of Muslim women refugees. It will contribute to

the development of urban environments where these women can navigate spaces with safety and dignity, access resources equitably, and rebuild their lives with autonomy and resilience.

Keywords:

Inclusion; Spatial Integration; Muslim Women Refugees; host cities; Intersectionality

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T_07 INCLUSION (A) / 1672

Urban Form and Social Exclusion: A Spatial Perspective on Residential Segregation in Czech Cities

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Urban residential segregation is a widely studied concept, broadly defined as the spatial separation of social and economic groups within cities. This phenomenon stems from historical, economic, political, and cultural factors, varying in form across different regions (Dadashpoor & Keshavarzi, 2024). Generally, it manifests in two ways: the concentration of affluent residents in gated communities and marginalising disadvantaged populations into socially excluded areas. Social segregation aggravates social inequalities, deteriorates living conditions, and hinders integration and social mobility (Musterd, 2020). All of these challenges also highlight the issue of spatial segregation in Czech planning practice.

Residential segregation is often analysed through concentrations of residents sharing similar sociodemographic characteristics (Sýkora, 2015). However, it also has distinct spatial patterns that differ worldwide. While segregation is often more visible in urban areas, it does not happen exclusively in cities. In the Czech Republic, "socially excluded locality" refers to isolated residential areas inhabited by economically disadvantaged groups, though its definition remains fluid and difficult to pin down (Toušek et al., 2018).

Over the past few decades, various approaches have been proposed by architects and urban planners looking for a link between the built environment and the socio-economic characteristics of the inhabitants. These include linking configurational

theories (Vaughan et al., 2005), the topological properties of the street network (Knaap & Rey, 2024) and the composition and importance of public space (Madanipour, 2011).

This paper proposes a framework for examining urban segregation through the lens of spatial connectivity and accessibility of the built environment within the Czech context. The pivotal research question examines whether the accessibility of local amenities, public transportation, and the connectivity of the urban structure influence the level of residential segregation in three Czech regional cities.

The analysis uses a quantitative, descriptive approach to a case study of three comparable cities in the Czech Republic. A key methodology that the research builds on is the identification of localities with a high concentration of socially excluded residents based on available data on recipients of the subsistence allowance (Sýkora, 2015).

This article examines the relationship between socio-economic marginalisation and spatial disadvantage in urban settlements, with a particular focus on accessibility and physical urban form. It also includes the concept of spatial justice, which refers to equal access to services, resources, and opportunities (Soja, 2010).

The analysis of the local amenities and public transport accessibility within the whole settlement is carried out based on the standard and methodology applicable to the conditions of spatial planning in the Czech Republic. The aim is to determine whether socioeconomically excluded inhabitants have limited access to key amenities and whether they are located in less accessible areas regarding transport services. This information provides an essential insight into the spatial disadvantage of the localities.

A detailed description of the urban fabric is performed using configurational theories and methods. Connectivity will be assessed using two main groups of metrics: network metrics and morphological metrics. Network metrics evaluate the ability of urban networks to facilitate human movement. The morphological metrics evaluate the extent to which the urban form restricts movement (Felicciotti, Romice and Porta, 2016; Dovey, Pafka and Ristic, 2017). The resulting aggregated data will be analysed using regression modelling to assess the relationship between spatial characteristics and the concentration of socially excluded residents.

The results contribute to a deeper understanding of the connection of urban form with social segregation and could provide valuable inputs in the search for inclusion-oriented policy tools.

Keywords:

Residential Segregation; Urban Form; Spatial Inequality; Urban Design

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T_07 INCLUSION (A) / 1627

Measurement of In-Situ Urbanization Level and Analysis of Influencing Factors in the Suzhou - Wuxi - Changzhou Metropolitan Area in China

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Sharing economic development achievements is crucial for urban inclusivity. As globalization progresses and the economy grows, urbanization has become a vital indicator for assessing the socio-economic development level of a region. As an inclusive urbanization model, in-situ urbanization centers on the interests and demands of the rural population, a disadvantaged group. It can reduce the migration costs and efficiently extend the scope of public welfare to a broader demographic. As a result, the rural population can actively participate in urban co-construction while also enjoying the fruits of urban development. Nevertheless, in China, the transition of the rural population into urban residents has not been smooth sailing. The rural population in cities not only lacks social welfare and material security, but also has no sense of identity and belonging, showing a tendency to be marginalized. Therefore, research on in-situ urbanization of the population is timely and significant. Presently, the Suzhou - Wuxi - Changzhou metropolitan area in China has basically entered the late phase of urbanization. What stands out is that in-situ urbanization, as the key mode of its urbanization, has been highly productive. It results in a slight difference between the urbanization rates of the permanent and registered populations. Simultaneously, the boundary of the urban-rural dual structure becomes blurred.

This study aims to measure the in-situ urbanization level of the population in the Suzhou - Wuxi - Changzhou metropolitan area and explore its influencing factors. Firstly, in conjunction with the national statistical data, the study analyzes the current situation and characteristics of rural population mobility. Then, according to different in-situ urbanization stages, the study determines four primary level measurement indicators from the participants' perspective: the urbanization of economic livelihood, social participation, personal qualities, and consciousness behavior. Each has three sub-indicators. Thereafter, the Equal-Weight Weighting Method is utilized to construct a citizenization level measurement model. Secondly, the Grounded Theory is applied to formulate a model of the influencing factors for the in-situ urbanization of the population. Meanwhile, the Structural Equation Model tests hypotheses and model validity on collected data, exploring the intensity and direction of the various factors. Finally, a comparative analysis of the implemented strategies is performed, aiming to help local governments formulate targeted and differentiated in-situ urbanization policies for the population.

The research results demonstrate that

1 In the Suzhou - Wuxi - Changzhou metropolitan area, the rural population's migration

is infrequent and mostly local or near - by. After in - situ urbanization, the rural population has witnessed multifaceted enhancements. However, they are still concentrated in low - end urban jobs and have low acceptance of their citizen status.

□2□Among the influencing factors, the mismatch between the uniform policy supply and in - situ urbanization demand is the biggest hindrance. In addition, the rural population choose in-situ urbanization mainly to maximize personal comparative interests, especially when rural employment, income, social security, and local attachment outweigh urban equivalents.

□3□In response to these issues, the research suggests strategies like reforming the household registration system, perfecting the land system, strengthening social security, enhancing human capital and optimizing public services. These aim to transform the production, living, and residential patterns of the rural population, ensuring their equitable, all - around and sustainable development.

This study deeply grasped the complexity of in - situ urbanization and the rural population's true perspectives and needs. It offers a more viable development path for breaking the urban - rural divide, promoting balanced resource allocation, and enabling all to share urban development dividends.

Keywords:

metropolitan area; in-situ urbanization; rural population; achievement sharing

T_07 INCLUSION (A) / 1649

The Urban Factor in Creatives' Migration Motivation: The case of High-Skilled Turkish Migrants to the Netherlands

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Migration, as a search for the better, has to be considered as an important element of human survival process. More than ever, in an age of planetary crisis migration gained multiple meanings and importance. Resource depletion, wars and disasters, social and economic injustices, problems of security and quality of life can be mentioned as some of the major research areas.

As a reflection of several factors related to planetary crisis, in recent years, there has been a significant increase in the international mobility of highly skilled individuals from Türkiye to European countries, particularly the Netherlands. Although it is hard to mention a definite number related to this migration process, according to Statistics Netherlands (CBS), the Turkish-Dutch community has increased to more than 170 thousand people between 1996 and 2022 and researches indicate that this increase is boosted with the recent migration process of creative individuals and their families. There exist very few researches conducted on this subject but it is generally assumed that political reasons, social and economic expectations together with individual and family preferences play crucial roles in this migration process.

This study has been conducted to consolidate some assumptions mentioned above, but more importantly, to reveal and discuss the “urban factor” shaping the locational preferences of highly skilled individuals that has decided to move from Türkiye to the Netherlands. Using a qualitative research methodology, the study analyses the mobility motivations and locational preferences of highly skilled Turkish migrants through a comprehensive literature review and semi-structured online surveys. By utilising social media and email groups of Turkish creatives living in different parts of the Netherlands, we have obtained 198 number of completed forms. Answers to 7 number of open ended

and 53 number of Likert Scale questions have been analysed on the basis of two factors (non-spatial and spatial). Although non-spatial factors such as economic opportunities, political, social reasons play a crucial role in mobility decisions, the research focuses on the impact of spatial factors, including public facilities, infrastructure, transportation, spatial quality and cost of living. By contributing to ongoing debates on talent migration and urban competitiveness, this research aims to offer new insights into how cities can attract and retain highly skilled human capital and discuss what kind of new planning mechanisms have to be created for attracting, integrating and harmonising migrated populations.

Findings indicate that spatial factors play a decisive role in the mobility patterns of highly skilled individuals. According to participants' responses, the primary factor influencing mobility decisions (much more significantly than economic, social, and personal reasons) is living conditions such as accessible transportation options, diversity in urban functions, spatial quality, variety of public facilities. Following living conditions, non-spatial factors (like economic, social, political and personal reasons) also attracts attention. Additionally, spatial factors were found to have almost the same level of influence on mobility decisions as non-spatial factors. Spatial factors were found to be nearly as important as economic, social, and personal reasons in return mobility decisions. This study highlights the need for cities to enhance their attractiveness through a holistic approach to urban design and policy-making. Prioritizing spatial policies that improve quality of life is essential for creating competitive, inclusive, and livable cities.

We believe that our research will enrich the discussions on planetary crisis and transformative potential of planning by bringing a very up-to-date discussion on the movement of creative class from Türkiye to the Netherlands. Discussion reflecting the spatial and non-spatial factors related to urban life may suit well in the Track 7: Inclusion.

Keywords:

High-Skilled Migration, Spatial Determinants, Urban Competitiveness, Locational Preferences, Talent Attraction

T_07 INCLUSION (A) / 1547

A Bibliometric Analysis on the Relationship between Migration and Urban Design

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The study was carried out in order to reveal how migration is discussed in the urban design literature and in which contexts it is addressed. Migration is a concept that significantly affects space and social life in today's cities. This population movement, which started to increase in the second half of the last century, has accelerated even more in this century and has become observed on a global scale. According to the International Organization for Migration's World Migration Report 2020 (World Migration Report 2020 (Turkish): Chapter 2, no date), the number of international migrants has reached approximately 272 million people, 3.5 percent of the world population. Increasing migration trends cause different problems for different social groups. The issue of migration has therefore become even more critical for a significant number of people groups. This effect leads to significant changes in administrative, legal, social, spatial, economic, cultural and political fields at the national level for both receiving and sending countries. The impact of migration on the city and its relationality with the city are generally addressed through policies in the literature. However, studies focusing on the effects of migration at regional and urban scales are the majority. Urban design, on the other

hand, is among the subjects that are addressed in a limited way in the field of migration. It is a fact that urban design decisions can positively or negatively affect the lives of migrants, reinforcing and furthering social divisions as well as overcoming them. Therefore, it is obvious that the situation of migrants and migration impacts should be taken into account in design processes (Tuohy and Talen, 2017). This study, which is carried out with the bibliometric analysis method, focuses on understanding on which topics this limited production is realised. Thus, how the literature on the relationship between migration and urban design has been shaped has been revealed and literature gaps in important topics have been identified.

In this study, how the phenomenon of migration is handled in the field of urbanism and urban design in particular is analysed through conceptual relationships. Bibliometric analysis method was used to analyse the research topics on migration in urbanism and urban design. The bibliometric analysis method enables the evaluation of publications by individuals or institutions within a specific field, time period, and region, as well as their interrelationships. Scopus, ULAKBIM TR Dizin and DergiPark databases were used as the data set for the research. In this way, it has been revealed how migration-city planning and migration-urban design debates are shaped both in the world and in Turkey. As a result of the analysis, it has been observed that the concept of migration is mostly addressed in the literature with issues such as 'housing', 'urbanization', 'gentrification', 'social sustainability', 'accessibility', 'gated communities', 'segregation in settlements'. However, it is also associated with the concept of 'integration', albeit with a low frequency. In Turkey, on the other hand, it is seen that the concept of migration is addressed with more limited topics in the context of urban design. It has been seen that it has been handled in relation to issues such as 'urban transformation' and 'slumism', which are generally related to housing. In addition, studies on 'adaptation' and 'cultural adaptation' are quite limited. In this sense, it has been observed that the issue of migration has not been sufficiently addressed in urban planning and urban design in Turkey, which is both an immigration-receiving and an immigration-giving country. One of the expected effects is that the results can be a guide for studies focusing on the relationship between migration and urban design.

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Keywords:

Migration; Urban design; Urban planning

T_07 INCLUSION (A) / 631

Designing Resilient Campuses as Urban Microcosms: Strategies and Interventions for Addressing Vulnerable Users' Needs Amid Climate Change Risks

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Climate change risks affect various aspects of urban life - social, cultural, spatial, or their intersections. How the built environment is conceived and designed affects how people live, work, and recreate and, at the same time, how people respond to risks. Such risks, like urban heat island effects (UHIs), flooding, etc., threaten urban community resilience

and increase vulnerability potentials. Research indicates that vulnerable segments of society tend to be disproportionately affected by these phenomena (IPBES, 2019). Integrating inclusive design approaches for building resilient urban spaces to such risks ought to not only enhance the capacity to accommodate climate change risks but also promote health and well-being for all, especially vulnerable users.

In this paper, resilient design and strategic responses are jointly investigated using the university campus as a microcosm (Goloshubin & Pavlova, 2022)—a quasi-closed but scalable urban system. In this context, the Campus acts as an urban lab for studying how the city's-built environment can be designed to reinforce its resilience against climate risks while maintaining and promoting users' health and well-being.

This study revolves around three main axes. Firstly, it identifies campus vulnerable users and their unique needs (e.g., refuge or restorativeness) to guide resilient policy-making and healthy design interventions. Introverts, for instance, a less visible/researched but equally significant group, are highly susceptible to mental health challenges, often linked to physical activity and academic performance. The second step was to investigate the Campus' built environment as per its' spatial composition. Six family groups of elements emerged –transitional, assembly, orienting, structural, configurational, and boundary—which respond to socio-spatial aspects and different user needs. Finally, the study discusses which aspects are to be prominently affected by climate change risks and, therefore, what design interventions and resilient responses need to be prioritized with a focus, specifically, on the vulnerable users' needs identified and the spatial composition per case. The ultimate objective of the three axes is to create bridges between healthy campus design strategies and resilient planning.

The research develops a set of principles for resilient and inclusive campus design, addressing climate change risks through a conceptual framework that prioritizes 1. accessibility, 2. adaptability, and 3. inclusivity. The results highlight the profound impact of campus design on users' mental health, physical activity, and campus resilient performance (focusing on and including vulnerable groups). These three elements are intricately interrelated, forming a continuous feedback loop: an inclusive and resilient campus environment promotes mental well-being by fostering a sense of safety, belonging, and support; this, in turn, encourages physical activity through accessible and inviting spaces, which enhances cognitive and emotional functioning. Ultimately, the sense of belonging and attachment inspires users to become involved in (re-)creating resilient and cohesive spaces, which can be continually redesigned and adapted to accommodate the necessary shifts required to cope with the impacts of climate change. This loop exemplifies how campus design can create a self-sustaining system of resilience and well-being, serving as a model for urban spaces in a climate-vulnerable world.

Keywords:

social vulnerability; urban design; university campus; climate change risks; inclusivity

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T_07 INCLUSION (A) / 1566

Educational Poverty and Experiential Education to Empower Youth in the Community Planning Process

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A recent study conducted by ‘Save the Children’ identifies the scarcity of childcare services and the inadequate quality of educational offerings as the main causes of educational poverty, emphasizing how this phenomenon is closely linked to the level of material poverty in which families live.

This issue is particularly evident in Palermo (Sicily, Italy), where disparities are especially pronounced. Like many Southern European cities, Palermo sits at the intersection of globalization and deeply rooted inequalities. Here, uneven access to educational and social opportunities significantly shapes young people’s futures. In 2019, 22.4% of young Sicilians left school without obtaining a diploma or professional qualification—nearly 10 percentage points above the national average, even before the exacerbating effects of the pandemic (Osservatorio #conibambini).

Starting from these premises, this contribution explores how experiential education and Learning by Experience (Smith & Knapp, 2011) workshops, using embodied and visual methods, can foster critical spatial thinking (Dewey, 1958, 2004; Bleazby, 2012; Sandercock, 2002) among youth, transforming them from passive participants into active agents of urban and social change.

By examining the ongoing case of the Comunità Educante (Educating Community) in the Capo neighborhood—an area precariously balanced between degradation and touristification—we investigate how diverse actors, including associations, a theater, a library, a school, and the university, collaborate to combat educational poverty and early school leaving. Their efforts aim to establish a permanent educational hub and co-design a shared patto educativo (educational pact) for local youth, actively involving families in the process.

In this ongoing initiative, which merges radical pedagogy, participatory action research, and community planning, experiential education serves as a methodology for constructing knowledge, developing skills, and clarifying values by engaging learners in direct experiences and structured reflection. Utilizing experience-based learning and creative methods in urban research and planning not only enhances participation and engagement but also amplifies marginalized voices often excluded from decision-making processes. Furthermore, by integrating non-formal, sensory-driven experiences into spatial exploration, this approach strengthens cognitive, socio-emotional, and multisensory skills, ultimately stimulating new ways of perceiving, imagining, and shaping more just and inclusive cities. The results achieved so far contribute to the development of a collaborative methodology that deconstruct participatory knowledge processes concerning urban space, fosters critical subjectivity, and strengthens relational ties.

Education emerges as a vital and irreplaceable catalyst for social change and community empowerment, serving as a vehicle for envisioning future urban and social transformations within the neighborhood and beyond.

Keywords:

Educational Poverty; Youth Empowerment; Critical Spatial Thinking; Inclusion.

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T_07 INCLUSION (A) / 1676

Understanding the socio-spatial transformation through the lens of diversity: Istanbul Kurtuluş

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In the current era of rapid migration, it is stated that one out of 30 people is on the move, and the proportion of the population living in cities will increase to 66% in 2050 (IOM, 2024). Migration corridors have started to take shape in the last 30 years due to neoliberal economic policies, war, displacement and climate crisis. Turkey is located between important migration corridors such as Syria-Turkey and Turkey-Germany.

In the 2000s, there has been a diversity turn in migration studies. The recognition that countless ethnic groups now live together in cities (Berg and Sigona, 2015), that different factors beyond ethnicity, such as class, gender, age have become determinants in the formation of the dynamics of social life (Vertovec, 2007), and that all these practices directly affect the shaping of space (Berg and Sigona, 2015) has gained importance. Zapata-Barrero, Caponio and Scholten (2017) talk about the local turn, where the socio-spatial correspondence of diversity is understood locally in neighborhoods. In cities, the everyday negotiation of differences takes place at the micro level, so these practices are shaped by and shape space (Amin, 2002; Gidley, 2013; Nowicka and Vertovec, 2013; Wessendorf, 2015).

Turkey is not only located between important migration corridors, but also receives migration from different countries due to its location. Istanbul is the city where this demand is the highest. In 2024, 1 million 87 thousand migrants are living in Istanbul, which is about 7% of the population. Şişli and Beyoğlu districts appear as diverse districts where approximately 30 thousand migrants from different countries, who only have residence permits, live (TUIK, 2023). Kurtuluş, which is located at the intersection of the two districts, is a place that maintains its residential character, unlike other districts in the city center.

Differentiated from other parts of the city with dominant immigrant groups by its diversity, Kurtuluş is also a place where differences have historically continued to coexist. Greek immigrants settled in this neighborhood during the Ottoman period, and Armenians started to live there in the early 20th century. Afterwards, the neighborhood underwent a significant demographic transformation as some of the non-Muslims were forced to leave Turkey. After the 1980s, Kurtuluş was already inhabited by different groups, but as Turkey became a part of international migration networks in the 1990s, the neighborhood also attracted international migrants. After the 2000s, a significant part of the effects of the dynamic human mobility around Turkey, both due to geographical proximity and global reasons, can also be observed in Kurtuluş. Understanding the impact of a diverse neighborhood, on socio-spatial transformation is important for developing planning policies at different scales and for discussions on an inclusive planning approach.

In this context, the research aims to analyze the socio-spatial transformation of Kurtuluş neighborhood in the last 35 years. A mixed methodology was used, including the 'trans-ethnography' method of migration studies (Hall, 2016), spatial analysis techniques of the planning discipline, and interviews to understand the neighborhood. Spatial transformations were identified through satellite and street images from different years, the change of international networks established through the transformation of local workplaces was mapped trans-ethnographically, and interviews were conducted with 15 residents and migrants from different social backgrounds.

Following the fieldwork, three spatial transformations that are directly influenced by the differentiating actors of diversity and this shaped social fabric were identified. The first of these is the transformation of housing forms and use, the second is the transformation of public space and urban gaps, and the third is the transformation of sectors and workplaces. These forms of spatial transformation shaped by diversity offer concrete findings for policy makers.

Keywords:

diversity; socio-spatial transformation; local turn

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T_07 INCLUSION (A) / 380

Success in inclusion? How do policymakers in Antwerp, Rotterdam, and Gothenburg evaluate inclusive city policies?

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This study investigates how policymakers evaluate the success of inclusive city policies, which aim to reduce urban disparities and foster equal opportunities across social, economic, spatial, environmental, and political dimensions. Despite their widespread adoption, many initiatives fall short of bridging the gap between ambitious goals and tangible outcomes. For instance, the Safer Cities Initiative has been criticized for deepening exclusion rather than fostering inclusion. Current evaluation methods, such as city rankings and crowd mapping, often fail to capture the nuanced interplay of quantitative and qualitative factors, while conflicting stakeholder expectations further complicate assessments. This highlights the need for more comprehensive and context-sensitive evaluation frameworks.

To address these challenges, this research explores inclusive policy evaluation in Antwerp, Rotterdam, and Gothenburg through a multidimensional framework encompassing process, programmatic, and political success. Drawing on 27 interviews with policymakers and supplementary secondary data, the findings suggest that while traditional tools like city indices and rankings provide insights into urban performance, they are often disconnected from real-world practices and struggle to measure the nuanced impacts of inclusive policies. Key dimensions of policy success reveal interrelated challenges: process success, requiring fair decision-making and broad participation, is frequently undervalued in evaluations; programmatic success often prioritizes measurable economic and spatial outcomes, neglecting the complexity of social inclusion; and political success, essential for sustaining and scaling policies, is frequently undermined by power struggles and political resistance. Furthermore, regional or externally funded initiatives tend to emphasize procedural compliance over substantive social outcomes, limiting their potential to meet inclusive policy goals.

Ultimately, the success of inclusive policies depends not only on visible outcomes but also on fostering inclusive processes, sustaining political commitment, and addressing

diverse societal needs. By moving beyond binary judgments of success or failure, it offers practical insights for developing more effective and adaptive approaches to inclusive policy evaluation.

Keywords:

Inclusive city; Policy evaluation; Policy success; Inclusive participation

T_07 INCLUSION (A) / 1713

Judicialization of Urban Planning and its Outcomes for Urban Planning and Democracy: A Critical Analysis of the Turkish Context

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Urban spatial interventions of central and local governments in Türkiye's cities in the form of master plans, plan amendments and piecemeal profit-driven initiatives have increasingly become subject to lawsuits in the past few decades. The two institutional actors that are at the center of this process are the Chambers of City Planners and the Chambers of Architects, which are the leading professional bodies having officially recognized authority over controlling the practices in the fields of urban planning and architecture, respectively. The article focuses on the Chamber of City Planners that enacts this legal authority in two ways; firstly, through conducting a professional audit to control whether the urban plans and projects are in line with the principles of the profession and secondly, by filing lawsuits against the plans and projects which violate the basic principles of the profession, such as the protection of the public interest, plan unity and plan hierarchy. These lawsuits are highly influential in the practice of urban planning leading to its increasing exposure to judicial overview and decisions, excluding planners, elected officials and urban citizens. In this article, to define and explain this exposure, we use the term judicialization and judicialization of urban planning.

The concept of judicialization is originally used as judicialization of politics at the intersection of political science and legal studies. Accordingly, it is 'the ever-accelerating reliance on courts and judicial means for addressing core moral predicaments, public policy questions, and political controversies' (Hirschl, 2006). In this respect, judicialization refers to a process in which issues that cannot be resolved through the governmental and societal regulations become disputes and brought to the courts. It is also defined as legal and judicial mediations and arbitrations in urban social and political conflicts (Mehmood and Cousins, 2022). Judicialization is a relatively new concept in urban studies and planning and not received adequate research attention yet, despite its rising impact on the implementation of urban development policies and plans, particularly in the cities of the global South. Therefore, it needs further elaboration with national and local case studies and the article provides an analytical perspective in the case of Türkiye in that respect. We argue in the article that, judicialization in policy areas related to urban development have dramatic consequences for today and the future of cities and urban democracy. We put forward original research evidence based on in-depth semi-structured interviews with the representatives of the Chamber of City Planners, Ankara Branch (hereafter the Chamber). In addition to that, we utilize Chamber's activity reports where the lawsuits filed by the Chamber are presented. Building on the findings from interviews and reports, we first define the types of spatial interventions that have become subject to a lawsuit, the similarities and differences in between these types in terms of number, rationale, purpose and result. Secondly, building on a critical assessment of the research evidence, we focus on the consequences of the judicialization of urban politics and planning in Ankara. We argue that, judicialization of urban planning occurs owing to the democratic deficit in urban policy making, and that it results in a pseudo-democratization by

containing urban conflicts into court rooms and thereby excluding actors and local communities outside of it. It also creates ambiguities in the production of urban space by causing long delays in the realization of plans having further social and spatial consequences. We conclude with a call for a future research agenda and a broader public discussion over the meaning and the consequences of judicialization of urban planning for planning itself, for urban space and urban democracy.

Keywords:

judicialization of urban planning; pseudo-democracy; urban conflicts; exclusion

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T_07 INCLUSION (A) / 1718

Where She Thrives: Spatial Resources for Female-Led Venture Growth

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Entrepreneurial activities are embedded in space (Reuschke et al., 2015; Welter, 2011; Wright & Stigliani, 2013), and for women in particular, these activities are often deeply intertwined with local communities, networks and available spatial resources at the neighborhood level (Ekinsmyth, 2011; Hanson, 2003, 2009). Space embeddedness is crucial for women's personal and professional support and affects the scalability and sustainability of their businesses (Brush et al., 2002; Brush et al., 2009). However, entrepreneurship studies have generally unremarked the role of the neighborhoods where female entrepreneurs operate, focusing primarily on employment type and gender division of labor or regional and/or urban dynamics. Literature in Urban Studies and Regional Studies partially filled this gap, showing that spatial segmentation and sectoral segmentation negatively influence the ownership and growth of women-led businesses in non-feminized professions and sectors.

Still, the location decision is shaped by the interaction of spatial and institutional contexts. Institutional factors push women towards particular spaces, which in turn influences the nature and development of their entrepreneurial activities. Understanding these dynamics is key to appreciating how space affects women entrepreneurs' opportunities and outcomes.

In this study, we combine literature in Entrepreneurship Studies with Urban Studies to understand whether and how the neighborhoods where female entrepreneurs operate influence their ventures' growth. We argue that the surroundings of the workplaces where female entrepreneurs operate offer resources, structure, and boundaries for women's everyday work and personal lives. This recalls previous studies investigating space-time constraints in terms of opportunities to which workers and entrepreneurs are potentially exposed. Therefore, we aim to answer the question: Which spatial resources in the surroundings of female-led ventures are conducive to their growth? What boundary conditions influence this relationship?

In the empirical part of the paper, we employ a geo-coded firm-level dataset on Italian

entrepreneurial ventures in which each venture is associated with a surrounding area of 1 square kilometer. This dataset contains information on ventures' features and the spatial resources of their surroundings (e.g., childcare facilities, networking spaces, walkable areas, etc.) retrieved from multiple sources such as the Italian Registry of Firms, the ORBIS dataset, Corine Land Cover, the National Statistical Office, and OpenStreetMap. Aligning with literature which has shown that women have different spatial requirements compared to men to balance their work and personal lives effectively (Burchell et al., 2020), we find that when the surroundings of female-led ventures have spatial resources that facilitate both work-related and life-related needs (e.g., childcare facilities, networking spaces, walkable areas, etc.), then female-led ventures can achieve superior performances.

Our results offer insights for policymakers willing to promote female entrepreneurship and urban planners aiming to design inclusive and equitable cities. By emphasizing the critical role of spatial resources in shaping entrepreneurial success, this study advances scholarly debate and offers an interdisciplinary perspective that bridges Entrepreneurship Studies with Urban Studies, highlighting the potential of spatial strategies for fostering entrepreneurship in urban environments.

Keywords:

Female Entrepreneurship; Spatial Resources; Neighborhoods; Urban Design; Work-Life Balance

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T.07 INCLUSION (A) / 931

Coexistence of Inclusion and Prejudice: The Formation of Social Capital and Integration of North Korean Defectors in South Korea

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As of December 2023, 34,078 North Korean defectors had entered South Korea, with more than 1,000 arrivals annually until 2019. The South Korean government, under the

"Act on the Protection and Settlement Support of North Korean Defectors," provides comprehensive settlement assistance, including education, employment support, medical care, and housing. However, approximately half of North Korean defectors who have lived in South Korea for over a year suffer from mild to severe depression, with loneliness identified as one of the main contributing factors.

This study examines the development of social capital among North Korean defectors and suggests strategies to improve their integration into South Korean society. Participants were recruited using snowball sampling, starting with one initial defector who referred others for the study. One-on-one in-depth interviews, lasting about one hour each, were conducted in person with 24 defectors. The research examines the role of bonding social capital (connections among defectors) and bridging social capital (interactions with South Koreans) in shaping their settlement experiences. Bonding social capital showed mixed results: while it provides practical support, such as advice and job information, it also involves challenges like fraud and conflicts within defector communities, leading some to avoid these networks. Bridging social capital is often established through education, workplaces, or religious activities. In the early stages of settlement in South Korea, North Korean defectors primarily formed bonding social capital with other defectors who arrived around the same time or lived in nearby areas. As they gradually adapted to society, they began to develop bridging social capital. Younger defectors in their 20s and 30s often interacted with South Koreans through universities or part-time jobs, while middle-aged defectors in their 40s and 50s typically built relationships with South Koreans in work environments. Religious institutions initially served as a platform for building relationships, but many defectors did not maintain these relationships over time. Due to fear of prejudice, many defectors adapt by trying to behave like native South Koreans. Younger defectors often adjust their accents and avoid disclosing their origins unless necessary, while middle-aged defectors are generally more open about their identities.

The findings emphasize the importance of balancing bonding and bridging social capital for successful integration. Many North Korean defectors who participated in the study initially relied on bonding social capital to gain emotional stability during the early stages of their settlement in South Korea. Over time, however, they reduced their reliance on these networks, maintaining only a few close relationships while preserving their sense of identity. Simultaneously, through their experiences in South Korean society, they gradually increased their focus on bridging social capital, aiming to assimilate and adopt behaviors more aligned with South Koreans.

Despite sharing the same ethnicity, South Koreans and North Korean defectors have followed vastly different economic and cultural paths due to the division of the Korean Peninsula, resulting in defectors experiencing both inclusion and prejudice within South Korean society. This background illustrates that existing theories, such as the 'salad bowl' or 'melting pot,' may not adequately address the unique characteristics of North Korean defectors. Effective support systems must address their specific needs, foster constructive relationships, and help build broader connections with South Korean society. Programs that encourage mutual understanding and reduce prejudice can play a critical role in achieving meaningful integration and improving the quality of life for defectors.

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A Study on the Optimization of Public Service Facilities in the '15-Minute Community Life Circle' Based on Equity: A Case Study of Wujiaochang District, Shanghai

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As China continues to explore and implement the concept of the "15-Minute Community Life Circle," optimizing the equitable and inclusive distribution of resources has become

a key issue in the regeneration and construction of community life circles. Studies found that, although the distribution of public service facilities in existing communities meets various indicators, there was a clear mismatch between the distribution of these facilities and the needs of different demographic groups. Vulnerable populations, in particular, often face difficulties in accessing equal public services due to constraints on their mobility or physical abilities. This phenomenon not only affects social equity but also hinders the core objective of improving residents' quality of life through community life circle development. This paper focuses on the fairness of resource access for vulnerable groups in Wujiaochang District, Shanghai, quantifies the differences in resource accessibility for different demographic groups, and proposes optimization strategies. The study first used GIS to analyze the spatial distribution of different populations in Wujiaochang District, then collected POI data on public service facilities, and analyzed the coverage area of these facilities. Based on this, a spatial analysis model was constructed, overlaying multiple layers to analyze the distribution of resources and populations. The study then quantitatively assessed the accessibility of facilities for different groups within walking and cycling ranges. Using time geography's ability constraints and authority systems, the network analysis method was employed to calculate the time cost for different groups to access various facilities, revealing the barriers faced by vulnerable groups in accessing resources. A regression model was further used to analyze the impact of income level, occupation, and age structure on accessibility disparities. The findings showed that inequities exist in the supply and demand of facilities in Wujiaochang District. Specifically, high-income and stable occupational groups have better access to resources and services compared to low-income and vulnerable groups. Spatially, there is a mismatch between population distribution and facility placement, leading to resource underutilization and waste. Functionally, some facilities are mono-functional, failing to meet the diverse needs of various populations. To address these issues, this study focused on Shanghai's ongoing projects such as 'People's Square' and 'Six Arts Pavilion,' which integrate multifunctional spaces and guide staggered usage. These projects significantly improve space utilization efficiency and service coverage, providing more convenient service access for vulnerable groups. Based on the above analysis, this paper proposes the following optimization strategies: First, improve the facility layout, enhance service capacity, and reduce usage disparities among different groups. Second, optimize underutilized spaces by promoting functional integration and incorporating time-planning paths. Additionally, at the policy level, strengthen support measures for vulnerable groups, such as targeted service provision and precise resource allocation, to lower barriers to accessing public resources. It is hoped that this research will provide valuable references for the development of community life circles in China and other regions, contributing to the achievement of the United Nations Sustainable Development Goal (SDG 11: Sustainable Cities and Communities).

Keywords:

15-Minute CLC; Vulnerable Groups; Community Development

T_07 INCLUSION (A) / 23

Spatial Development Strategies and Policy Recommendations for Social Development in Shenzhen

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This paper examines the current challenges in the spatial dimensions of our city's social construction efforts, including the low level of resource allocation efficiency, inadequate expression of urban characteristics, and shortcomings in management systems. It offers reflections on the issues and underlying causes affecting social construction in our

city. Drawing on successful practices in social construction from both domestic and international contexts, the paper proposes relevant spatial strategies aimed at activating existing spaces, expanding incremental development, prioritizing community engagement, supporting vulnerable groups, enhancing citizens' well-being, and innovating institutional mechanisms.

Keywords:

Social Development; Spatial Strategy; People-Oriented; Sense of Well-Being

T_07 INCLUSION (A) / 203

Reversing the gaze on comparative research in urban sustainability transformations: a decolonial perspective

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Comparative research is a social science methodology that entails comparing two or more cases, phenomena, or entities to discern their similarities, differences, and patterns. Comparative research is important for advancing the knowledge for urban sustainability transformations by highlighting diverse practices, policies and challenges for achieving transformations. However, comparative research has been dominated by centring of western paradigms, implicitly positioning other cultures as peripheral or derivative. This methodological dominance has had consequences for what we understand as sustainable and whose knowledge is prioritised in developing future urban pathways. The centring of the western understanding of sustainability has been challenged by post-colonial and decolonial approaches that are conscious of the power asymmetries in comparison. This has led to a second wave of comparative approaches that bring diverse urban contexts and practices in conversation, challenge the universal epistemological and ontological understanding of sustainability and moving towards plural theory building. This paper goes further and points towards a radical and emerging third bold direction in comparative research that involves “reversing the gaze”, shifting the perspective entirely to those traditionally viewed as peripheral, using their experiences and frameworks as the primary lens for comparison. This methodological deviation is based on the current socio-ecological crisis, marked by climate and biodiversity collapse, driven by capitalist and colonial legacies, and the need for alternate and diverse knowledge and practices of sustainability. This paper illustrates the three ways of comparing through examples and discusses their consequences for urban sustainability transformations. It calls on researchers to unsettle power structures and expand the scope of what is compared and how and move towards radically diverse ways of imagining sustainability transformations.

Keywords:

Comparative research; Decolonial; Sustainability transformations; Urban

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T_07 INCLUSION (A) / 425

A MODEL FOR MEASURING AND ASSESSING SOCIAL SUSTAINABILITY: ANKARA DIKMEN VALLEY CASE STUDY

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During the transformation and reconstruction of cities, the politics of sustainability has been adopted. Because of the focus on environmental and economic components of sustainability during urban interventions, problems of social inequalities, insufficiency, insecurity, social exclusion, and lack of social unity have been raised. Since the primary purpose of urban interventions is to improve the spatial structure, enhancing and maintaining social structure is essential in ensuring spatial sustainability. From this point of view, this paper focuses on measuring and assessing social sustainability before and after urban interventions. This paper presents a model that defines the key issues/criteria of social sustainability, the objectives and sub-objectives for achieving social sustainability, and the indicators to measure and evaluate them.

The universal model is based on a holistic approach that can be applied to all urban areas and scales. The model identifies 10 criteria for measuring social sustainability: demography and employment, accessibility, education and skills, health, sheltering, security, belonging, participation, social capital and social cohesion, urban life quality, satisfaction, and adequacy of services. In the scope of these criteria, 12 targets, 24 sub-targets, 45 indicators to evaluate their feasibility, and 72 indicator definitions are determined. Ankara Dikmen Valley has been selected as a case study for implementing the model. Dikmen Valley Housing and Environmental Development Project is the first multi-purpose urban development project; in other words, it is an urban regeneration project for slum areas and squatter settlements in Turkey. Dikmen Valley was chosen as the implementation area as it has been inhabited for more than 5 years. The project aims to improve living conditions there, emphasizing the participation of the right stakeholders and other stakeholders during the preparation and planning phases. In implementing the model for measuring and evaluating social sustainability in Dikmen Valley, all quantitative and qualitative data were obtained through spatial analyses and face-to-face interviews. These data were added as research findings to the dashboards defined for all criteria with the model proposal. The overall averages of the targets and sub-targets determined for each criterion were calculated, and the level of achievement of the targets and sub-targets was determined.

Although one of the main objectives and principles of the Dikmen Valley Housing and Environmental Development Project is "to eliminate the physical, social and cultural differences that prevent the integrity of the area by ensuring integration between segments", and the fact that the former rightful squatters in Dikmen Valley did not live in the valley after the implementation of the project, moved to other districts, and those who tried to live in the valley were exposed to many problems shows that the primary goal of the project could not be reached and failed.

Keywords:

social sustainability, criteria and indicators of social sustainability, Dikmen Valley

T_07 INCLUSION (A) / 508

Just smart? A Preliminary Study on the correlation of Smart City Infrastructure and Gentrification

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In response to increasingly complex urban development challenges, reports from the United Nations Development Programme (UNDP, 2024) and Asian Development Bank (ADB, 2020) indicate that smart cities are one approach to addressing rapid urbanization. Through applying science and technology to improve the quality of life, it is considered to optimize the allocation of resources and overall competitiveness. At the same time, the smart city strategies emphasize on people-centred concept to achieve inclusive and sustainable development. Some studies mention that smart city initiatives attract external labor forces, resulting in local rent increases and displacement of low-income groups. There is limited literature on how smart infrastructure affects real estate prices and possible impacts on social equity.

However, like all urban environment improvement policies, similar issues arise including areas with upgraded infrastructure triggered real estate values increase, attracting high-income groups and real estate investors to further result in unaffordability. This may indirectly displace low-income groups or original residents, known as gentrification. Previous studies on drivers of gentrification include the development of parks and green spaces, urban renewal projects, mass transit station constructions, and disaster prevention improvements. Literature on smart gentrification focuses on digital and virtual aspects of participation.

This research focuses on administrative districts Qianzhen and Lingya Districts in Kaohsiung City, Taiwan, as case studies to examine whether smart city infrastructure investments lead to possible gentrification, analyzing potential factors and correlations. First, the literature review analyzes types of gentrification and contexts. It defines the scope of smart city infrastructure types (such as smart transportation), examining the most common facility types and their coverage rates in these districts. Second, the hedonic property value method and multivariate analysis examine correlations between smart city infrastructure coverage factors, added benefit indicators, and gentrification indicators. The analysis results will explain how smart cities affect spatial equity, providing research recommendations for policy formulation to achieve inclusivity and sustainability in future development and resource investment.

Keywords:

smart city; gentrification; sustainability

T_07 INCLUSION (A) / 635

Transformative Planning for Sustainable Futures: Bridging Global Goals and Local Actions through Adaptive Frameworks

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Abstract

Planning has been the key transformative action during these times of highly increasing global crises such as climate change, loss of biodiversity, and socio-economic inequality.

We should not have blind pursuit of economic benefits; instead, we have to consider environmental ones during construction. It is not advisable to obtain high benefits at the expense of the environment. The following research searches for ways in which planning as a theoretical framework and instrument can catalyze systemic changes in urban and regional contexts. This research is especially relevant in light of the urgent gap between global environmental goals and strategies for their implementation at the local level, specifically in rapidly urbanizing areas. The interdisciplinary approach of the study combines insights from urban planning, environmental science, and social innovation. This research embarks on adopting both qualitative and quantitative approaches, such as case studies, spatial data analysis, and participatory workshops, to investigate the effectiveness of transformative planning practices in building up the needed resilience and sustainability. Three key dimensions are central to the analysis: governance innovation, community empowerment, and cocreation of adaptive infrastructure. Key findings suggest that transformative planning can orchestrate different actors, integrate sustainability in decision-making processes, and facilitate fair resource distribution. The present study thereby highlights the innovative potential of integrating such digital tools like AI-driven urban simulation and scenario planning into participatory processes for inclusive and dynamic planning outcomes. This paper contributes to the debate with a new “adaptive planning framework” that centers on flexibility, inclusivity, and a systems thinking approach. The framework gives policymakers and planners a guideline to address the complexity of global crises while striving toward achieving the Sustainable Development Goals. Redefining the interrelationship between economic systems, ecological balance, and equity, planning can serve as an active driver for holistic and sustainable solutions to global crises.

Keywords:

Transformative planning; Governance innovation; Sustainability; Community empowerment; Adaptive planning framework

T_07 INCLUSION (A) / 725

Investigating Mobility-Impaired Older Adults' Travel Behavior: Evidence from Shanghai

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The global trend of population aging is accelerating. The United Nations predicts that by 2050, individuals aged 60 and above will account for 22% of the global population. In China, as of 2018, the population aged 60 and above was approximately 178 million, the number of people with disabilities was about 85 million, and the low-income population reached around 282 million. These three groups together accounted for 39.6% of the total population, facing numerous barriers in urban walkability and public transportation accessibility.

To improve the quality of life in the local community, Shanghai implemented the 15-minute community life circle initiative, equipping each local community with a list of service facilities. However, due to various physical barriers in the local community, will this initiative benefit individuals with disabilities and people with physical mobility constraints?

Existing research has already recognized the heterogeneity among older adults, highlighting factors such as age, economic status, social and family support, and different

types of physical, sensory, and cognitive impairments, as well as the influence of built environment elements in their residential areas. However, qualitative studies indicate that (1) varying degrees of mobility impediments or disability severity exert more direct constraints on travel frequency and mode captivity; and (2) beyond facilities within walkable distances, there are still physical barriers for them to access the service—such as sidewalk smoothness and accessible elevators. These two points urgently require greater attention when investigating the travel behavior of vulnerable populations.

The survey data from 1,049 respondents in Shanghai show that 59% of them reported mobility difficulties; this study incorporates “mobility limitation” as a grouping dimension. It includes self-reported mobility impediments and degrees of mobility impediments, such as the use of crutches, wheelchairs, or medication. The built environment factors were calculated based on a reduced range of their walking in 15 minutes. Logistic regression, ordinal logistic regression, and Poisson regression were applied to analyze the difference.

The results show that, after accounting for “mobility limitation” category, the overall travel frequency for the group with travel difficulties declines significantly, their travel largely centered on utilitarian daily shopping, personal affairs, and medical visits. Meanwhile, the influence of general built environment factors—such as facility density and public transportation accessibility—is much weaker for this group compared to healthier individuals.

This analysis highlights the necessity of separately identifying and addressing mobility-restricted elderly groups in urban renewal, transportation planning, and travel behavior studies to avoid their needs being overshadowed by those of healthier elderly groups. For this population, research priorities should shift from conventional built environment optimization to the enhancement of micro-level barrier-free environments and universal design.

Keywords:

mobility limitation, mobility impediments, mobility-impaired older adults, neighborhood built environment

T.07 INCLUSION (A) / 867

Rightwing Politics Among the Global Leftovers: a comparison from Turkey and Colombia

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Right-wing politics are on the rise globally, with politicians increasingly promoting nativism and anti-immigrant rhetoric combined with neoliberal policies. While many theorists might expect marginalized urban populations to turn to leftist politics to improve their living conditions, these groups often align with right-wing movements. Rather than dismissing such choices as misguided, our comparative project seeks to examine what political participation entails, the political discourses that emerge in impoverished urban spaces, and the broader political, economic, and social landscapes that shape these alignments.

Focusing on two marginalized neighborhoods—one in Turkey and one in Colombia—we aim to understand how impoverished populations respond to global political and economic shifts by embracing policies and discourses that often stigmatize them. Despite their geographic and historical differences, these neighborhoods share striking similarities: they predominantly house migrants from marginalized backgrounds, have histories

of irregular occupation, are sites of clientelist politics, and have undergone massive urban redevelopment projects. These parallels highlight how global trends disenfranchise and disempower vulnerable populations while incorporating their labor and resources into global economic streams.

By studying these sites comparatively, we aim to create a framework for understanding how global political trends are reframed locally. Our inquiry seeks to destabilize assumptions about political subjects and ideologies, asking: What does “the right” look like in these spaces? How do economic precarity and local dynamics shape political allegiance and participation? What are the stakes for marginalized populations engaging in such politics?

Keywords:

urban dispossession, urban redevelopment, migration, inclusion, right-wing

T_07 INCLUSION (A) / 1172

Embodying Justice in the Built Environment: Transatlantic Reflections on Carbon Neutrality, Circularity, and Justice

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Unjust practices have shaped the built environment, encompassing land dispossession, discriminatory land use planning and regulations (Goetz, et al, 2020), harmful material extraction (Malin et al., 2019), toxic production processes, and wasteful construction, consumption, and demolition practices (Grace Farms, 2023; Huuka, 2023). Current building practices and land development processes have exacerbated injustices embedded in the built environment. *Embodying Justice in the Built Environment* is a multi-phase research project founded on the principle that addressing these injustices is essential to achieving carbon neutrality. This research sought to answer the question: How can cities embody justice as they shape the built environment and pursue climate action?

A research team of faculty from Cornell University and the University of Washington conducted a review of existing literature and an in-depth analysis of policies promoted by the Carbon Neutral Cities Alliance, focusing on achieving carbon neutrality through policies related to 1) circularity and waste management, and 2) land use policies and regulations (Carbon Neutral Cities Alliance and One Click LCA, 2020). The team examined building life cycles and systems related to land use, care, and transition and conducted interviews with local government agencies, tribal governments, and community organizations to develop case studies or practice stories. Rooted in participatory action research with community leaders across New York State in the USA, this research was conducted in collaboration with the Circularity Reuse and Zero Waste Development (CROWD) network. The results of this research are a set of two guides with workbooks for communities to consider (see, for example, Minner, Poe, Heisel, Kopetzky, Porath, and Worth, 2024). This presentation provides an overview of how to use these resources, describes justice considerations within the Embodying Justice in the Built Environment framework, and shares outcomes from considering these resources in cities.

The two *Embodying Justice in the Built Environment* resources were developed within a North American context and with local government officials from cities in the U.S. and Canada. This presentation will include an analysis of the political and policy similarities and differences between European and North American cities, focusing on carbon neutrality, circularity, waste management, land use, and justice and equity. Additionally, it will examine the differences in format between the two workbooks and explore how they have been and could be applied in various contexts.

Keywords:

Carbon Neutrality; Justice; Circular Cities; Waste, Land Use

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T.07 INCLUSION (A) / 1049

Inequalities in Public Cultural Facility Distribution: A Comparative Analysis Across Demographic Groups in Wenzhou, China

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The concept of “equalization of basic public services” has gained increasing attention in China, alongside the public’s growing aspirations for a better life. However, significant challenges remain in addressing imbalances and inadequacies in public service, particularly in terms of regional, urban-rural, and demographic disparities (Xu et al., 2022). Aligning public service distribution with demographics is crucial for achieving equity. While several studies have analyzed the spatial distribution of basic public facilities such as green spaces (Yang et al., 2022), hospitals (Gao et al., 2021), and elderly care facilities (Liu et al., 2024), research on public cultural facilities is limited. As globalization progresses, cultural resources are crucial for preserving local identity. Cultural equity has emerged as a key indicator of social development, demanding urgent attention to the rights of vulnerable groups in terms of cultural access (Fan and Hou, 2021).

This study addresses the gap in the literature by analyzing the spatial distribution of public cultural facilities in Wenzhou, focusing on equity in distribution, service availability, and supply-demand alignment. Kernel density analysis, service coverage calculations, 2SFCA (Gaussian-based Two-Step Floating Catchment Area) model, Pearson correlation, Spatial Autocorrelation analysis, and Spatial Lag Regression Model are used to explore disparities in facility access among floating populations, youth, and the elderly. The findings reveal imbalances in distribution, with central urban areas having better facility coverage than surrounding and mountainous regions. Facility distribution correlates with demographic characteristics: regions with higher concentrations of floating populations and youth generally have more facilities, while areas with larger elderly populations have fewer. Furthermore, facility accessibility is generally poor, with no clear correlation with demographic characteristics, showing a random spatial distribution. In terms of supply-demand alignment, only one sub-district meets high demand and supply. Key contributing factors to these inequities include Wenzhou's historical development patterns, inadequate facility sizing, and the neglect of elderly populations in planning. The paper proposes three optimization strategies: (1) enhancing facility accessibility by integrating them with other public services, (2) offering targeted cultural services in areas with high demand and low supply to address demographic-specific needs, and (3) leveraging facility locational advantages to engage the floating population and promote their integration into local communities.

This study highlights the significance of equalizing public cultural services to promote social harmony and stability. It emphasizes that the allocation of public cultural facilities should be aligned with population growth patterns and demographic characteristics.

Keywords:

Public cultural facilities; Spatial layout; Population characteristics; Social equity; Floating population

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T_07 INCLUSION (A) / 1036

Trading in the Shadows: Women Traders in the Second-Hand Goods Market Area, Küçükpazar

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One of the alarming aspects of the global cities is that social and economic disparities and inequalities are deepened and they accompany with the flourishing informal sector. These inequalities have significant impacts on urban space. One of these places, known as Küçükpazar, is located at the outskirts of the Süleymaniye World Heritage Site in Istanbul. The market area is a small square and located at the intersection of a park, a mosque, a car park, and various shops, with quite distinct characteristics from the other places in the historical peninsula. Küçükpazar market area is operated during the day as a formal market place, and after the sunset, it turns into an informal second-hand goods market place. The practice of selling is allowed to operate in a grey area, straddling the line between what is legal and not. The municipal patrol vehicle waits in the square from early morning until sunset, but the time of absence is vague. The vendors' belongings in their suitcases and bags wait in uncertainty in front of the municipal patrol vehicle, the presence of the vehicle becoming the boundary between the informal and formal in the city. The municipal patrol is aware that those in front of them are vendors and that trade will commence once they depart; however, they refrain from intervening with individuals who have not yet unpacked their goods or set them out for display. The unpredictability is caused not only by the coming and going of the municipal patrol, but also by the uncertainty of when they will arrive to stop the vendors' activities and demand the removal of their goods. This situation shapes the market and sometimes threatens its existence.

Selling second-hand goods in public spaces like streets and squares is commonly viewed as a male-dominated occupation in Türkiye. However, women have also appeared as vendors in the informal marketplaces lately.

Based on in-depth interviews and observations, women vendors' experiences the market are analyzed at the intersection of gender relations and global city dynamics. The flexibility offered by the second-hand market, in different forms of bargaining, lack of costs such as taxes and rent, absence of fixed working hours and social regulations of the formal workplaces come forward as advantages. On the other hand, being in the marketplace as a vendor does not dissolve the gender prototypes, the uncertainty turns the place into a rather unsafe area of the city, starting at dusk.

This research looks at the interplay of the women vendors' activities at the Küçükpazar marketplace by investigating the gendered dimensions of informality and appropriation of public spaces at the heart of the global city.

References:

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Keywords:

Informal second-hand market place; global city; informality; gender relations; Küçükpazar.

T_07 INCLUSION (A) / 1351

Which development role for civic organisations? Insights from Sicily, Southern Italy

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Despite decades of debate, policies, efforts and funding dedicated to territorial cohesion within the EU, the quest for ‘development’ in long-term lagging regions is still an ongoing and largely open dilemma; a dilemma that has become even more dramatic due to the changing socio-ecological dynamics as well as the neoliberal evolution of society, economics, and politics.

This paper contributes to the very long-term debate on planning for development in lagging regions in the EU, drawing from research conducted on Sicily (Saija & Li Destri 2022), arguing the need to reconceptualize the relationship between institutions and civil society in order to develop effective development strategies.

For years planning scholars have debated on the importance of looking at planning as an endeavor engaging not just institutional decision-makers supported by trained professionals, but also the civil society (Friedmann 2011). In this perspective, the relationship between civil society and institutions has been explored through a great variety of interpretive frameworks, mostly located within a spectrum that goes from harsh conflict to peaceful collaboration. Overall, such a large body of planning literature suggests that there is not an ideal type of desirable, effective, or productive civics-institution relationship. What is not predefined might depend on each context’s unique characteristics, evolve over time, and encompass the full spectrum of possibilities in response to specific circumstances. In other words, while planning scholarship has focused on the nature and the desired characteristics of the relationship, and on how the two nodes –institutions on the one side and civic society on the other –should/can/shouldn’t relate with each other, less attention has been dedicated to the specific traits –if any –that characterize each of the nodes so that they can establish a fruitful relationship with each other, whatever fruitful might mean in a certain context.

The search for those traits can draw from the work of the Italian philosopher Roberto Esposito (2019), whose concept of instituting paradigm pushes planning scholars to ask (Li Destri & Saija 2023): what are the traits of an instituting civics, namely a civil society that is likely to collect, organize, and express collective demands that can be strategically used to push institutions and pursue development in the face of the contemporary socio-ecological crisis? How are these traits developed?

To explore these questions, we discuss some preliminary findings of the PRIN research project *Resisting: Reconnecting Social Innovation with Institutions in Urban Planning* funded as a PRIN by the Italian Ministry for Research, which investigates the dynamics of civic action and instituting processes across three Italian regions, from north to south: Piedmont, Veneto, and Sicily.

In this contribution, we focus on Sicily, examining the distinctive characteristics of a variety of civic organizations, in search for instituting traits. Analysis of data collected through archival research and qualitative methods (mapping and interviews) has shown significant differences between ‘instituting’ capacities by, on one end, well-established third-sector organizations operating primarily as service providers and, on the other, grassroots insurgent initiatives. The paper argues the importance of advancing our understanding of these differences as a crucial element that should help identify effective and more equitable development strategies.

Keywords:

civic organizations, planning for development, EU lagging regions

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T_07 INCLUSION (A) / 1311

SOCIAL MOBILIZATION AND ITS CAPACITY TO TRANSFORM HOUSING POLICIES: THE SPANISH CASE SINCE 2009.

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Although the right to housing has been part of the Spanish Constitution since 1976, over 1 million families have been evicted from their homes since Spain's property market crashed in 2008. Face of the housing emergency and the political inaction, in 2009 a social movement emerge, The Platform of People Affected by Mortgages (PAH) and in 2017 the tenants' union, both with the aim to stop the evictions and change the national housing policy. After decades of struggle, in 2023 the first national housing law is approved. This research work analyses, through an analytical framework, the evolution since 2009 of the movement fighting for the right to housing and its capacity to transform public policies and in particular the legislative framework, in the Spanish context. The results show, on the one hand, the organizational capacity of these movements and the flexibility of these social organizations to adapt to the changing situation of the housing emergency of the country. On the other hand, they show that these organizations have been able to transcend individual demands and acquire a collective dimension, that is, they have not only been able to respond in the short term to individual emergency situations but also to influence, in the medium and long term, the cultural, media and political spheres in terms of housing. Finally, the work shows that guaranteeing the right to housing for all people implies breaking with the subordination of the use value of housing to its exchange value.

It is hoped that this research work can contribute to other marginalized groups identifying and making visible the collective dimension of their struggles and finding the strength and resources to promote initiatives capable of influencing public decision-making processes.

Keywords:

housing right; social movements; policy-making; housing law; Spain

T_07 INCLUSION (A) / 1322

The Cultural Capacity of Cities: Baghdad and Nation-Building

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This research seeks to develop an understanding of Baghdad's understudied role in processes of collective identity building and how different visions of citizenship have changed the face of the city. Since the establishment of the Iraqi state in 1921, the capital has been central to questions of belonging and social stability in the country. The richness of Baghdad's ethnic and sectarian traditions, as well as their prominent influences on the urban fabric, make it a unique example. Each phase of the city's history offers insights into processes of identity and nation-building that are hard to find elsewhere. In this sense, Baghdad has gone through different phases, from being a melting pot for all Iraqis to becoming the epicenter of division after 2003.

The focus is on the post-2003 period, especially as the city has regained its role in constructing inclusive visions of nationhood in recent years. Due to the lack of appropriate methodologies, the new concept of "cultural capacity" is developed and implemented here. It serves as a tool to analyze the cultural heterogeneity of the city, the accessibility of its spaces for social interaction, and the visibility it offers to different forms of belonging at the micro, mezzo, and macro levels. In addition, the spaces most relevant to these processes are thoroughly documented to provide insights from the perspective of everyday life. The findings are essential to anticipate the role of Baghdad, especially after the end of the last wave of ethno-sectarian violence and the Tahrir uprising in October 2019.

Keywords:

Inclusive spaces; Nation-building; ethno-confessional identities; diverse cities

T_07 INCLUSION (A) / 1428

Mapping inequalities within Southern European cities: cognitive tools and policy perspectives

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Over the last twenty years, inequalities within cities have started to grab increasing attention among scientists and policymakers (Nijman and Wei, 2020). In fact, evidence suggests that cities across the world are again witnessing growing socio-spatial disparities due to new driving forces for urban development, often deriving from uncontrolled global processes (OECD, 2018). The reason of this trend must be associated to the impact of the crises that have repeatably affected urban economies in the last decades (from the 2007-8 financial crash to the Covid-19 pandemic), but also to the limited effectiveness of public policies in securing a more equal distribution of opportunities and welfare, even in the developed countries. From a policy perspective, Southern European cities are characterized by additional complexity (Knieling and Othengrafen, 2016), given the overall fragility of local authorities in regulating development, and the growing disaffection for the public domain manifested by wide social strata.

In this context, the paper provides a preliminary account of a research project (funded by the Italian Ministry of University) that seeks to create new cognitive tools to understand the spatial patterns of inequalities within Southern European cities. Complemented by case studies led into four large cities of that family (Lisbon, Barcelona, Marseille, and Athens), the project is primarily addressed to create a geographical representation of the spatial inequalities emerging within the two largest urban areas of Southern Italy: Naples and Palermo. For these cities, an 'Atlas of Urban Inequalities' has been implemented with the help of small-scale indicators belonging to different domains, including

income distribution, state of housing, access to basic services and amenities, environmental risks.

The paper illustrates: first, some key features of the Atlas, with a focus on the way indicators have been selected and turned into spatial representations; secondly, with the help of key maps of the two cities, it illustrates the different –sometimes contradictory– forms urban inequalities can take across time and space. The work concludes with a critical reflection about how such a mapping exercise can help bridging the gap between knowledge and action, the policy question that will be approached by the research team in further steps of the project.

Keywords:

Socio-spatial inequalities; Southern Europe; Urban change; Urban policy

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T.07 INCLUSION (A) / 1711

Navigating Urban Borderlands: A Brussels Case Study

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The contribution revolves around the “Borderland Brussels” project (BCUS-VUB, 2020-2022) and further research-by-design explorations (Cosmopolis, 2023-2025) which examine urban borderlands—spaces defined by political, physical, and symbolic borders—through interdisciplinary research in urbanism, anthropology, and criminology. These borderlands, shaped by migration, exclusion, and tension, are vital sites for understanding the challenges faced by marginalized populations and discussing innovative planning for vulnerable groups. The project highlights the need to amplify the voices of these communities in urban planning.

By emphasizing the transactional nature of urban borderlands, where boundaries are not only physical but also social and symbolic, we interpret these spaces as fluid and porous, requiring interdisciplinary methodologies to fully grasp the dynamics of exclusion and precarization. The proposed participatory approach includes a key experimental method, displaying an urban intervention—an installation at the contested Les Brigittines Square (Brussels), designed for interaction and dialogue between different communities. This installation helped reveal social dynamics and offered insights into fostering coexistence in borderlands. The following workshops and research-by-design explorations discuss the findings and potential urban interventions, aiming at finalizing a methodological document with actions for inclusive urban planning.

By focusing on borderlands as sites of both conflict and potential transformation, the project contributes to rethinking urban spaces as inclusive and resilient, prioritizing marginalized voices and proposing urban interventions that enhance coexistence in cities.

Keywords:

Borderlands; Spatial Justice; Social Exclusion; Urban Inequalities; Participatory Urban Planning

T_07 INCLUSION (A) / 1852

Inclusive cities through the experience of vulnerability

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This paper proposes and discusses a novel concept of vulnerability and its implications for transformative urban policies and practices. As well known, vulnerability has gained a prominent role in several discourses concerning urban social and environmental justice. Within these discourses, vulnerability has become a sort of mental image which is used to represent conditions of exposure of territories, groups of people and non-humans to different kinds of stress. However, moving from discourses and images to urban planning practice, dealing with vulnerable territories, people, and environmental ecologies is still a problem. There are multiple definitions of vulnerability, and several are controversial and problematic, mainly if planning practices are concerned with spatial justice and the inclusion of marginal people and groups. Furthermore, vulnerability is often considered as something that increases passive behaviours and that can be seen with suspicion because of its being a technical dispositif of government. We critically discuss different approaches to vulnerability in order to define our perspective on vulnerability and its transformative potential.

As emerged from our theoretical and practical engagement -as researchers and planners- in shaping actions and projects aimed at opposing the marginality of migrants and populations which live in deprived neighbourhoods, for us, vulnerability can help urban policies to disclose transformative opportunities for an expanded vision of inclusion in the city so long as it is redefined as a complex process deeply rooted in an idea of transformative planning practice. For us, transformative planning is a way to disclose opportunities for inclusion which change the dynamics of the production of injustice and the associated power relations through placemaking.

Related to such an idea of transformative practice, we adopt a critical theoretical conceptualization of vulnerability as a complex process. Beyond being a condition, vulnerability is situational, contextual, relational, and profoundly shaped by the lived experience, including that of producing space through placemaking. This conceptualization connects vulnerability to values, power relations, and socio-ecological stories of places by activating the agency of the involved subjects towards the generation of more egalitarian and socially just directions of urbanization processes.

Through the stories of two different practices of placemaking in Sardinia and Apulia, we discuss the problems that remain to be faced and the prospects of our approach for enlarging the conceptions and possibilities of producing just and inclusive cities through vulnerability.

Keywords:

vulnerability transformative planning spatial justice

T_07 INCLUSION (O) / 12

Immigrant Housing and Cultural Practices as a Change Factor in Current Density and Price Distribution of New York

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The metropolises of many nations are experiencing constant splintering of their districts. This splintering brings along housing and cultural diversity as well as distribution of density across the urban landscape of cities. In most North American countries, it has been identified that these outcomes are triggered by two major forms of segregation as it is manifested on the ground: natural segregation and artificial segregation (including systemic segregation). Among three selected neighborhoods (at the suburb-Mount Vernon, the interstice -Parkchester and the city core-South Bronx) in New York City, this paper adopts the transect point analysis method to explore the formation of these two forms of segregation and how they can help us understand how the new diverse silicon-valley-like global nodes could look like. These nodes represent spaces of immigrants' livelihoods. Here, I argue that we may be presenting an inaccurate depiction of the housing density/price from the core to the periphery since immigrants' culture and housing practices could change our analysis of housing density. This could also enable us to plan the heterogeneous, 'appropriately' compact and diverse smart city that could be developed bottom-up. Thus, my research question is: How does the housing practices of New York residents change our depiction of the housing density/price distribution?

Keywords:

Affordability, Inclusive development, Equity, Segregation, Housing, Immigration

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T_07 INCLUSION (0) / 1869

Research on the Needs of the Elderly in Urban Renewal of Old Communities: A Case Study of Nanjing

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With the increasing severity of aging issues, the demand of the elderly for a better quality of life has been growing. However, the needs of the elderly in urban areas have not received sufficient attention. Old communities, as places where elderly people gather, are facing the challenge of outdated conditions that fail to meet the needs of their residents. In the context of urban transformation, how to ensure the interests of the elderly during the urban renewal of old communities, within the framework of stock planning, has become a critical issue in current research.

This study first summarizes the needs of the elderly at three levels—urban, neighborhood, and residential—through a literature review. It then analyzes the current conditions of urban renewal in Nanjing using GIS technology and literature research. Furthermore, a hierarchical analysis method and questionnaire survey were employed to construct an evaluation index system for urban renewal based on the needs of the elderly. Field surveys and interviews were conducted to collect data on the elderly's satisfaction with existing renewal projects, followed by fuzzy evaluation to analyze the results.

The results show that the demand for urban public service facilities among the elderly in Nanjing follows a “centralized core—dispersed periphery” pattern. The physical space of old communities lags behind the needs of the elderly, and many residential buildings are of poor quality, urgently requiring renovation. The elderly prioritize the urban level of needs, although the importance of the three levels does not differ significantly. Analysis of survey data indicates a generally low satisfaction level with the current renewal projects, suggesting the need for further improvements to better meet the elderly's needs.

Urban renewal models for old communities, based on the needs of the elderly, should consider multi-level demands, focusing on the improvement of urban facilities, neighborhood spaces, and residential environments to enhance the quality of life for the elderly. The findings provide valuable experiences and references for future urban renewal planning, particularly in designing renewal strategies that address the specific needs of the elderly population.

Keywords:

old communities; urban renewal; elderly needs; GIS analysis; hierarchical analysis

T_07 INCLUSION (0) / 494

The Demand-Supply Measurement of Youth Development-Oriented Cities Based on the Characteristics of Generation Z: A Case Study of Shanghai, Nanjing, and Hangzhou

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Due to the influence of social generational shifts and the specific life stage of individuals, Generation Z (born between 1997 and 2012) exhibits distinctive characteristics in consumption attitudes (Noor, 2017), lifestyles, and areas of interest (Lee and Eun Hak Lee, 2024). As the most dynamic and creative human capital group in modern society, Generation Z plays a pivotal role in urban innovation, entrepreneurship, productivity, and economic growth (Jiang and Hong, 2021). However, under the urban development model driven primarily by economic growth, capital accumulation and productivity enhancement often become the dominant factors in policy decisions and urban spatial planning. As a result, the youth demographic faces a dilemma in major cities, where the cost of living does not align with their income, and their needs for employment, housing, and social interaction are often unmet or deprioritized (Kolomatsky, 2022). As urbanization in China enters its middle and later stages and the demographic dividend gradually fades, it becomes crucial to construct youth development-oriented cities based on the specific needs and characteristics of Generation Z. This approach can effectively balance economic growth with social welfare needs, enhancing the inclusivity and attractiveness

of cities to the younger population.

This study summarizes the characteristics of Generation Z, which include high educational attainment, high individualism, virtualized and fragmented socialization, and a strong pursuit of self-actualization. From these characteristics, a youth-oriented urban development framework is constructed from both demand and supply dimensions. This framework includes three evaluative levels: "basic growth, relational cohesion, and developmental leap." Empirical research is conducted on three regional central cities in China—Hangzhou, Shanghai, and Nanjing—to assess the degree of alignment between the satisfaction of youth needs and the supply of urban factors, providing theoretical and methodological insights for advancing youth development-oriented cities.

The evaluation results indicate that all three cities—Shanghai, Nanjing, and Hangzhou—exhibit varying degrees of mismatched supply and demand. Specifically, Hangzhou performs the best in meeting the needs of Generation Z, with the highest alignment between youth demands and the provision of urban resources. In contrast, Shanghai, while relatively rich in supply factors, demonstrates a lower satisfaction level on the demand side, suggesting a mismatch in the targeting and precision of spatial resources and service provision. Shanghai needs to improve the directionality and adaptability of its supply to better meet the diverse needs of the youth demographic. On the other hand, Nanjing shows a higher satisfaction with demand-side factors but faces a shortage in supply, reflecting the city's greater attention to the needs of young people but insufficient provision of resources in housing, employment, and public services. Overall, the differences in urban space planning and resource supply across the three cities highlight the varying strengths and weaknesses in addressing the needs of the youth population, indicating the necessity for targeted optimization and adjustment based on the unique characteristics of each city.

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Keywords:

Youth Development-Oriented Cities ; Demand-supply Matching; Generation Z Development Evaluation

T_07 INCLUSION (0) / 580

Grassroots Organizations and Informal Sector: A Study of the Hawker Sangram Committee in Kolkata, India.

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The informal economy, comprising a wide range of unregulated economic activities, provides jobs for almost two billion of the world's workers today. In developing nations, such as India, this share is around 90%. As the informal economy dominates the world's employment and the nature of urbanization, it also creates challenges, especially in developing countries, to comprehend and control informality. Informal employment does not strictly adhere to national legislation, income taxation, social security, or employment benefits and, therefore, is prone to injustice, human rights, and labor moralities. In India, almost two-thirds of the workers are in the informal sector; around 89% of such workers reside below the poverty level, and about 80% live in cities. Vending and hawking in urban streets are India's most popular forms of informal self-employment and are a crucial source of income for many in the dearth of organized sector jobs.

Government initiatives to address the needs of such informal vendors are inadequate, and hence, in India and other Global South countries, Grassroots Organizations (GROs) play a crucial role in institutionalizing such informality. The GRO, Hawker Sangram Committee (HSC) in Kolkata, India, united hawkers' unions across the city, state, and country, formed the National Hawker Federation, and passed the 2014 Street Vendors Act, legalizing street hawking and vending in the country. This study aims to understand how GROs like HSC work and their roles in the context of informal street vendors and hawkers when formal means of legitimization are unavailable. The study employs a comprehensive multi-method approach, including an archival study of old newspaper articles and working documents of HSC; interviews with HSC board members, selected union leaders, and their member hawkers; and observation and photo documentation of their daily operations, protests, and rallies, and their hawking and vending practices.

The study finds that HSC contributes to legalizing informal street vendors and hawkers at two levels. At the macro level, HSC's state and national initiatives have solved grassroots issues more permanently and universally. At this level, HSC acts as a mediator between the government, the public, and the hawkers; an advocate for hawkers' welfare and rights; a facilitator of structured protest for the legalization of hawkers; a resource builder to gather intellectual help for grassroots activism; and a trust builder between the marginalized and the government. At the micro-level, HSC addresses the needs of the unions and the hawkers, who do not have or require government intervention. Here, HSC performs as an arbitrator solving the issues of hawkers and unions locally; a social entrepreneur innovating new ways of vending and hawking to keep up with the changing society; a local problem solver mitigating local issues without government interventions; a housekeeper regulating in-house hawkers and maintaining their goodwill in the society; and a bookkeeper documenting hawkers' registrations, licensing, events, protests, policies, and workings. HSC's efforts to legitimize informal street hawkers in India have been unique, unprecedented, and revolutionary. Although the actual implementation of the Act is still underway, HSC's journey since its inception tells the story of how GROs operate to address grassroots social issues, in this case, to legitimize the hawkers. As the informal sector is expected to grow with global urbanization, recognizing GROs' roles in supporting marginalized individuals can provide useful policy insights to governments, practitioners, and scholars across nations.

Keywords:

Grassroots Organization; Informal Economy; Street Vendors; Global South; Kolkata; India

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T_07 INCLUSION (0) / 673

Equity-Oriented Optimization of Public Space Supply-Demand in Aging Communities: A Behavioral Perspective on Elderly Residents**Author:** RUOTONG ZHANG¹¹ *Tongji University***Corresponding Author:** 2210254@tongji.edu.cn

With socioeconomic development, China's urbanization has transitioned from incremental expansion to a focus on improving quality and efficiency through stock renewal. As one of the most prevalent forms of urban public space, community public spaces have become a critical component of urban construction in this new era. Due to physiological and psychological decline, the behavioral characteristics and influencing factors of elderly individuals differ significantly from those of children, youth, and middle-aged adults. Moreover, the accelerated aging process, combined with variations in health status, living habits, and socioeconomic conditions, results in greater differences among elderly individuals themselves than between elderly and non-elderly populations. These internal differences are particularly pronounced in aging communities. While differences in the demands of elderly and non-elderly populations have received some attention, variations in the demands of elderly residents across different age groups remain underexplored. Shanghai, the city with the highest aging population in China, is actively promoting the "15-Minute Community Life Circle" initiative to optimize the configuration of community public spaces. This initiative aims to provide essential services and public activity spaces within a walkable radius of residents' homes. However, in some aging communities, optimization efforts have revealed mismatches between the supply of public spaces and the actual demands of elderly residents. For instance, newly developed neighborhood green spaces often experience low utilization, while informal spaces located near facilities such as bike repair stations, locksmith shops, and residential entrances consistently attract frequent gatherings of elderly residents. This discrepancy highlights a misalignment between the supply of public spaces and the actual demands of elderly users, particularly regarding spatial allocation, quantity, and functional accessibility. This study focuses on the supply-demand mismatch of public spaces in aging communities, selecting the Yinhang Community in Shanghai as the research area. Yinhang Community, with an aging population rate of 47.69%, covers an area of approximately 7.98 km² and houses a permanent population of about 194,100. Based on an analysis of 1,016 field survey questionnaires, the study explores behavioral differences among elderly residents of different age groups in their use of public spaces. To further investigate, the study applies an improved two-step floating catchment area model, the MGH3SFCA model, to quantitatively assess how spatiotemporal behavioral differences among elderly residents affect public space accessibility. The results reveal significant differences in spatiotemporal behavior among elderly residents of different age groups. Walking distance is primarily constrained by physiological age, while activity frequency is influenced by the type of public space. Ignoring the differences in maximum walking distance and activity frequency across different times of day can result in an overestimation of public space accessibility for nearly 70% of residential units with elderly residents. Furthermore, the layout of formal public spaces significantly impacts accessibility for elderly residents, while imbalances in accessibility contribute to the emergence of informal public spaces. Incorporating often-overlooked informal public spaces into the formal public space system can help optimize public space configurations in aging communities, improving equitable accessibility for elderly residents, especially those in advanced age groups.

Keywords:

Two-step floating catchment area; Improved model; Equity; Accessibility

T_07 INCLUSION (0) / 924

Study on the Construction and Inheritance of Rural Models in Shaanxi North from the Perspective of Human-Land Emotional Bonds

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In the Shaanxi North region of China, the unique loess terrain and crisscrossing gullies have fostered a deep emotional connection between its inhabitants and the land, a phenomenon known as topophilia, which refers to the strong bond people share with their environment¹. However, the rapid urbanization of this area has challenged traditional construction models and conventional spatial layouts, leading to issues in rural construction such as the uncritical adoption of urban design principles, the abandonment of traditional spaces, and the erosion of local building techniques. These issues have resulted in the inefficiency and unattractiveness of rural spaces, particularly due to the neglect of local culture and residents' emotional needs[2,3].

This study highlights the importance of understanding the affective relationship between people and land in addressing these challenges, while also preserving and revitalizing traditional models of rural space. It investigates the motivations behind rural space construction in the Shaanxi North region, focusing on the emotional bonds between residents and their environment. Through interviews, surveys, and analysis, the study identifies the cultural significance and emotional needs associated with spatial features such as alleys, gullies, hillside elevations, and courtyards, which are integral to traditional construction models[4].

By employing qualitative methods, the study creates a knowledge map of human-land affective bonds in the region, emphasizing the value of traditional spatial layouts. It incorporates affective mapping tools and spatial narrative techniques, integrating affective data from social surveys with spatial data through Public Participation GIS (PPGIS)[5]. This results in an affective cartography that maps the emotional bonds between people and their environment, while also honoring traditional models[6]. The study also draws on rural reconstruction practices, proposing strategies for developing settlement areas that respect and enhance the local sense of place, incorporating elements of traditional construction models into a more empathetic and inclusive framework for rural development.

Keywords:

Shaanxi North Region Rural Construction Models Topophilia Emotional Bonds Affective Cartography

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T_07 INCLUSION (0) / 981

Peripheralization as process: shrinkage of small towns in metropolitan area——Case study of Shanghai

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Amidst the tide of global competition, the evolution of metropolitan regions and the associated phenomena of polarization and peripheralization have garnered increasing scholarly and policy attention. As urbanization and regional integration advance, Shanghai's central urban district has witnessed continuous expansion, with its competitiveness and influence in land use dynamics, industrial development, and talent attraction progressively intensifying. Nevertheless, the peripheral rural areas of Shanghai and the dispersed small towns therein are not also developing at the same pace. In fact, some small suburban towns are going through shrinkage, characterized by demographic decline, industrial atrophy, and spatial Degeneration.

This shrinkage phenomenon has further exacerbated the erosion of the power base of small suburban towns within urban areas, leading to the loss of their developmental resources and voice, thereby engendering a downward spiral of peripheralization. At the economic level, the process of peripheralization has led to the exclusion to small towns and rural area from the core of the region, the developmental disparity between small suburban towns and central urban areas has widened further, the manifestation of spatially uneven development has become more pronounced, and residents from different communities have experienced increased inequities in employment and entrepreneurial opportunities. At the social level, the process of peripheralization has accelerated the loss of community identity. Local residents have gradually been displaced, resulting in spatial social divisions and a reduction in social inclusiveness.

This study elucidates the dilemmas confronted by these small suburban towns in Shanghai from the perspective of peripheralization. It delineates the dynamics of peripheralization in small suburban towns on one hand, and on the other, it investigates the role of government decision-making, planning instruments, and the interactions among multiple stakeholders. Specifically, it examines how these factors influence the process of peripheralization in small suburban towns, and explores how the process of peripheralization leading to the exclusion in metropolitan region.

Keywords:

Peripheralization;small towns;metropolitan region;shrinkage;exclusion;unevenly development

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Track 8 | EDUCATION AND SKILLS

T_08 EDUCATION AND SKILLS / 665

What kind of planning are we preparing students for...and are we succeeding?

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As planning emerged as a profession, the education and training of aspiring planners in universities has become a hallmark of this recognition. This has always involved debates and sometimes tension between the expectations of professional bodies (initially for architecture and engineering before the establishment of planning professional bodies) and the pedagogic principles of host universities. In more recent decades governments and civil society institutions (from neighbourhood groups to bodies like AESOP) have become more articulate in their views about planning and their expectations of planners. As in other fields these debates include the appropriate balance between a general education and professional training, between the acquisition of theoretical and practical knowledge and between classroom and 'real world' learning environments.

This presentation begins by surveying some of the trends in the terms of these debates over the last century and the changes in prevailing wisdom about the various balances referred to above. It then presents a case study of planning education in Australia, a country struggling to come to terms with its colonial past and the role of planning in those processes. It is also a country where planning initially adopted many of the principles of early 20th-century British town and country planning and has since come to recognise both its geopolitical location in the Asia Pacific region and the potential value of Indigenous knowledge and traditions of environmental management.

In many parts of Australia at present, university-based planning programs accredited by the Planning Institute of Australia are struggling to enrol students in the numbers expected by their host institutions and are closing. Paradoxically, this is at a time when the demand for qualified planners is very high and the employers of planning students in both the public and private sectors report serious problems of recruitment and retention.

The presentation considers whether existing programs are offering sufficiently inspiring curricula and whether more radical offerings have the potential to not only attract more students but also to prepare them better to work successfully as planners committed to and capable of leading transformative action in an age of planetary crisis.

The presentation draws on my experience as a planning academic teaching courses at undergraduate and postgraduate levels and as an active member of the Planning Institute of Australia (PIA), on both its National Education Committee and as chair of the Education sub-Committee of PIA's Queensland Division.

Keywords:

Planning education; Professional expectations; Pedagogical debates; Skill shortages

T_08 EDUCATION AND SKILLS / 515

Supporting transdisciplinary learning using Challenge-Based Learning in planning education

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Challenge-Based Learning (CBL) refers to a methodology whereby students are invited to apply their knowledge and skills to address real-world problems. In planning education, this methodology has been adopted to several challenges such as urban sustainability transitions. In higher education institutes CBL is seen as a methodology that can facilitate student's critical thinking, generic and transdisciplinary skills, long-term retention and student-led learning. It also has the advantages that it facilitates the engagement of students with real-life problem owners such as city authorities, neighbourhood associations, and developers. However, when bound to the context of a specific course within a specific disciplinary field or master programme, the transdisciplinary ambitions of CBL are often difficult to emulate. This paper aims to discuss how higher education networks such as the ECIU (European Consortium of Innovative Universities) and the micro-credential scheme can be used to facilitate these transdisciplinary perspectives being incorporated into a specific course. The paper describes the rationale and learning approaches for a course in "Planning for Livables Cities", that is currently being developed as a CBL course, to be adopted to ECIU students. We reflect on the framing of learning outcomes, learning moments and assessment tools that can reflect, support and assess this transdisciplinary learning in a CBL context, while supporting planning students learn discipline-specific goals, and engage with the planning context of the case. We also describe challenges and limitations that we envision we will encounter when delivering this course, namely in examination requirements, and transversal individual and group learning. The paper contributes to discussions on methodological tools that can be adopted to planning education to generate critical, engaged, and empathic planners.

Keywords:

Challenge-Based Learning; Transdisciplinarity; ECIU

T_08 EDUCATION AND SKILLS / 1295

Horizontality in practice: an illusion or a horizon for international cooperation workshops?

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This proposal aims to provide a specific answer to the question posed in Track 8: Is it possible for the planning practices and pedagogies derived from developed geographies to become responsive to the planning experiences of the entire world?

This methodological and empirical contribution is based on feedback from an international cooperation workshop in urban planning that has been bringing together French and Tunisian partners in the city of Sfax for the past twelve years (2012-2024). This studio, set up at the Université Grenoble Alpes, aims to get students, teachers, universities and local partners from both countries to work together as horizontally as possible on a wide range of urban issues: rehabilitation of the old town, traditional houses and orchards on the outskirts, maintaining urban agriculture, the place of rural dwellers, children and migrants in the city, accessibility of public space for people with disabilities, daily mobility for residents, the link between the train station and the city, etc.

We speculate that it is possible to move towards a form of adaptation to local planning experiences by rethinking the teaching and cooperative postures of French teachers and

students (exchange rather than transfer of skills, work over time, co-construction) and by profoundly and incrementally modifying pedagogical engineering. The serial nature of the studio over a long period of time and the co-construction of work topics between teachers have resulted in workshops that are less prescriptive and more processual and shared. Some studios took the time to explore a little-documented urban phenomenon (year 1), to problematize it (year 2) and then to network local stakeholders so that they could take over. These studios have transformed the perspectives of French students, and have sometimes led to thesis work by PhD students from both countries.

The result, however, is never fully satisfactory, as horizontality is only a distant horizon. Significant differences remain between partners in terms of investment capacity and curriculum. Reciprocity of experience, although a principle, is rarely effective, and the geopolitical context between the two countries often catches up with the studios.

Keywords:

International urban planning studio; horizontality; transformation skills; France; Tunisia

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T_08 EDUCATION AND SKILLS / 1617

Industry-Academia Partnerships in Cross-Border Innovation: A Case Study of Future Workforce Initiatives

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There is a pressing need to reassess, innovate and improve educational frameworks to prepare a future-ready workforce reflecting on the escalating global challenges. In this contribution, we examine the pivotal role of industry-academia partnerships in fostering innovation in cross-border areas in the EU, focusing on initiatives designed to provide students with the skills and knowledge necessary to address multiple emerging socio-economic and environmental issues. Drawing from the Twin City Future Innovation Manufacturing Hub project (supported by Interreg Slovakia-Austria), a collaborative

endeavor between Slovakia and Austria, this study explores how joint efforts between educational institutions and industries can lead to the development of innovative educational programs aiming to bridge the gap between theoretical knowledge and practical application and ensuring that graduates are well-prepared to contribute effectively in their professional fields. We delve into the design and implementation of educational initiatives in Vienna-Bratislava cross-border area that integrate cutting-edge technologies and pedagogical approaches on elementary, high school, university and lifelong level. Besides highlighting best practices, we identify key factors that contribute to successful collaboration between academic institutions and industry partners. Furthermore, the contribution addresses the challenges encountered in aligning diverse educational systems and industry expectations across borders. It proposes strategies to overcome these obstacles, emphasizing the importance of adaptable curricula, continuous engagement of stakeholders and related parties and the cultivation of a culture that values innovation and lifelong learning. In this contribution, we aim to contribute to the discourse on planning education by providing empirical evidence and practical insights into how industry-academia partnerships can serve as catalysts for educational transformation as part of industry 4.0 transformation and just green transformation. We underscore the necessity for educational programs to evolve in response to global challenges, advocating for collaborative approaches that transcend national boundaries and disciplinary silos.

Keywords:

Educational innovation; Cross-border collaboration; Industry-academia partnerships; spatial planning

T_08 EDUCATION AND SKILLS / 1077

Research-Driven Pedagogy: Advancing Transformative Skills in Spatial Justice and Urban Sustainability through Educational Innovation. Insights from the REPLACE Project

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This study examines how innovative pedagogical practices can equip future generations with the skills and knowledge necessary to address the socio-economic and environmental challenges of our time. In line with the AESOP Track 8 "Education and Skills," this research integrates experiential learning and transformative teaching methodologies to foster critical and creative capacities in students.

The findings stem from the European-funded project "REPLACE - REgional governance and PLAnning processes dealing with social justice and the territorial Cohesion policy in Europe," conducted between 2023 and 2024. These activities introduced key concepts of spatial justice, sustainability, and urban planning using participatory approaches. A central innovation was the REPLACE Pedagogical Game, designed to make complex urban planning principles accessible to primary school students through role-playing, resource management, and collaborative problem-solving.

Key pedagogical themes addressed in the game include:

- **Fostering Transformative Skills:** The game emphasised critical thinking, problem-solving, and decision-making through activities that required students to balance social, environmental, and economic constraints.
- **Experiential Learning:** By actively participating in urban planning scenarios, students learned by doing, engaging directly with concepts such as resource scarcity, equity, and sustainability.
- **Collaboration and Interdisciplinarity:** The role-differentiation within the game—

featuring positions such as “Treasury Accountant,” “Harmony Guardian,” and “Shape Creator Master”—encouraged teamwork and interdisciplinary dialogue, reflecting the collaborative nature of real-world urban planning processes.

- **Civic and Spatial Awareness:** Students were challenged to address socio-spatial inequalities by designing equitable solutions that considered the needs of diverse user groups and the environmental impacts of their choices.

The game was piloted within workshops conducted at the International European School “Altiero Spinelli” in Turin, Italy. This educational setting offered a dynamic and diverse environment to test these innovative tools. The workshop combined theoretical discussions with hands-on activities, enabling students to apply their knowledge to realistic planning challenges.

Civic engagement was a key focus of the workshop, encouraging students to explore the diverse uses of public spaces and the interplay between structured and unstructured environments. They considered how integrating varied uses can address different needs, while recognizing the critical role of resources in making spaces responsive to user demands. Discussions highlighted how territorial disparities in resource access perpetuate socio-spatial injustice and examined how redistributive policies, like the European Union’s Cohesion Policy, can support sustainable and equitable territorial development.

Using tools such as structure, user, function, and role cards, participants simulated urban planning scenarios that addressed budgetary constraints, environmental costs, and user inclusivity.

The results of these activities highlighted significant educational outcomes, demonstrating the effectiveness of the REPLACE Pedagogical Game:

- **Skill Development:** Participants enhanced their competencies in mathematical reasoning (e.g., managing budgets), spatial orientation (e.g., interpreting maps and planning), and civic engagement (e.g., collaborative deliberation and decision-making).

- **Critical Reflection:** Students gained deeper insights into sustainability and socio-spatial dynamics, analysing the implications of their planning choices.

- **Innovative Outputs:** The game encouraged the creation of novel ideas and practical solutions, contributing to the REPLACE project’s aim of fostering regional cohesion and spatial justice.

This study highlights the potential of integrating research-driven and experiential methodologies into planning education. By fostering critical thinking, collaboration, and creativity, the REPLACE Pedagogical Game serves as a model for equipping future planners with the transformative skills needed to address complex global challenges such as climate change, social inequalities, and urban resilience. This approach underscores the importance of embedding educational initiatives within research projects to bridge the gap between theory and practice, preparing a new generation of planning professionals for the multifaceted demands of urban and regional development.

Keywords:

Transformative; Pedagogy; Spatial Justice; Urban Sustainability; Experiential Learning

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T_08 EDUCATION AND SKILLS / 1588**Reimagining Education through Systems Thinking, Community-Centered Design and Engaged Pedagogy****Authors:** Chiara Cocco¹; Tabassum Ahmed^{None}**Co-author:** Miriam Victoria Fernandez Lins¹¹ *University College Dublin***Corresponding Authors:** tabassum.ahmed@ucd.ie, chiara.cocco@ucd.ie, miriam.lins@ucdconnect.ie

As universities increasingly situate themselves as active agents driving changes in their urban setting and responding to climate change, their capacity to influence urban strategies, policies and community well-being also grows. At the same time, there is increased urgency to adapt the current curricula of spatial practice that equip upcoming design professionals with the skills and knowledge needed to combat urban challenges, such as collaboration, climate change adaptations, and the ability to harness new technologies. Integration of community-engaged methodologies and systems thinking are two such topics that have proven as essential components in this transformation of pedagogy. This contribution reflects on the "Common Ground: Campus, Community, and Climate" initiated at the second-year architecture studio of University College Dublin (UCD). The studio reimagined architectural pedagogy through systems thinking and situated, engaged and participatory approaches, especially emphasising collaboration with local communities and interdisciplinary exchanges.

The initiative emphasised the co-creation of knowledge and design solutions with local communities at the interface of campus, urban environments and climate crisis. Borrowing tools and methods from disciplines such as planning, geodesign and geography, students ventured into three design cycles approach which exposed them to interdisciplinary knowledge such as participatory mapping, environmental metabolism, commons, behaviour change theories, etc. The use of spatial data, causal loop diagrams and metabolic drawings allowed students to describe and understand various processes present on the chosen sites. Key events also included open-to-all workshops, peer review, reflective practice and collaborative design sessions, equipping students with hands-on experience to investigate the environmental, social, economic, ecological and topographic fabric of their sites. As such these cycles enabled students to investigate pressing challenges such as campus permeability, connectivity, and climate resilience as part of their design strategies while fostering stronger connections between the university and its surrounding neighbourhoods.

By embedding community engagement and systems thinking into the curriculum, the Common Ground studio in its first iteration has provided a step towards testing an interdisciplinary approach which ensures students can grapple with the complexities of urban adaptation and social sustainability as well as learn conventional design tools. It is important to note that reflections and evaluation also made apparent some challenges faced during the process. For instance, staff highlighted challenges such as scope within 12 weeks to strike a balance between practicing conventional design skills and tools with that of more adapting interdisciplinary skills as part of the design process. The studio process and inputs related to the community engagement was evaluated which contributed towards a reflection and continuous improvement of teaching and learning. Therefore through an iterative process this paper investigates the potential of such pedagogical approaches in preparing future practitioners, especially by rethinking "business as usual" practices in education.

Keywords:

systems thinking; community engagement; architecture studio; climate change adaptation; education

T_08 EDUCATION AND SKILLS / 1780**“Worlding” as a Pedagogical Approach in Basic Design Studio****Authors:** Elif Hant¹; Gizem Parlak²; ahmetcan alpan¹; kevser ismet üstündağ³¹ *Mimar Sinan Fine Arts University*² *MSGSU*³ *mimar sinan fine arts university***Corresponding Authors:** gizem.parlak@msgsu.edu.tr, kevser.ustundag@msgsu.edu.tr, ahmetcanalpan@gmail.com, elif.hant@msgsu.edu.tr

The Basic Design Studio in Urban and Regional Planning education is designed as a means of developing creative thinking and spatial perception by considering design in the context of conceptual relationships. In this process, it is aimed to develop students' spatial thinking skills by deepening the basic components of design from an interdisciplinary field such as planning/architecture/art/philosophy/sociology. Human-induced environmental disasters along with global climate change, which we see the impact of from daily life to macro level planning decisions, require us to put innovative approaches to urban life on our agenda. From streets to urban infrastructures, it is important to adopt visionary approaches to urban planning that are more equitable, sustainable, resilient and developed in dialog. In this context, the basic design education developed through art and design disciplines has been reconstructed for urban planning students within the scope of the studio and transformed into a pedagogical framework that enables them to increase their spatial literacy, develop creative problem solving skills, gain collaborative practice and think critically about urban constructs.

Starting from the point and expanding towards the city, the basic design education process includes not only two-dimensional and three-dimensional productions on objects, concepts, events and facts, time, and space but also performances and new media productions. In this context, urban spaces become a part of the studio and turn into productions such as drawing, mapping, model, installation, video, performance together with qualitative and quantitative spatial research methods. This process, together with basic design education, strengthens students' perception of space and the city, while at the same time developing their critical thinking along with creative production techniques. In this context, during the studio process, students are expected to make productions in line with basic design principles, while at the same time they are expected to develop speculations about the temporal-spatial arrangements we live in with the words/concepts given to them. Referring to Donna Haraway's (1997) concept of “worlding”, this article aims to produce new narratives, question existing categories, and explore ways to achieve the current transformation through both discursive and spatial practices.

Within the scope of the study, the research modules developed in the basic design studio between 2022-2025 on the themes of “nomadism”(2022-2023), “utopia/dystopia”(2023-2024), “symbiosis”(2024-2025) will be explained as a case study. The conceptual construction of these study modules goes through research and design processes that mediate the questioning of the possibility of another world. Here, first of all, it is aimed to shake the canonical discursive-spatial configuration in studies ranging from fictional literary narratives to research on local communities. Then a storybook is written in collaboration with a human-non-human character to construct a new narrative of place. With this new narrative, people, animals, plants, objects, various natural phenomena, etc. mediate the production of place. As an important part of this process, designing wearable structures or prosthetics related to the scenarios they have created. A collaborative object in the narrative, as a prosthesis integrated into the human body, rejoins the existing world as a “cyborg”(Haraway, 1985). This process continues with the reproduction of an alternative spatial narrative of a specific urban area in Istanbul, accompanied by models and performances.

This methodology offers an urban space-oriented design process that encourages students to engage critically-creatively with the built environment. Through the case study, this paper situates “worlding” as a pedagogical model for the possibility of other worlds within creative production processes, while at the same time emphasizing the creative and critical potential of basic design. Finally, an evaluation is presented on the potential of this methodology to reshape the relationship between design education and urban planning practices.

Keywords:

Urban planning education; Basic Design; Worlding; Critical spatial thinking

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T_08 EDUCATION AND SKILLS / 1717

Exploring AI and VR in Challenge-Based Learning: A Responsible Futuring Approach for Inclusive Co-Design

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Challenge-based learning and responsible futuring approaches create empathic and collaborative learning opportunities by engaging students with real-world problem-solving through interdisciplinary, participatory methods. Challenge-based learning promotes experiential, problem-driven learning by engaging participants in real-world challenges. At the same time, responsible futuring ensures that envisioned solutions and future developments integrate social and ethical dimensions, promoting inclusive and sustainable urban spaces. These approaches align with the living lab concept, emphasising co-creation, experimentation, and real-world testing in collaboration with stakeholders. In response to the need for novel approaches in teaching and learning, we explored artificial intelligence (AI) and virtual reality (VR) as emerging tools that can equip future planning practitioners with the skills to address contemporary challenges, such as inclusive urban climate adaptation. In this context, we explored the effectiveness and usability of AI and VR in a responsible futuring workshop, assessing their impact on inclusive co-design processes. Specifically, we examined how these technologies support creative ideation, facilitate diverse perspectives, and contribute to designing climate-sensitive, inclusive blue and green urban spaces in a neighbourhood adjacent to our university campus.

Three groups of five students adopted the roles of diverse stakeholders, including an older adult with limited mobility, a child with a migrant background, a homeless person seeking stability, a low-income parent, and an urban planner focused on inclusion. The workshop followed four responsible futuring stages: Connect and Relate, Understand

and Frame, Imagine and Ideate, and Reflect and Reframe. Each group used different tools: 1- The VR Group navigated existing situations during “Understand and Frame,” 2- The AI Group used UrbanistAI to visualise scenarios in “Imagine & Ideate,” and 3- The non-digital Group worked with plastic construction bricks and printed images.

Feedback from students, six observers, and three facilitators highlighted AI’s usefulness in refining designs but emphasised the need for greater user control and realism. VR enhanced spatial understanding, but students were too focused on learning to use the technology, which came at the expense of neighbourhood exploration. Additionally, the interplay between abstraction and realism emerged as a key consideration in the creative process. Observations suggested that more abstract, hands-on methods, such as plastic construction bricks, facilitated open-ended exploration and early-stage ideation, encouraging broad, divergent thinking. In contrast, AI-driven simulations provided a more structured and detailed approach, proving more useful in the later stages where refining and concretising solutions became the primary goal. The responsible futuring framework effectively facilitated diverse perspectives through personas, though limited time restricted deeper empathy and reflection. Students identified shared priorities, such as safety, accessibility, and social connection, while exploring potential conflict between personas.

Recommendations include extending time for familiarisation with tools and personas, incorporating real-world stakeholders, and improving the realism of AI representations. The workshop demonstrated how AI and VR can support empathic and collaborative learning and link to the living lab concept by addressing real-world challenges.

Keywords:

Challenge-based learning; collaborative learning; responsible futuring; living labs; blue-green spaces

T_08 EDUCATION AND SKILLS / 1746

Agents of Change: Redefining Urban Design Education Through Action and Agency - How studio-based learning, student agency, and taking an active stance equips future planners to address real-world challenges

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In light of the urgent environmental, social, economic, and political challenges of our time, urban design and planning education must evolve to equip future practitioners with transformative skills. This paper presents a pedagogical approach that foregrounds student agency, interdisciplinary engagement, and systemic thinking to prepare them for the complexities and urgencies of real-world challenges. This approach requires students to take an active stance, and choose their roles and ways of engagement. Drawing on extensive teaching experiences at the Technical University of Munich (TUM) and the University of Utah, as well as advisory roles in TUM’s Urbanism Graduate Program, we critically reflect on our methodologies and advocate for a studio-based learning model that empowers students as proactive agents of change.

A key feature of this approach is the emphasis on student agency from the very beginning of the semester. Students are encouraged to take ownership of their education by designing their own projects and reaching out to actors outside academia even before the studio formally begins. In the open call, we emphasize urgencies and encourage positionalities towards contemporary crises, positioning educators and students as peers

facing shared global challenges. Rather than preconceived questions, scales, and sites, we provide a framework for discussion and idea development. During the studio, we establish and maintain a non-hierarchical and collaborative learning environment, and encourage the students to shape their studio proactively.

A distinctive element of this framework is its focus on fostering social entrepreneurship among planning students, inspiring them to create “spin-off stories”—projects that extend their academic work into practical, impactful solutions. By grounding the studio in real-world connections from the outset, we ensure that students develop actionable strategies in collaboration with diverse stakeholders, bridging the gap between academia and practice.

Through case studies and outcomes derived from our urban design research studios, we illustrate how this pedagogical approach prepares students to become influential contributors to sustainable and equitable urban development. By integrating social entrepreneurship and fostering student agency, we emphasize the importance of creating educational environments that transcend technical knowledge, enabling students to actively shape their education and develop a critical stance in addressing global challenges.

This contribution adds to the evolving discourse on planning education, highlighting the urgent need for curricula that nurture a generation of planners prepared to lead transformative urban initiatives and actively co-create a just, resilient, and inclusive world.

Keywords:

spatial education; design studios; agency in education

T_08 EDUCATION AND SKILLS / 1853

Epistemological Uncertainties in Planning Education: The Transformative Role of Studio Pedagogy

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Planning education faces a persistent challenge: equipping planners with the knowledge and skills to navigate an increasingly uncertain and complex world. The discipline's boundaries remain fluid (Myers and Banerjee, 2005), and its intellectual foundations are interdisciplinary and ever-evolving (Davoudi, 2009). This complexity makes planning difficult to define, but it also fosters versatility, flexibility, and creativity. As Ferreira, Sykes and Batey (2009) metaphorically describe it, planning theory resembles the mythical multi-headed creature, the Hydra, in that it lacks a single dominant paradigm and is made up of multiple paradigms that coexist. The evolving nature of planning theory raises critical questions: What knowledge areas should the planning discipline prioritize? How can educators prepare students to deal with the social, environmental, and ethical uncertainties of contemporary urban challenges? Davoudi & Pendlebury (2010, s. 638) identify three key areas: (1) space as the core object of inquiry; (2) the nature of integrative knowledge; and (3) the interface between knowledge and action.

Kunzmann (1985, p. 442) states that planning education has been in crisis since its inception and will continue to be so, but that this should not be seen as a weakness. This paper also considers uncertainty as an inherent feature of planning education and argues that it can be a source of strength rather than a limitation when managed strategically. The need to address epistemological uncertainty necessitates an adaptive and dynamic pedagogical approach that reflects the complexity of planning itself. This study explores the following research question: How can studio pedagogy be used as a transformative

learning environment to equip planning students with the knowledge and skills necessary to navigate contemporary socio-spatial challenges and epistemological uncertainties in planning education? In line with this question, the research will employ reflexive and situated learning methods.

This paper argues that studio pedagogy is a critical tool in equipping students with the necessary skills to respond to contemporary urban challenges. The evolution of studio pedagogy has been shaped by broader paradigm shifts in planning education. In response to urban issues of the late 1960s and early 1970s, planning adopted a social science orientation, expanding the definition of 'studio' as a pedagogical approach (Wetmore and Heumann, 1988). This shift is described by Baum (1997) as a 'hidden curriculum' that transformed practice-oriented teaching. By the late 1990s and early 2000s—what Anacker (2024) refers to as the fourth era of planning—the studio once again became a subject of planning education research, reflecting a renewed interest in practice-based education and studio-based learning. We argue that two key dynamics triggered the return of the studio in planning schools: (1) The Rise of Neoliberalism and the Importance of Space and (2) Ecological Thresholds and Social Inequalities. The strength of studio pedagogy lies not only in its capacity as a medium in which theoretical knowledge is transmitted and practice is learnt, but also in its capacity to encourage students to question the way they think when making ethical and political decisions.

By repositioning studio pedagogy as a transformative learning environment, this study contributes to the debate on how planning education can better respond to contemporary socio-spatial challenges. We believe that a pedagogical transformation that goes beyond theoretical teaching and actively prepares students for the uncertainties and ethical complexities of professional planning practice is essential.

Keywords:

planning theory; planning education; studio pedagogy; transformative learning

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T_08 EDUCATION AND SKILLS / 214

Urban planning: how to introduce the discipline?

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In this paper I look back on the process of writing a handbook, intended to introduce the discipline of urban planning to bachelor's and master's students in Flanders and Brussels (Belgium). For many of these students, particularly those enrolled in programmes of architecture or geography, this handbook serves as their sole introduction to the field within their curriculum. The challenge was therefore to cover the breadth of topics that constitute the field in an exceptionally compact format, while maintaining minimum standards of theoretical framing, and staying attuned to the territorial, cultural and institutional peculiarities of the context of Flanders and Brussels. The book draws inspiration from classic handbooks, including those by Peter Hall and Mark Tewdwr-Jones, as well as Chris Couch, while aligning to a local tradition of reflecting on the built and non-built environment. Its intended audience extends beyond students to include local policymakers and civil society, and it is therefore written in Dutch. The present paper reflects on the considerations that shaped the book and aims to stimulate discussion on creating and updating teaching materials.

Keywords:

planning education; textbook; Flanders

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T_08 EDUCATION AND SKILLS / 397

Pedagogy for the future: Equipping students for complex and climate-relevant practice

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What do students need to know and be able to do to work effectively in the unfolding world of climate breakdown, and polarized challenges to governance? In our recent curriculum transformation, this question has been at the heart of our work in the School of Planning and Sustainability at the University of Northern British Columbia. In this paper, we present the theories that guide the work, the learning and curriculum contexts, and our reinvented planning studio curriculum. We also show some initial student learning results.

Our first curricular principle is that the future is not like the past. Climate breakdown is accelerating and affecting communities worldwide, in a litany of fires, floods and droughts. We are also dealing with increasingly intense socio-cultural divisions. Fueled by profitability –the information industry accumulates through fear, hatred and distrust. Students will need to be equipped to develop new approaches to work ethically and effectively in a new future.

Our second curricular principle is that knowledges of the past are vital. The identity of the profession, while contested, also roots us in a set of practices and knowledges that equip us to engage the future. Pursuing effective climate action is a grand challenge, and also a renewed opportunity to heal and avoid reproducing the wrongs of colonialization, scientism and dehumanization.

We introduce this future/past contrast to highlight the tension between the predictable and programmatic 'here is what to do' elements of planning knowledge –from the capacity to encounter and tackle the unpredicted. from the unpredictable and developmental. In this contrast, 'the past' is roughly defined as the topics laid out in standards.

In planning education in Canada, the accrediting body reviews curricula for a set of conventional ‘competencies’ across subject areas. Matters of intergenerational equity mean our program is also responsible to emerging methods that grapple with foresight, futurity, uncertainty, and transformation. As we engage with diverse knowledge systems in our curriculum, we have found it useful to balance the ‘programmatic’ with the opportunity for students to learn in ways we did not predict.

In the studio progression along with course work, we have attempted to ‘program’ such that students learn and are mentored in the planning knowledges ‘of the past,’ while co-creating the abilities that we expect will allow them to thrive in an uncertain future. We are guided by pedagogical theories that speak to both these cases. For those competencies that are rooted in known practices, we have tried to make better use of ‘student learning outcomes’ theory. We can articulate these skills, set standards, and attend to student work to measure learning. As we are certain that our students will need to have the capacity to critically and resourcefully develop new practices, we are guided by the theories that emphasize ‘development capacity’—transformative learning, and experiential learning.

As we report our experience with an ongoing process of curriculum change, we will also present our context, including our opportunities and challenges. The realities of our northern region and our ongoing effort to manage an institutional change process in a theory-relevant way is a story worth telling.

We have implemented a core progression of studio courses, emphasizing experiential and community engaged learning. Our studios have responsibility for ‘accreditation competencies,’ but it is also important that these studios feature the elements of uncertainty, mentorship, and ‘learning-to-learn’ that are key to students’ development as future professionals. Finally, we will offer some examples of student work as examples of both competency-based learning, as well as student capacity development in uncertainty.

Keywords:

studio pedagogy; planning curriculum; climate education

T_08 EDUCATION AND SKILLS / 192

Bridging Theory and Practice: Peer Learning as a Pedagogical Approach to Teaching Planning Theory

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One central challenge in planning theory education is connecting planning theory and practice. Planning theory literature is often difficult to comprehend, since its language can resemble an expert discourse, encoded and inaccessible to many readers (Thompson, 2000). Consequently, conventional lecture-based courses might not foster deep learning of planning theory. Furthermore, there are several challenges in the pedagogy of planning theory. For example, Frank (2002) emphasizes the need for teaching methods that allow students to observe planning in action and improve their understanding of the planning outcomes. Frank also underscores the challenge of maintaining an inspiring learning environment. Similarly, Olsen (2018) argues that engaging students in role-playing can enable them to grapple with the practical implications of planning theory and foster their development as reflective practitioners. Furthermore, Chen (2024) shows how peer-learning fosters student interaction, promotes open communication, and enhances students’ confidence (Chen, 2024).

This article examines the pedagogical methods used in a planning theory course delivered during the 2024–2025 academic year. This course is offered to master's students from diverse academic backgrounds. It incorporates peer-learning and teamwork on international case studies, which encourages collaborative problem-solving and exposes students to multiple perspectives on planning theory and practice. The course fosters a supportive and stimulating environment that encourages discussions and debates, while offering diverse tasks involving individual, pair and teamwork. These tasks support students to demonstrate different knowledge, skills, and attitudes towards planning, for example, presentations, case study analysis or thematic essays. They also enable students to employ the planning theory lens to understand actions taken by planning bodies. The article employs observation of the learning process, analysis of the course design, and students' feedback on their learning experiences.

For students, this course offers an exploratory atmosphere, enabling them to apply abstract planning theories to cases from real-world, critically evaluate alternative approaches, and engage in creative, problem identification. It further broadens their geographic and institutional knowledge, and prepares them for their professional careers.

Instructors act as facilitators, creating an open environment while exploring concepts students find challenging to grasp or implement. This initiative positions Aalto University's Department of Architecture and Urban and Regional Planning courses as an innovative approach to planning education, which contributes to a repository of planning-specific cases and connecting theory to societal interests. By embedding peer-based learning and practice-oriented case studies in the course, this approach aims to enhance professional judgment and inspire creative solutions to the pressing challenges faced by planners today.

The contributions of this article are multifaceted. First, bridging the gap between theory and practice prepares future planners as reflective practitioners. Second, examining the evolution of planning theory provides a critical perspective on various schools of thought, highlighting their limitations and critiques. Third, analyzing case studies empowers learners to confidently engage with theory. Fourth, combining peer-learning in a seminar environment and teamworking enhances learner-centred education. Finally, allowing freedom in task selection fosters leadership and authorship among learners.

Keywords:

Planning theory; Peer learning; Pedagogy; Case studies

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T_08 EDUCATION AND SKILLS / 535

A Map of Planning - How spatial planning is taught and researched around the world

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Since its beginnings more than a century ago, the discipline of planning has developed into an academic field relevant in research, teaching and practice. For a long time, however, planning was merely understood as a practical problem-oriented part of engineering work. It was “trapped inside a modernist instrumental rationalism” (Healey 1997: 7). In the 1960s controversial debates began about the relationship between planning and politics, about the understanding of values in planning and about the legitimacy of planning statements. Since then, planning has –at least partly –shifted from planning as a design-based art to planning as a (social) science (Davoudi, Pendlebury 2010).

This paper examines how spatial planning is taught and researched today at planning schools around the world. The empirical basis is formed by selected major planning schools on all continents and their study programs. According to UN Habitat (2009), the only report that attempts to provide an inventory of planning education at the university level worldwide, there were back then 550 universities in 81 countries that offered planning degrees. Today, there are likely to be many more. Any empirical work must therefore be selective.

In the research project presented here, a list of 20 major planning schools in Europe, North America, Latin America, Africa, Asia and Australia was therefore compiled in consultation with the continental associations of planning schools –AAPS, ACSP, AESOP, ALEUP, ANZAPS and APSA –and on the basis of a desk research. Between October 2023 and May 2024, ten planning schools on all six continents were visited to conduct semi-structured interviews with faculty members as well as students and to observe classes. At the beginning of 2025, an additional online survey was conducted at a total of twenty planning schools worldwide.

The paper presents a comparative overview of the results of the empirical research. Despite the sometimes dramatically different issues that spatial planning has to deal with in different parts of the world, the research indicates that planning education is remarkably similar and that the conceptual and theoretical understanding of spatial planning is surprisingly homogenous –despite the lack of a global canon of standard textbooks. The homogenizing influence of standards such as the AESOP core curriculum (Frank, Koll-Schretzenmayr 2024) and the PAB accreditation standards is evident, as is the Anglo-American hegemony in literature (Stiftel, Mukhopadhyay 2007) and the significant increase in international cooperation and networking in the field (Haghani 2023).

The presented research ultimately produced a map of planning as a discipline that provides an overview of what is understood by planning in different parts of the world and how the travelling concept of planning changes as it travels. It includes various aspects of applied planning (comprehensive planning, sectoral planning, instruments) and of the foundations of planning (basic disciplines, theories, methods).

Keywords:

Planning education, planning curricula, planning schools, travelling concept

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T_08 EDUCATION AND SKILLS / 180**Strengthening Interdisciplinary Cooperation in Planning Education****Author:** Harpa Stefansdottir¹**Co-author:** Anna Sigridur Johannsdottir²¹ *Agricultural University of Iceland*² *Icelandic University of the Arts***Corresponding Authors:** annasigridur@lhi.is, harpastefans@lbhi.is

This project, conducted in 2023–2024 with funding from the Universities' Cooperation Fund, organized by the Minister of Universities, Industry, and Innovation in Iceland, focuses on strengthening interdisciplinary collaboration in planning education. The initiative examines the educational offerings and potential collaboration models among Icelandic universities—Agricultural University of Iceland (LbhÍ), University of Iceland (HI), Reykjavík University (HR), and Iceland University of the Arts (LHÍ)—to enhance synergies, improve the quality of the M.Sc. program in planning at LbhÍ, and foster efficient interdisciplinary discourse.

The need for this analysis is particularly relevant in Iceland due to its small population, limited student numbers, and relatively few academic staff. These factors pose challenges in maintaining the competitiveness of planning education with international programs. Moreover, the geographical distribution of planning-related disciplines across different universities complicates collaboration. Recognizing planning as an inherently interdisciplinary field, drawing from natural sciences, social sciences, and architecture, this project seeks to address these challenges systematically.

A steering group was established, comprising representatives from the participating universities and various academic disciplines related to planning. Through their discussions, a foundation was laid for identifying common ground and viable collaboration models.

The project was divided into four main components:

1. Reviewing competency criteria for planning professionals, guided by AESOP's educational qualification criteria and Icelandic local conditions.
2. Analyzing current educational offerings to identify opportunities to strengthen the M.Sc. program in planning.
3. Exploring how planning-related topics could be incorporated into other academic programs and how undergraduate students could be better prepared for pursuing an M.Sc. in planning.
4. Developing and assessing potential models for interdisciplinary collaboration among partner universities.

The project emphasized the role of teaching formats and methods in structuring collaborative efforts. Studio-based learning and project work, particularly in collaboration with design disciplines like architecture and landscape architecture, were identified as key approaches. For other disciplines, seminar-based formats were deemed effective. Interdisciplinary courses allow students from diverse academic backgrounds to attend shared lectures, work on joint projects, and engage in collaborative reflection, fostering the exchange of insights and broader perspectives.

The results highlighted the primary benefits of interdisciplinary collaboration:

1. Applying knowledge from various fields to real-world planning practice.
2. Offering courses in specialized planning topics.

3. Promoting interdisciplinary discussions to improve learning outcomes and the development of planning criteria.
 4. Encouraging reflection on one's academic field through dialogue and practical application.
- By increasing the number of students in otherwise small fields, the project creates a foundation for richer communication and a broader perspective in planning education.

Keywords:

Interdisciplinary Planning Education; Educational collaboration models; Academic synergies; Studio-Based Learning

References:

See comments above.

T_08 EDUCATION AND SKILLS / 188

Reimagining urban futures through speculative fiction: nurturing hope and resilience in planning education

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Planning has a major role in shaping the imaginaries of hopeful and resilient futures. In a world increasingly defined by polycrises, planning is confronted with the urgency for transformative thinking. Despite acknowledging the need for just and sustainable futures (Elmqvist, 2018), planning visions often remain technocentric or dystopian, maintaining the myth of human-nature separation and perpetuating a narrow reactive perspective on futures. Speculative fiction, a genre defined by centering the imaginative over the literal, goes beyond techno-centered survivalism by revealing the limitations of traditional imaginaries (Bina et al. 2020). Speculative fiction has a unique capacity to provoke deep engagement with complex uncertainties, redefining present problems through possible futures, finding alternatives to traditional –sometimes unconscious – societal structures, offering planning education possibilities for imagining futures that are unbound by the constraints of the present. Imagination as such is thereby understood as a cornerstone of transformative education.

Drawing on interdisciplinary scholarship, this paper situates speculative fiction as a means of reconceptualizing resilience through narratives that challenge the reductive binaries of human and non-human, urban and ecological, instead embracing relational and systemic thinking. Central to this is the framing of speculative fiction as a collaborate act of world-building. Unlike traditional planning exercises, which often prioritize immediate problem-solving, speculative fiction encourages students to craft long-term, transformative visions. Incorporating speculative fiction into planning education offers a path toward realizing not only the potential of students but also the transformative possibilities of the field itself (Pereira et al. 2019).

The aim of this paper is to explore the potential of speculative fiction as a transformative tool for planning education, enabling students and educators to imagine positive and hopeful futures that are rooted in interconnectedness and resilience. Drawing on semi-structured interviews with Finnish university-level planning educators, the paper

explores how speculative storytelling can inspire planning education, fostering a capacity for imagination and creative engagement with the uncertainties and complexities of possible futures. The preliminary findings suggest that by inviting students to envision alternative futures, speculative fiction fosters not only a capacity for critical reflection but also a proactive ethos rooted in hope and resilience. By integrating speculative fiction into planning education, students are encouraged to move beyond the limitations of current paradigms. They are invited to consider futures where resilience is intertwined with justice, where diversity is not merely tolerated but celebrated. However, the implementation of speculative fiction is not straightforward, as the field is still strongly embracing the use of more evidence-based and analytical methods.

Keywords:

speculative fiction; planning education; hope; imagination; sustainability transformation

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T_08 EDUCATION AND SKILLS / 1873

AI + Geospatial Models for Engagement and Performance Measures in the Pedagogy of Sustainable Planning Studio.

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The emergence of the 15-minute city (Moreno, 2024) concept is closely linked to the climate crisis, particularly after the United Nations Climate Change Conference, COP21, held in Paris in December 2015. In that year, a consensus and adopted the Paris Agreement, a major international agreement aimed at mitigating the effects of climate change. This agreement recognized the need to take urgent action to reduce greenhouse gas emissions and strengthen society's resilience to the inevitable impact of climate change. Scholarship on decision-making in the planning practice and automation shows that integration of cutting-edge technologies can guide decision-making, enhance resource allocation, predict trends, engage citizens, and more (Ghisleni, 2024). The consequences of rapid economic growth and urbanization have led many cities that suffer from numerous problems such as traffic congestion, noise, air and water pollution to rethink their decision process through various scenario simulation and spatiotemporal analysis that addresses socio-spatial inequalities and predict approaches for sustainable urban development (Wang et al., 2021). An AI-based urban planning system capable of outperforming human urban planners in creating projects. Researchers discusses the factors used to define the ideal urban plan under the "15-minute city" concept by training the system using previous human-designed projects and factors that are predictive of positive outcomes (Ghisleni, 2024).

Planning studio instructions have also seen a transformation to integrate technology at various levels and scopes with pedagogies that integrate structured methodology for attaining academic goals and accreditation with the intention to align with professional

practice. In this paper, I review and argue the use of several AI and geospatial modeling tools in a sustainable planning foundation studio at the US Campus of the University of Colorado Boulder. The City of Denver, Colorado was an open urban lab for this studio. Students explored the existing development code, newly adopted ordinances, and in-progress resiliency and climate action initiatives. In this studio 19 undergraduate students were introduced to sustainability and resilience measures, and contemporary urban design to examine urban growth as well as the development regulations on four prototype neighborhoods. The neighborhood characteristics entail different building typologies and density in order to propose a retrofit plan for each within the framework of the 15-minute neighborhood concept. As an undergraduate studio, the pedagogy challenges them to think through a multi-faceted and complex lens that intertwines environmental and equity measures. The optimal goal was to equip students with technical skills included focusing on geospatial tools and mapping and using different Geographic Information Systems apps and online tools for 2D, 3D mapping and data visualization apps for interactive data visualization (Esri, 2024). In this paper, I discuss the pedagogical innovations that included collaboration with the Immersive Media Lab, where students utilized VR/AR Meta devices and the Sketchup Software (Trimble, 2024) to develop the revised models of the pre-post retrofit scenarios of Denver neighborhoods. I also analyze the results of quantifiable use of an AI tool to measure a week-long Role-Play workshop series, led by students to emulate the roles of stakeholders and their -often- conflicting interests. This Co-Design CoBI AI tool was a collaboration with the campus Institute of Cognitive Science, which has tested the tool in different secondary education classrooms.

Comparing the results of engagement effectiveness will inform future pedagogies and assignment structure for next years. The results of student assessment, integration of AI and geospatial tools, and other online environmental performance platforms, will serve as an opportunity to discuss and reimagine planning education and accreditation requirements as a crucial agent of change. Quantitative measures for curriculum enhancement and student evaluation and reporting measures will be shared.

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Keywords:

Artificial Intelligence (AI), Geospatial Models, Tradeoffs, Sustainable Development, Studio Pedagogy

T_08 EDUCATION AND SKILLS / 1828

The Role of Scenario-Based Design in Spatial Design Processes

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This study explores the use of scenario-based design in spatial design projects and its contribution to the design process. In today's world, where uncertainties about the future are increasing, the impacts of dynamics such as the climate crisis, rapid urbanization, and technological transformation on spatial planning and design are becoming increasingly unpredictable. In this context, scenario-based design fosters creative thinking in urban design and helps develop human-centered approaches, allowing the design process to be guided in a more flexible and innovative manner.

Rationale and Methodology

Traditional urban design processes often rely on existing situation analyses and linear planning approaches. However, considering the significant role of dynamic variables and multi-actor processes in spatial planning, there is a need for more flexible and innovative approaches to address future challenges. At this point, scenario-based design enables the integration of spatial decisions at different scales, offering opportunities for generating creative solutions.

In the workshop conducted as part of this study, participants envisioned the future spatial dynamics using the scenario-based design method. They transitioned from abstract concepts to concrete design proposals, thus experiencing creative problem-solving processes. The workshop brought together students from architecture and urban and regional planning programs, allowing them to explore macro/micro-scale relationships and interdisciplinary interactions through this method.

The workshop focused on the coastal areas of Istanbul as the study site. Participants developed scenarios about the future of selected parts of Istanbul's coastline, incorporating spatial data and scientifically plausible narratives.

Throughout the workshop, daily surveys aimed at understanding the process were conducted, and a more comprehensive survey at the end of the workshop collected participants' evaluations of the method used.

Findings and Evaluation

During the workshop, participants noted that scenario-based design enhanced their spatial perception, guided their decision-making processes, and provided a common ground for individuals from different backgrounds to think collaboratively. Additionally, it was observed that this method improved the understanding of future uncertainties and helped develop more comprehensive perspectives in urban design decisions.

In conclusion, scenario-based design is recognized as an effective tool that enhances both creative and analytical thinking skills in urban design. Rather than focusing solely on defining existing problems and potentials, this method promotes the anticipation of future uncertainties and the development of design processes through creative thinking. The study emphasizes the importance of incorporating this method into design education and professional practice. Conducted with students and faculty members from various universities in the country offering education in architecture and urban design, this study aims to contribute to the development of a collaborative educational program and the implementation of new tools supporting design processes on a broader platform.

Keywords:

Scenario-based design; spatial design; creative problem-solving; spatial decision-making; cross-scale relationships

Approaches to Educating and Training Change Agents in Spatial Planning at Higher Education Institutions

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Major global environmental changes present mankind with challenges that can only be solved through the Great Transformation towards sustainable spatial development. The need for transformation arises in all systems such as civil society, the economy, and politics. Changes and upheavals not only occur in social coexistence and behavior, but also manifest themselves in the spatial structure, starting at the local and regional level. Universities play a key role in training future change agents or transformation pioneers for sustainable development. However, it remains unclear what expectations practitioners and university teachers have towards transformative teaching and how a degree program or its individual elements must entail to fulfil these requirements.

This is the context in which our study is situated; it involved examining the orientation towards transformation issues of spatial planning study programs at 25 German universities. Based on document analysis and 36 expert interviews with scientists, students, university teachers and practitioners we discuss, first, the different expectations of various actors towards transformative and transdisciplinary teaching formats, and second, the status of transformative teaching formats already implemented in spatial planning related programs. As result, we propose to evaluate exemplary courses that place transformative and transdisciplinary learning at the center of their pedagogical approach, whilst also focusing on social learning processes of soft skills.

German examples such as the '[Q]-Studies' at HafenCity University Hamburg, or the sustainability-oriented 'Leuphana Semester' at the University of Lüneburg, both compulsory for all students, are discussed against the background of 'Liberal Art Studies', in which students learn flexible, interdisciplinary thinking based on real problems and practice applying the problem-solving strategies they have acquired to complex questions from science and practice.

The presented study can enrich the international discussion on future perspectives of spatial planning programs against the background of sustainability challenges with empirical evidence from selected German universities.

Keywords:

transformation; higher education institutions; change agents; transformative teaching; spatial planning

T_08 EDUCATION AND SKILLS / 1341

Educating urban planners in the era of the Anthropocene requires transformative pedagogies: Learner-Centred Pedagogy (LCP) applied in a theoretical Urbanism module in a Greek university

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In the era of the Anthropocene, faced as we are with the harsh realities of global issues, including the collapse of ecosystems and climate breakdown, the need for a transformation of planning education and pedagogies is more urgent than ever (Frank & da Rosa-Pires 2021). In our rapidly changing world, in which cities play a central role for the sustainability of the planet, a different learning landscape is required, one that will promote critical thinking and focus on emotional competences and not merely on knowledge (Wisser 2018). Pedagogy is the discourse with which one needs to engage in order both to teach intelligently and make sense of teaching, as it encompasses both the act of teaching and its contingent theories and debates (Alexander 2009).

Especially in the case of urban planning, educators need to understand pedagogy as a deeply civic, political and moral practice (Lamb & Vodicka 2021). Based on solid evidence from cognitive theories of learning, education experts, inspired by the field of Adult Education, highlight the power of transformative pedagogies to induce change (Mezirow 1997). In past decades, and since 2010 integrated in the Bologna declaration (European Higher Education Area, n.d.), Learner-Centred Pedagogy (LCP) has been much discussed as an educational approach that places the student at the centre of the learning process, as opposed to traditional, teacher-centred education in which learners are perceived as passive receivers of information from the teacher (Bremner et al 2022). LCP focuses on students' needs and uses educational tools for making the lesson more engaging, enhancing students' self-confidence and collaborative skills, with expected outcomes that include increased retention of the content and life-long learning developed by the student. The rationale for implementing LCP in university teaching is three-fold (Schweisfurth, 2015): a) 'economic', as LCP better prepares students for the demands of a changing world; b) 'cognitive', as students learn more with LCP is implemented, rather than with traditional teaching; and c) 'emancipatory', giving students agency and responsibility, and advancing critical thinking, as they see knowledge as less fixed. University teachers, however, at least in countries such as Greece, are not required to be knowledgeable of pedagogy or be trained as adult educators. Good teaching is not intuitive but is the outcome of acquiring basic knowledge of how learning takes place, grounded on latest findings of cognitive science, and of conquering educational techniques that will enhance students' engagement, desire to learn, and promote deep learning. Concurrently, this type of experiential learning and action pedagogies are valuable for education for sustainable development (Moore 2005). This paper presents a case of teaching a theoretical course on human-centred urbanism in a School of Planning in a Greek university using Learner-Centred Pedagogy (LCP), a module which was submitted as a candidate for the 2024 AESOP Excellence in Teaching Award. The concept, syllabus and teaching techniques are presented in parallel to an analysis of students' comments in the evaluation of the course. This case study shows the transformative power of using LCP for promoting deep learning and preparing students for the complex, 'wicked' problems of contemporary urbanism. It argues that planning education has much to win when educators efficiently use experiential learning pedagogies and active, collaborative learning tools; when learners are exposed to real-world problems; and when classroom environment permits dialogue and exchange.

Keywords:

Learner-Centred Pedagogy; planning education; transformative learning; Adult Education; human-centred urbanism

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T_08 EDUCATION AND SKILLS / 1412

Advancing Transdisciplinary Planning Education for Future Cities: European University Alliance PIONEER

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In an era of increasing environmental volatility, socio-economic disparities, and demographic shifts, planning education, research, and knowledge transfer have become essential components of a robust response to contemporary urban and regional challenges. Traditional planning curricula often emphasize specialized technical skills in isolation from the interconnected realities of climate change, migration, food insecurity, and uneven development. However, the urgency of current crises reveals the need for more holistic educational models that prepare future professionals to navigate these complex terrains through interdisciplinary collaboration, innovative pedagogies, and engagement with diverse stakeholders.

This contribution explores how European university networks—exemplified by alliances such as PIONEER, oriented toward SDG 11—are transforming planning education through transdisciplinary approaches. Rather than focusing solely on disciplinary silos, these alliances foster integrative competencies that blend urban policy, environmental science, design thinking, and social engagement (Butler et al., 2012). By doing so, they respond more effectively to rising urban vulnerabilities, whether related to climate adaptation or socio-economic inequality. These initiatives build on impact-driven collaborations identified by Harrison et al. (2016) and Maassen et al. (2023), which highlight the growing relevance of transregional alliances in shaping new institutional geographies of higher education.

A core feature of this evolving landscape is the emphasis on reflective and challenge-based learning, where real-world scenarios become living laboratories for pedagogy and research (Adamson et al., 2018). Students and faculty work alongside policy-makers, local communities, and industry actors to co-produce knowledge, translating academic expertise into context-specific solutions. Such collaborative engagements anchor educational experiences in tangible issues—such as extreme weather events, forced displacement, or public health crises—while reinforcing the socio-political skills needed to facilitate inclusive and equitable urban transformations (Adger, 2003; Baker et al., 2012). By embedding Schön's (1987) concept of reflective practice into the curriculum, these alliances encourage critical thinking, adaptability, and a willingness to challenge established paradigms.

Knowledge transfer mechanisms play a pivotal role in this process. Liaison offices—for instance, those based in Brussels—help universities secure competitive funding and align their programs with broader European policy directives (European Commission, 2021). They also serve as critical bridges between academic institutions and transnational governance arenas, facilitating dialogues around pressing urban issues. Through such offices, alliances can pursue strategic partnerships, tapping into the Recovery

and Resilience Facility (Next Generation EU, 2021) and other instruments that enable cross-border research consortia and project-based learning. These networks thus ensure that educational innovations remain financially viable and policy-relevant, while advancing a culture of scholarly collaboration and pragmatic problem-solving. By integrating planning education, rigorous research, and strategic knowledge transfer, universities are laying a new foundation for addressing complex urban challenges. This synergy strengthens the academic core of planning programs and broadens their social impact, ensuring that graduates gain not only theoretical acumen but also practical, adaptive skills. The resultant epistemological shift departs from traditional lecture-based instruction and moves toward a model where co-production of knowledge, cultural awareness, and stakeholder engagement form the bedrock of the learning experience (Schön, 1987; Webster, 2008). From this perspective, the experience of alliances like PIONEER demonstrates that planning education, when informed by diverse perspectives and grounded in real-world challenges, can both respond to and actively shape more sustainable, equitable, and resilient urban futures.

Keywords:

University Alliances; Transdisciplinarity; Planning Education; Challenge-Based Learning; Sustainability

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T_08 EDUCATION AND SKILLS / 1380

Post-Pandemic Higher Education: Spatial Transformations, Digital Shifts, and Sustainable Futures

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The COVID-19 pandemic has profoundly disrupted educational systems worldwide, including planning education in higher education institutions (HEIs). This disruption presents an opportunity to critically evaluate how higher education planning curricula can adapt to address contemporary global challenges, including climate change, social inequities, territorial fragility, and migration. For instance, planning education must evolve to foster transformative skills and alternative imaginaries of urban living. This research explores the spatial reconfigurations and adaptive strategies of HEIs during the pandemic, with a focus on their implications for rethinking planning practices and pedagogies. Part of the National Research Project (PRIN) “Plastic or Elastic,” this study examines Italian universities through the lens of “spatial turn” and “transition studies,” exploring how crises can accelerate systemic change in both urban and academic contexts. It argues that the pandemic, by disrupting established spatial and organizational dynamics, provides an unprecedented opportunity to integrate resilience, equity, and sustainability into planning education.

The research starts from the hypothesis that the pandemic has generated significant spatial disruptions, forcing a re-evaluation of the functions and configurations of Italian academic environments. These changes are analysed as possible harbingers of a broader transition toward sustainable and equitable spatial practices. It intends to reach the following two-fold primary objectives: first, it tries to determine the extent of the reshaping of the pandemic on the spatial logics of HEIs; second, the strategic scenarios identifying how these changes can be used to inform public policies and urban transitions.

The methodology adopts a multi-phase design that pursues findings from various sources. The first phase included an extended literature review, mapping the spatial dynamics of the pandemic and recognizing main topics such as digitalization, gender equity, and student behaviour. The second phase are qualitative interviews with influential persons for HEIs, such as university rectors, general managers, faculty associations, and students, to also capture intimate narratives of spatial and organizational transformations brought by COVID-19 pandemic. A thematic analysis of these discussions reveals new practices, persisting challenges, and emerging opportunities for systemic change.

The findings highlight the complexities of spatial adaptation related to HEIs. Universities rapidly turned to online classrooms, hybrid teaching methodologies, and even redesigned some physical environments to ensure some continuity. But these adaptations also unearthed deeper systematic issues. For instance, the transition towards the digital environment introduced a speeding-up of innovations yet increased inequalities in access to technological resources, and challenged the true meaning of university and traditional teaching. In fact, whereas hybrid spaces were intended as solutions for upholding community engagement, it seems that they still could not replicate the relational aspects or experiential elements that characterize most traditional settings of academia.

The study brought to light critical areas of innovation and concern. Promotion of spatial transformations, outdoor spaces and smart campus concepts showed the potential of spatial flexibility in fostering resilience. However, the erosion of community ties due to physical isolation and over-reliance on digital interfaces has brought into focus the irreplaceable role that in-person interactions play in academic and social life. These findings call for an inclusive approach in the spatial and organizational planning of HEIs, with a focus on mental health, accessibility, and equity.

The contribution will present HEIs as potential key actors in the transition towards sustainable urban futures. In this respect, the study has outlined a framework through which HEIs can reconceptualize themselves as public spaces that could link the physical and digital realms and integrate innovative spatial practices with broader societal objectives. It means that redesigning academic environments for post-pandemic realities is just one aspect; there are also aspects involving universities as sites of urban experimentation and community engagement.

Keywords:

higher education; post-pandemic; digital transition; spatial adaptation; transition studies

Planning education between hybridization and transdisciplinarity: towards a 'specialized generalist'

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Despite the complex and interdependent nature of contemporary and future urban challenges, which certainly require a comprehensive and integrated approach, planning education needs to provide students with specific analytical and operational competences. Furthermore, the role of planners has evolved significantly in the past decades: no longer envisioned as all-powerful visionaries, they are now expected to navigate specialized professional environments, while adapting to increasingly complex, multidisciplinary settings (Mazza, 2013).

Nevertheless, despite the persistent limitations to specialization in many educational settings, it has, in certain cases, led to detrimental forms of hyper-specialization, leading to excessive fragmentation of knowledge bases, professional training, and policy approaches (Signoroni, 2024). Such educational framework undermines a planners' capability of understanding interdependent urban processes, increases the theory-practice gap and impinges on the risk of further isolating academia and expert knowledge (Palermo, 2014; Signoroni, 2022). Additionally, it exacerbates the current difficulties in collaboration between different actors, leading to a form of multidisciplinary where individuals work in parallel, even within heterogeneous teams, without achieving true integration of knowledge and skills.

Such pernicious mechanisms of sectorization and compartmentalization are the result of failing educational practices, which require a paradigm shift. Hybridization between different fields such as, for instance, traditional planning and ecology, could lead to more effective and efficient ways of understanding and tackling urban issues by integrating new approaches with traditional ones, and replacing obsolete practices in education and beyond.

Here, a form of "specialized generalist" is proposed: someone able to specialize in a specific subfield (e.g. ecological planning), which results from hybridization between disciplines, but simultaneously manages to comprehend the multifaced nature of the urban, and how choices taken in specific fields may relate to each other. Such an approach would mitigate the risks associated with both excessively broad and overly specific curricula, which may lead to low job attractiveness on the one hand, and limited career choice and resilience in the job market on the other. Both extremes have led and lead to inadequacy in fulfilling the tasks that planners are supposed to accomplish. Hybridization and transdisciplinarity in urban planning curricula should focus primarily on two main issues: mastery of the specific tools of planning and a reduction of the theory-practice gap.

The specialized generalist applies their knowledge to specific topics within planning practice (Bonfantini, 2024) by mastering the tools that define our disciplinary field: projects, plans (particularly urban codes), and policies. Tools that remain at the core of planning even in the most radical, transformative proposals (Moroni, 2010). Hybridization would allow for a critical understanding of such tools, their scope and their conventional application, strengthening the planner's role in what seems to have become a highly contested field of knowledge and practice, resulting in the partial marginality of such figure (Bonfantini, 2023).

To enable a goal-oriented approach and governance of the tools, educators should substantially reduce the current gap between theoretical and practical training. Courses aimed at developing practical, project-oriented knowledge (e.g. urban design studios) should be supplemented with a greater theoretical background (e.g. composition). Likewise, theoretical coursework focusing on understanding current planning phenomena from an analytical perspective (e.g. urban policy/codes analysis) should encourage students to develop proposals (e.g. policy design), not by oversimplifying the complexity of such tasks, but by exposing them to real-world challenges.

The study draws upon existing literature and is informed by a targeted and qualitative comparative analysis of case studies from multiple planning schools across Europe. The paradigm shift underpinning this study would be reflected in more integrated curricula, combining theoretical and practical knowledge, while fostering interdisciplinary collaboration among transdisciplinary-educated, specialized generalists.

Keywords:

Specialization; knowledge-integration; planning tools; planning education; theory-practice gap

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T_08 EDUCATION AND SKILLS / 1170

Project Management in Urban Development. Case Studies from the DREAMER and PM4U Projects

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Urban development and spatial planning are complex processes that require interdisciplinary coordination, efficient resource allocation, and long-term strategic thinking [1-2]. This paper explores the critical importance of project management as a discipline in addressing the challenges inherent in urban development and spatial planning. The study emphasizes how project management methodologies contribute to achieving sustainable and inclusive urban growth by ensuring the effective integration of technical, social, and environmental considerations [3-5].

The research draws on insights and results from two ongoing projects: the DREAMER and the PM4U projects. Both initiatives highlight the transformative potential of project management in urban development and spatial planning. The DREAMER project focuses on empowering professionals and academics in project management for post-war recovery, clean energy, and digital transformation, while the PM4U project addresses the challenges of managing urban transformation projects in the EU, particularly in response to climate change and energy transitions.

Using a mixed-methods approach, the research analyzes case studies and best practices from these projects, alongside other urban initiatives such as infrastructure development, urban renewal, and cross-border planning. The findings demonstrate that

applying structured project management techniques, such as stakeholder analysis, risk assessment, and time management, significantly improves project outcomes. Additionally, it highlights how project management tools facilitate collaboration among diverse stakeholders, including governments, private sector actors, and local communities [4]. A key focus of the study is the role of project management education, as demonstrated in the DREAMER and PM4U projects, in equipping professionals with the skills needed to navigate the complexities of urban development. The research identifies gaps in existing curricula and showcases how integrative frameworks, combining spatial planning and urban development principles, can better prepare future urban planners and project managers to address pressing global challenges such as climate change, population growth, and resource scarcity.

The study concludes that embedding project management into urban development and spatial planning practices is essential for creating sustainable, resilient, and inclusive cities. By showcasing the outcomes of the DREAMER and PM4U projects, this research underscores the value of innovative training programs and collaborative approaches in shaping the cities of tomorrow.

Keywords:

project management; spatial planning; DREAMER project; PM4U project; education

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T_08 EDUCATION AND SKILLS / 1452

Transforming City Regions through problem-solving, collaboration, and conceptual thinking

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Circularity, among others, has emerged as a critical paradigm for addressing contemporary environmental challenges in the built environment. Cities are under increasing pressure from climate change, resource depletion, and socio-economic inequalities, making circular spatial strategies essential for sustainable transformation. Achieving this, however, requires large-scale, cross-border collaboration that integrates expertise from different disciplines, raising the question of what skills urban planning education should impart.

This paper argues that at least three core competencies are essential: problem-solving skills, interdisciplinary collaboration, and the ability to combine analytical insights with

conceptual thinking. Against this background, we question how planning education can foster solution-oriented thinking rather than passive knowledge acquisition, how different disciplinary perspectives can be integrated to enhance co-creation and collaboration, and how analytical insights can be translated into transformative spatial strategies.

Using circularity as a central challenge, the paper explores the pedagogical approaches needed to equip students with these skills by drawing on the experience of two design and research-oriented modules within the M.Sc. Transforming City Regions (TCR) programme at RWTH Aachen University. Both modules immerse students in real-world, cross-border planning challenges through integration with an ongoing EU-funded research project. The first, Integrated Project II: Evolution of Functional Urban Areas, focuses on Haven-Stad Amsterdam, where students redesigned part of Amsterdam's harbour using circular design principles. The second, Research Module in Urban and Regional Transformation, explored spatial strategies for a circular built environment in the Eurodelta macro-region, with a 2050+ time horizon. These modules emphasise collaborative, workshop-based teaching integrating digital tools, interactive peer learning, and field research.

The main insight is that tackling complex urban challenges in education requires a deliberate balance between structured knowledge and iterative exploration. First, problem-based teaching is most effective when students engage deeply with real-world problems rather than passively assimilating information. However, this approach requires well-mentored, interdisciplinary group work that encourages collaboration rather than fragmentation and ensures students learn to integrate different perspectives effectively. Furthermore, bridging spatial analysis and design remains particularly challenging, as it requires translating data-driven insights into actionable strategies while resisting superficial solutions.

To address these challenges, workshop-based teaching combined with peer review strengthens critical communication skills and refines conceptual clarity. Moving from traditional written assessments to oral examination creates a dynamic format that accommodates AI tools while forcing students to develop structured arguments and defend their insights interactively. In addition, training students in semi-structured interviews equips them with essential research skills and first-hand engagement with key stakeholders. Finally, iterative discussions reinforce depth and refinement, mitigating the risks of generic content production. Ultimately, the emphasis must remain on quality over quantity—cultivating a culture of debate ensures a deeper, more meaningful engagement with sustainability-related challenges in urban planning.

Keywords:

Sustainability; urban planning education; problem-solving pedagogy; interdisciplinarity; conceptual thinking; cross-border

T_08 EDUCATION AND SKILLS / 1708

Sismopoli, playing cities in risk

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The limited attention of public policies and local administrations to risk management, combined with the lack of awareness among civil society, has led major international

organizations to recommend innovative and effective communication strategies to engage communities in the critical issues shaping our cities, in order to encourage interest in the spaces we live in every day and to promote a culture of prevention.

Discussing risk management in the specific field of urban and territorial planning is a complex issue that involves multiple actors, various disciplines, and different interests of civil society on the central issues shaping our cities, in both ordinary and extraordinary territorial governance. Topic that are hardly addressed in scientific education, both in schools and in the broader context of civil society.

Despite Italy being one of the countries with the highest seismic risk in Europe, both proactive policies for reducing urban seismic risk and initiatives aimed at promoting risk education are still weak. Serious games are now widely recognized as valuable tools in education, particularly in fostering and encouraging citizen participation in environmental and territorial matters.

This contribution introduces “Sismopoli”, a laboratory set on a serious game, focused on seismic risk reduction from an urban perspective, as a tool to make complex issues more manageable and understandable. The game experience is part of a broader educational experience aimed at stimulating knowledge processes looking at the territory as a common good, where risk reduction is a crucial component. The goal of the study is to contribute to the debate by exploring how game-based learning methodology can influence community awareness processes on priority issues in urban contexts.

Keywords:

Urban planning, seismic risk awareness, serious games,

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Track 9 | URBAN FUTURES

T_09 URBAN FUTURES / 1673

The fictional municipality of "Zwirgberg" as a model for spatial planning in rural Rhineland-Palatinate

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Demographic change, the climate crisis, digitalisation and the change in mobility are among the topics that pose new challenges for local authorities. In particular the rural areas of the German state of Rhineland-Palatinate must adapt to changing conditions and develop sustainable development paths. The aim of the research project "Kommune 2050" is to develop a data- and GIS-supported model municipality - the fictitious community "Zwirgberg". This model serves as an experimental planning tool to analyse spatial structures, develop future scenarios and transferable solutions for real municipalities.

The project examines sustainability in municipalities by analyzing spatial, functional, and socio-economic factors relevant for rural areas. The aim is to analyse the interactions between settlement structure, infrastructure and demographic development on the basis of data, to develop a digital model of a fictitious "cross-sectional municipality" and to derive from this a model vision of the future for municipalities. To achieve this, a three-stage methodology was developed:

1. Analysis of existing municipalities

The first step was to profile eleven selected municipalities. The aim of this step was to get an overall picture of the municipalities. In a second step, the area distribution of the municipalities was examined and categorised in order to group comparable or similar structures. The third and final step of the analysis was to create 'building blocks' that would serve as the basis for the construction of the fictitious municipality based on the standards of the previously analysed municipalities in Rhineland-Palatinate.

2. Development of the model municipality "Zwirgberg"

The aim of the subsequent design phase was to work out the actual state of a fictitious municipality. The findings of the first phase formed the backbone of this process, and the fictitious municipality of Zwirgberg was constructed by first developing two types of municipality from basic designs using improvised sketches, and then combining them into one type of municipality.

With the help of analog sketches, the individual layers were digitised using GIS, so that in the end the basic structure of the municipality was available (consisting of water structures, forest areas, agriculture, meadow areas, viticulture and settlement areas). In a further step, the relationships within the settlement areas were analysed, from which the individual local communities of the fictitious municipality were constructed from fragments of real local communities.

3. Scenario planning and future visions

Based on current trends, the results of a Zukunftswerkstatt and the existing potential of today's Zwirgberg, three visions for the future of Zwirgberg in 2050 were developed. None of the visions stands alone; they are all interlinked and interdependent. In the future visions 'Net-zero tourism', 'Climate-positive Zwirgberg' and 'Connected community' there are core building blocks that can be implemented with the help of the tools developed. The cross-cutting themes of digitalisation and mobility are present in all three visions.

The development of “Zwirgberg” shows that a combination of analytical, digital and creative planning methods leads to particularly differentiated results. The combination of GIS-based modelling with hands-on methods such as sketching and scenario analysis allowed for an iterative refinement of the results. This approach identified municipalities’ key characteristics and future development potential. This approach provides an innovative way of linking data-based planning processes with strategic vision.

The “Kommune 2050” project thus also provides valuable impetus for municipal development planning. It shows that GIS-based digital models provide a sound basis for future planning processes and enable realistic scenarios. “Zwirgberg” functions as a digital laboratory for spatial planning, systematically testing development strategies. The project’s GIS-based approach strengthens data-driven planning and strategic foresight for municipalities.

Keywords:

Data-Driven ; Model Municipality ; Scenario Modeling ; Rural Development

T_09 URBAN FUTURES / 1199

Research on the Potential for Future Development of Labin and Raša in Istria

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Small and medium-sized towns and cities represent the very important elements of the polycentric urban structure of the European Union. They have a crucial role in regional economic development and social well-being while providing jobs and sustaining local and regional services. Those entities have the possibility to offer good living and working conditions, helping the local community to attain a good quality of life. They demonstrate intrinsic value for European environmental and cultural heritage. Research on small and medium-sized towns provides insight into unexplored potential for shaping sustainable urban-rural relations. Based on comprehensive spatial planning different integrated and place-based policy measures should be suggested in order to make the most of their development assets.

In order to choose the most suitable development direction for small and medium-sized towns, it is necessary to consider besides regional development plans, the possibilities and potentials of the space at the local level taking into account the long-term needs of the inhabitants.

The aim of this work is to emphasize the importance of the scenario method in planning the future development of small and medium-sized towns and cities that is used in the education of future spatial planners in order to be able to choose the best possible scenario for long-term development of the selected area.

For this research, Labin and Raša in Istrian Peninsula were chosen as a case study, due to their specific historical significance in the economy of the region and rich potential for future development. The city of Labin and the municipality of Raša are located in the eastern part of Istria between Plomin and Raša bays covering the area of 152,7 km² with a population of 13 233 inhabitants (2021). The administrative area of the city of Labin (72,3 km² with a population of 10 424 inhabitants) today includes the central settlement of Labin and 16 other settlements, and the municipality of Raša (80,4 km² with a population of 2 809 inhabitants), along with the central settlement of Raša includes another 22 settlements. The settlements are characterized by a variety of spatial, cultural

and socio-economic specificities. In the 19th and 20th century the area was known for its mining activities as a basis of its economy. Planned mining settlements were built in both central settlements: Arsia (today Raša) in 1936/1937, designed by the Trieste architect Gustavo Pulitzer Finali, and Pozzo Littorio (today Podlabin) as a suburb of the historic core of Labin, built in 1940-1942, designed by the Roman architect Eugenio Montuori. At the end of the 20th century, all coal mines were closed, which led to the need to change the economic orientation of the area. The city of Labin has focused on small and medium-sized enterprises, the opening of economic zones and tourism, while the municipality of Raša sees its potential, besides the cement factory in Koromačno, in agriculture especially in the Raša valley, in fishing, and in tourism thanks to two camps and large number of private accommodations.

Project made within the Spatial Planning Workshop at the master's Study of Architecture and Urbanism proposed the vision for the future development of Labin and Raša. The development vision is the result of the elaboration of five different possible scenarios - "Karbona", "Kulturizam", "Koža Nostra", "Dystopia" and "Dispersion", and their valorisation according to the set development goals and related criteria. For the purposes of vision realisation, necessary activities in the form of different development projects for a period of 25 years were proposed.

Keywords:

development vision; former industrial towns; scenarios; tourism

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T_09 URBAN FUTURES / 1742

Map the Future, Shape the Narrative: Re-thinking the Role of Participatory Mapping in Exploratory Scenario Planning

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Exploratory scenario-building processes have proven valuable in addressing uncertainty and complexity in urban and transport systems by creating coherent narratives that capture broad trends at global or national scales (Banister & Hickman, 2013; Tuominen et al., 2014; Melander, 2018). However, a significant challenge lies in bridging these exploratory scenario narratives with spatial and local realities, which are crucial for

guiding effective policymaking in urban, regional, and mobility planning. Participatory approaches show promise by integrating both expert and local knowledge into the scenario mapping process (Molinero-Parejo et al., 2021; Rivas-Tabares et al., 2022; Lamarque et al., 2013), but current practices often treat the scenario mapping process as a final, one-way step, culminating in narrative-based maps. As a result, the spatial insights and local perspectives uncovered during these mapping processes are typically not integrated into the scenario narratives.

This study investigates whether and how exploratory scenario narratives and participatory mapping processes can establish a reciprocal relationship wherein narrative-based maps contribute to spatially shaping scenario narratives. The methodology involved three academically constructed cases tested in an experimental setting. Each case was operationalised in a workshop with six participants, including experts and local stakeholders. The participants engaged in collaborative mapping activities, focusing on changes in land use and transportation according to three 2050 exploratory scenario narratives for the Henares Corridor (Madrid, Spain) (Soria-Lara et al., 2021). A structured observation approach was used to analyse the dialogue and interaction dynamics during the mapping episodes (i.e., distinct segments of the workshops leading to relevant spatial transformations). This approach provides the research team with insights into the influence of participatory mapping on shaping the spatial and local dimensions within scenario narratives.

The spatial transformations mapped during the workshops revealed how participatory mapping can shape scenario narratives in diverse and impactful ways, leading to the identification of three distinct categories of mapping episodes. The first group of episodes complemented the future narratives by adding spatial representations of familiar, recognisable elements. In these instances, the discussions and interactions among participants did not introduce new ideas but reinforced and clarified existing aspects of the narratives. The second category, however, showcased the ability of participatory mapping to expand the scope of the narratives. Participants brought forward fresh elements and perspectives that had not been explicitly considered in the original scenarios. Despite these additions, the overall coherence of the narratives remained intact, highlighting the adaptability of the scenarios. The final group revealed the most transformative potential of participatory mapping. In these episodes, participants made spatial changes that not only diverged from the original projections but also reshaped key aspects of the future narratives, introducing substantial modifications.

The diversity observed in the mapping episodes highlights the dynamic and transformative role that participatory mapping can play in evolving and enriching scenario narratives. The implications of these findings for scenario planning are profound. This study reinforces the idea that participatory scenario mapping is not just a helpful tool but an essential one, challenging traditional views that treat scenarios as static endpoints or scenario mapping as a simple visualisation technique. Instead, the results advocate for a more iterative and adaptive approach to scenario-building—one in which narratives continuously evolve through ongoing collaboration with both experts and local stakeholders. In this process, participatory mapping acts as a vital feedback loop, ensuring that scenario planning remains responsive not only to global or national trends but also to the specific challenges and dynamics at the local level.

Keywords:

Uncertainty; Transport; Land Use; Visioning; Foresight

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T_09 URBAN FUTURES / 1164

Urban Security: How Urban Design Influences the Emotional Experience

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Security is a fundamental and universal human need, yet the perception and importance of it continuously evolve alongside societal changes and urban development. As cities grow and become more complex, the factors influencing our sense of security are constantly shifting. In modern urban environments, security is no longer defined solely by the presence of law enforcement or the absence of crime. Instead, it is intricately linked to the physical and emotional experience of urban spaces, shaped by various design elements. This shift in understanding makes studying security in urban environments a critical task for urban planning, as it directly impacts residents' quality of life, social interactions, and even economic development.

This study explores the intricate relationship between the built environment and emotional experiences of security, shedding light on the complex dynamics that govern human interactions with urban spaces. By identifying and analyzing key urban variables—such as building density, street connectivity, lighting, and green space—this research investigates how these factors influence pedestrians' emotional responses to their surroundings. The aim is to provide valuable data-driven insights that can inform urban planning processes, guiding the creation of more secure, pedestrian-friendly cities.

Moreover, this research encourages collaboration among urban planners, policymakers, psychologists, sociologists, and other stakeholders, fostering a shared understanding of the challenges facing urban ecosystems. By bringing together interdisciplinary perspectives, the study provides a platform for collective problem-solving, offering actionable strategies to enhance urban design and promote both the emotional well-being and security of pedestrians.

The research focuses on selected locations in Łódź, a city grappling with the challenges typical of post-industrial urban areas. Five diverse sites, each with different levels of crime but built within a similar time frame, were chosen for analysis. Through the examination of factors such as urban density, building structure, street layouts, lighting, and green spaces, the study explores how these elements affect perceptions of security. By integrating Geographic Information System (GIS) data with individual survey responses, the study creates a comprehensive understanding of how physical space correlates with

feelings of security or insecurity. Additionally, pedestrian movement patterns are analyzed to examine how human flow impacts security perceptions.

This collaborative, multidisciplinary approach results in the development of actionable correlations that can guide future urban design strategies. The findings are expected to play a pivotal role in reshaping urban spaces to enhance both physical security and emotional well-being. This research contributes to the creation of cities that are not only functional but also conducive to the psychological well-being of their inhabitants. Aligned with the 11th Sustainable Development Goal, it offers vital insights for developing more secure, inclusive, and walkable urban spaces, ultimately influencing public policy and shaping the future of our cities.

Keywords:

Emerging planning strategies; Urban security; Practical interventions; Sustainability; Resilience

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T_09 URBAN FUTURES / 1697

Looking for justice in a temporary urban greening experiment

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Greening projects have begun to dominate urban planning as a presumed ‘public good’ initiative, carrying with them a wealth of claims to bolster health, well-being and social cohesion. Yet, such projects are often conceived and implemented without attention to their political contexts, ignoring the power asymmetries and injustices inherent in urban governance and the inevitability of winners and losers (Anguelovski et al., 2020; Connolly, 2019; den Dulk and Buizer, 2024). This neglect is problematic in a climate of ever greater and political and social polarization, which threatens efforts to mobilise support for a sustainable and socially just transformation (Fearn and Davoudi, 2022). An action research investigation of a municipal-led temporary urban greening experiment in Munich, Germany, offers a lens through which to examine these dynamics. Combining

participant observation, interviews and document analysis, embedded in a process of reflexive monitoring and evaluation, this study explores how different values, preferences and norms are negotiated over the course of creating and caring for two site-specific interventions in an inner-city neighbourhood. The project experience reveals challenges engaging meaningfully with the realities of groups already active at each site; tensions between the aspiration for longer term transformation and the constraints of the temporary; and contradictions between efforts to mobilise support for a shared vision, while allowing different perspectives to be articulated. These findings highlight both the agency and inadequacy of municipal authorities as custodians of democratic participation in local communities, with implications for the potential to anchor recognition of and engagement with difference in formal urban planning institutions and processes, as part of wider transformative change (McClymont, 2019; Verloo and Davis, 2021).

Keywords:

Urban experimentation; participation; democracy; transformation; justice; reflexive governance

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T_09 URBAN FUTURES / 1767

Encountering the Inevitable: Territorial Narratives as a form of resistance to Urban Mega Projects

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Since the 2010s, Urban Mega Projects (UMPs) have become the dominant mode of Istanbul's spatial development, driving expansion into its northern territories. The clustered scheme of UMPs - including the Northern Marmara Highway, Istanbul Airport, Kanal

Istanbul, and New Istanbul - represents not only mega-scale spatial interventions but also an unprecedented transformation in speed, scope, and production methods. These projects have been widely debated and contested in public discourse, as well as in legislative and planning contexts. However, discussions surrounding UMPs remain shaped by deterministic narratives that frame them as either inevitable advancements or outright failures. This binary discourse reduces urban futures to a singular, linear trajectory and, more critically, fails to account for the transitional and evolving conditions currently unfolding in these territories.

Drawing on Lauermann's (2018) longitudinal perspective of mega-urbanism and Elden's (2013) conceptualization of territory as a process rather than a fixed entity, the study situates the UMPs within broader territorial logics, demonstrating how these megaprojects inscribe state authority onto landscapes while restructuring socio-spatial relations.

Employing a *longue durée* perspective, we investigate Istanbul's mega-urbanization and its temporalities, tracing the interrelations between human activity, natural processes, infrastructures, and urban development through cartographic timelines. These narratives reveal a multi-layered landscape in perpetual flux: from *terra incognita* and rural peripheries to extractive landscapes shaped by coal and sand mining, from the deposition of *molo* (demolition debris) and *dolgu* (landfill) to the accelerated territorial reconfigurations of today and the speculative geographies of tomorrow.

Utilizing cartographic methods with archival and spatial analysis - drawing on historical maps, planning documents, and geospatial data- mapping becomes both a research tool and a narrative device. Rather than treating maps as static representations of space, this approach embraces their capacity to reveal hidden temporalities, contradictions, and spatial discontinuities within Istanbul's northern territories and its relationship with the city.

These shifting materialities and boundaries expose the ongoing remaking of northern Istanbul, challenging dominant narratives that present UMPs as linear, irreversible progressions. Instead, territory emerges as a dynamic palimpsest, where past, present, and potential futures are continuously inscribed and erased.

As Throgmorton (1996) argues, planning operates as a form of "persuasive storytelling." - where narratives guide urban futures and influence policy decisions. By tracing the territorial reconfiguration of Northern Istanbul over extended temporalities, this study constructs an alternative counter-narrative that reveals UMPs as neither monolithic nor inevitable but rather contingent, contested, and embedded within historical cycles of urbanization. Through a longitudinal, narrative-based methodology, it challenges deterministic framings of UMP-led development and advocates for more equitable and ecologically responsive approaches toward the future.

Keywords:

Urban Mega Projects; Istanbul; North of Istanbul; narratives; territory

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T_09 URBAN FUTURES / 1354

Urban Future Imaginaries: how is nature framed in planning poli-

cities across urban areas in Europe, Latin America and North America?

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Urban planning is traditionally concerned with envisioning urban futures across different temporal horizons, scales, and value systems. ‘Official imaginaries’ refer to narratives and discourses in policy and planning documents, such as strategic plans, master plans, and sustainability policies, which shape official discourses directly or indirectly. In urban planning, they reflect dominant ideas about the relationship between humans, nature, and technology –they are not neutral but reflect, define and legitimize specific visions of urban futures (Jasanoff, 2015; Matheney et al., 2024). These imaginaries, materialized in different plans and strategies, have been guiding models and critiques in urban planning, helping planners to conceptualize what cities could or should be, reflecting both local social, economic and political priorities and global policy agendas. For example, several cities, especially large urban centers, are increasingly seeking to (re)brand themselves as desirable “smart”, “green” or “creative” cities, reflecting visions of global competitiveness and economic growth, while at the same time appealing to sustainability discourses (Lindner & Meissner, 2019). In light of the need to build transformative change in a world in constant transformation and with interconnected crises, old and new narratives around the integration of nature in cities and, ultimately, human-nature relationships, have increasingly gained space in debates about urban futures through concepts such as garden cities, green infrastructure, and nature-based solutions, to name a few. Central to this transformative vision are the imaginaries embodied in urban planning policies, which define how nature is valued, integrated and imagined in the cities of the future. However, the concept of ‘nature’ in urban planning often lacks explicit definition (de Oliveira, 2025). Different meanings and values of nature shape the way planning policies articulate future urban imaginaries, influencing not only the relationship between humans and nature, but also the inclusiveness and the equity of proposed transformations and their transformative potential.

This study, part of the NATURESCAPES project, examines the imaginaries embedded in urban policy documents such as strategic plans, master plans, and sustainability strategies, and analyzes how they frame nature’s role in urban futures. Through comparative analysis of eight Functional Urban Areas (FUAs) in Europe, Latin America, and North America, this research investigates how these imaginaries have evolved over two decades. Employing semi-structured interviews and documentary analysis, it explores the narratives that policies use to prioritize certain values of nature while marginalizing others. Our analytical framework examines these official imaginaries based on a typology that addresses the values and meanings attributed to urban nature and human-nature relations, building upon the IPBES Values Assessment (IPBES, 2022) in which three specific values of nature are identified: intrinsic, relational, and instrumental (“nature for nature”, “nature as culture”, and “nature for society”, respectively) (Mansur et al., 2022). We explore dimensions of justice and agency by highlighting which and whose values are discussed in literatures relating to values of urban nature, and the potential for other-than-human perspectives to contribute to shifting worldviews to enable transformative change. Given the potential of imaginaries to stimulate innovation in urban planning, our findings highlight the different conditions under which contrasting future imaginaries in official planning narratives lead to maintaining the status quo, or, contrarily, to challenging entrenched norms, integrating diverse values, and guiding transformative actions.

Keywords:

urban futures; imaginaries; nature-based solutions

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T_09 URBAN FUTURES / 1292

Sustainable Urbanism in the Gulf: A Critical Examination of the Minute City Model

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The global narrative towards sustainable urbanism presents unique challenges when applied to the distinct context of the Gulf Cooperation Council (GCC) regions. Here, the recent push towards sustainable development is met with critical evaluations regarding its impact and practical effectiveness (Al-Badi & AlMubarak, 2019). Gulf cities have been central to discussions on urban development, frequently cited as a cautionary tale in the discourse on global urbanization and growth (Koch, 2022). In GCC cities, sustainability efforts, as argued, are predominantly motivated by economic interests, often overshadowing environmental considerations in physical planning (Shrivastava et al., 2020).

Critics argue that sustainability efforts in the region often appear to be more of a superficial display, a mere symbolic gesture, or a 'symbolic token' rather than a sincere and substantial commitment (Brown, 2016). Others assert that urban planning in the Gulf often leverages sustainability as a promotional or marketing tool, leading to eco-developments that often manifest as grandiose projects or residential areas lacking the essential elements for genuinely thriving communities (Al-Ansari & AlKhaled, 2023). The notion of sustainability in the Gulf region, often perceived as an imposition reminiscent of neocolonialism, struggles to align with indigenous environmental and cultural contexts, impeding its successful incorporation into policy frameworks (Nebel & Von Richthofen, 2016). Consequently, sustainable initiatives are marginalized by prevailing economic imperatives, relegating them to the status of a mere "political tool" (Cummings & Richthofen, 2017 p. 264). This phenomenon precipitates pertinent inquiries about the genuineness of the sustainability attributions within Gulf developments: does it constitute a legitimate dedication to environmental stewardship, or does it function merely as a veneer of greenwashing?

In recent years, the concept of sustainability has evolved from a mere rhetorical flourish to a central tenet in the discourse of urban development, accentuating the imperative of

environmental stewardship and social equity. This paradigmatic shift has engendered the emergence of innovative urban models, among which the 15-minute city stands out prominently. Rapidly embraced by policymakers, this model advocates for the creation of neighborhoods where essential amenities and services are within a 15-minute walk, thereby fostering pedestrian accessibility and promoting sustainable, compact urban configurations (Moreno, 2016). The present study undertakes an examination of the intricate interplay between urban morphology and pedestrian accessibility, thereby offering an opportunity to empirically substantiate or challenge prevalent criticisms of Gulf urbanism.

The study assesses whether common criticisms of Gulf urbanism are justified or refuted based on empirical evidence. This study critically examines the urban morphology and pedestrian accessibility of 77 neighborhood samples from seven Gulf cities across three developmental phases. The analysis involved quantification of urban form attributes followed by Gravity analysis to measure pedestrian accessibility at 400-meter and 800-meter walking radii to empirically evaluate the potential of these neighborhoods to align with the 5- and 15-minute city models. The study validates criticism of the GCC's new urban development approaches, demonstrating that older suburban layouts offer superior 5- to 15-minute walk accessibility compared to newer neighborhoods. Drawing on design lessons from high Gravity value samples, the study proposes optimized layouts for low-performing areas. The decline in accessibility over time underscores the need to reassess current urban planning practices in the region.

Keywords:

The Minute City; Neighborhood; Urban Form; Sustainable Urbanism; Gravity

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T_09 URBAN FUTURES / 1304

Integrated futures work in spatial planning

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Current megatrends such as urbanization, climate and biodiversity crises, and environmental pollution demand humanity to transform its accustomed ways of operating. Responding to these phenomena requires a sustainability transition and transformative change, through which we move to comprehensively sustainable mode of operation in all areas of society. The extent and depth of these changes increase uncertainty and discontinuity on future development across all sectors of society, including planning. However, planning has historically emphasized deterministic evidence-based comprehensive planning aimed at defining a single desired future. Furthermore, the future awareness and orientation of actors involved in the development of the built environment is often lacking, and long-term or indirect impacts are not sufficiently considered in decision-making. As a result of weak future awareness, the ability to respond to uncertainty, changing conditions, and various potential development trajectories is insufficient.

If planning is to address the challenges and increasing uncertainty of our time, there needs to be a shift to a more innovative and transformative approach that creates new paths and is prepared for several uncertain futures. The tools for creating transformative new paths include, for example, explorative scenario planning and strategies for creating resilient and adaptive plans. However, the use of futures methods as part of planning is still a relatively new topic, and the related case studies and theoretical literature are limited. Furthermore, futures work is usually utilized by conducting individual foresight processes among professional stakeholders to provide supplementary knowledge to the planning process. The risk of this approach is that the impact of futures work remains low and no institutional learning occurs.

To answer these challenges and to generate transformative action, it is necessary to develop futures work as a continuous, organizationally integrated activity. This requires a futures orientated planning culture, integrating the use of futures tools and knowledge across organization, and cross-sectoral knowledge sharing. Futures work integration has been studied in futures studies, strategic management, and innovation research. However, the research field is still fragmented, as the focus of research has mainly been on individual foresight processes. Furthermore, research on planning-related applications appears to be altogether absent. The aim of this research is to investigate how futures work and knowledge is currently utilized in planning and to illustrate how they could be integrated as a continuous activity into planning practices and processes. To achieve the aim, two cases are examined that consider the scales of the city, region, and state: 1) the development process of the Tripla commercial center and transport hub located in Pasila, Helsinki and 2) the development process of the system for monitoring and anticipating urban and regional development in Finland.

The research is qualitative and utilizes varied material such as policy documents, scenario and workshop materials, survey results, and interviews. The analysis of the data is conducted as qualitative content analysis. The research primarily falls under the strategic planning field and the associated scenario planning discourse. Through the futures perspective, the research also has strong connections to futures studies. The contribution of the study is three-fold. First, the study offers knowledge on how futures work and knowledge are being utilized, thus contributing to the discourse on the use of futures methods in planning. Second, the study illustrates how futures work can be integrated into planning practice and processes and what factors inhibit integration, a topic that has not been addressed. Thus, the study generates novel understanding on how futures capabilities of planning practice can be systematically developed. Third, the study bridges futures studies and strategic spatial planning research in a novel way, contributing to the emerging body of literature on integrated futures work from planning perspective.

Keywords:

transformative planning; foresight systems; scenarios; futures studies; qualitative research

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T_09 URBAN FUTURES / 1473

Towards transformative actions through perceptions research: Q-methodology as a tool for identifying ideological dimensions of planning problems

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Addressing complex and multifaceted planning problems requires a deep understanding of the diverse perceptions and ideas that stakeholders hold (Healey, 2009; Innes and Booher, 2015). Still, capturing the range and nuance in perspectives, which is necessary for developing transformative actions, remains a difficult endeavor in research and planning processes. Even after the communicative turn in planning theory, planning processes frequently encounter challenges whereby the perspectives of dominant and influential stakeholders dominate those of the marginalized and less powerful (Coaffee and Healey, 2003; Huxley, 2000). This paper reflects on the use of Q-methodology as a useful tool for identifying and analyzing the ideological dimensions inherent in planning problems and some of the means in which Q-method studies can be used in planning processes.

Q-methodology, an approach combining qualitative and quantitative analysis techniques, allows researchers to systematically study subjectivity within narratives (Sneegas et al., 2021). By engaging participants in an exercise to sort statements according to their level of agreement, Q-methodology can help reveal the underlying structures of thought and patterns of ideas surrounding a subject of interest. This methodology is also useful for identifying areas of consensus and divergence in ideas between stakeholder viewpoints, which can help facilitate a more comprehensive understanding of planning issues.

This paper reflects on five separate Q-method applications and the respective strengths and weaknesses of these studies. Two of studies took place in Hawaii in the context of conflicts playing out in the media space, one of which was used to question the media narrative of community versus government regarding a flood risk management project, the other to launch a contentious discussion about water rights after the village of Lahaina was burned down. The next two studies aimed at studying tensions in flood risk management using the same study design in the context of two European cities, Grenoble, France, and Trento, Italy. The final study was deployed to understand how transdisci-

plinary co-creation changes perceptions of climate information services and adaptation actions.

This paper focuses on meta-lessons learned from these particular applications and the Q-method's relevance to contemporary planning challenges. The paper emphasizes the potential value of Q-methodology as a participative and tactile tool to uncover the ideological underpinnings of diverse narratives, its value in providing a platform for constructive dialogue, as well as the potential for devising transformative actions that address multiple viewpoints. The paper also discusses some of the limits of the Q-method studies in the context of complex planning problems.

Keywords:

Q-methodology; water management; flood risk management; transdisciplinarity

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T_09 URBAN FUTURES / 1592

Back to the Future. How to Co-produce with Imaginaries?

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The paper digs deep into a case, from the perspective of the project-director of actual developments on the former mine-site in Beringen, a medium-sized city in Flanders (Belgium). Description and evaluation of a work-in-progress serve critical reflection and a proposal for an enriched approach.

Klee's 'Angelus Novus' captures the inevitable drive of progress, looking into the past, turning his back to the future. While producing huge piles of trash, a strong wind from paradise blows him into the unknown. A similar situation is intrinsic to spatial planning. Planners cannot 'see' the future behind their back, but have to deal with that while doing their best to correct misfits and to meet demands for a better environment. The knowledge needed to do so is built up from past experiences and a critical attitude towards the present trash. And yet, changing the actual world with the future in mind urges for 'futuring': investigating potential futures, seeing with the eye of imagination. This eye-magination is envisioning alternative situations, by projecting innovative ideas into the future, while testing those together with participating actors, and sending the fruits of this confrontation back into potential futures. Planners move forth and back between the known present and an uncertain future while scanning, assessing and testing a spectrum of qualities.

However, spatial planners and designers never work alone. Many diverse stakeholders need to be informed, mobilized and activated until they are motivated to invest their knowledge, creativity, time, money, and other valuable resources. Collaboration is a

major prerequisite within a planning situation which includes, besides analysis, research and design, also operational aspects such as action programs, communication, and implementation. Thus, co-producing a 'common future' implies imagination to be shared. In the case of Beringen, coherence and coordination were crucial aspects of the common future pursued for an old mining site. To envision those aims, multiple generative metaphors were mobilized by a 'quality platform' set up by the local government. Seeing 'mine-landscape as beacon', 'projects as ships', and 'designing as wayfaring' tried to collectively coin a common point on the horizon, the need for coordinated 'turns' of each ship's orientation, and their complicated trajectories to be explored. 'Ecology', 'mesh-work', and 'correspondence' served as tacit metaphors for the 'quality platform' during its endeavour to direct the common imagination. Together, these metaphors helped to modulate and grasp the 'planning ecology' at work.

After four years of practice, an evaluation is made. The wayfaring-ambition of the involved quadruple helix (public-private-partnership, city government, social actors, external experts) lost track. Maybe partly due to the metaphorical *flou artistique*, the beacon loomed up as a rather foggy silhouette. Probably the 'content' of the pursued mine-landscape was not addressed in a sufficiently tangible way. The motivation to hark 'back to the future' is growing. Implied questions are: What kind of 'imaginary' (an imagined representation of the future) can help to make the beacon stand out of the fog? How to construct a performative shared perspective on the world, that spurs a commonly supported goal-orientation and enables common practices? According to the 'quality platform', the future might be backed up by a 'thought-image', based on an elaboration of the concept 'mine-landscape'. Gradually such thought-image is being developed by enriching 'mine-landscape' in a threefold way: a logo (*mijn | land | schap*), a perspective (being, seeing, caring), and a figure (eidetic map).

Keywords:

futuring; co-production; metaphor; thought-image

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Hybrid lifestyles of young generations. Challenges in ways of living and working towards the urban green care in Oslo and Lisbon

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In the last years, hybridization (or hybridity) has gained a great momentum in our cities and urban regions. However, hybridization is not a recent phenomenon, and it has been discussed since the 1980s. For example, planning and architecture have seen hybridization as a mixture of spatio-functional features (such as mixed use, multi-functionality and flexibility) and social features (such as formal and informal interactions and the spontaneous appropriation of spaces) or have sometimes simply focused on the physical dimension of urban spaces. Studies from other disciplines (e. g. mobility networks, transportation, sociology and information technology) have shown that the rapid technological advancements are impacting our cities and contributing to accelerate hybridization processes. Thus, hybridity requires a deeper understanding of this mixture of physical, social and digital spaces/features since it can contribute to re-shape the urban environments and lead to new hybrid cities and lifestyles.

Hybridization has experienced a notable surge during the pandemic amongst official planners, policy makers and stakeholders. The debate around hybrid city spaces and buildings has also gained greater attention in relation to the hybrid work. However, little is known about other forms of hybridity linked to other urban domains such as leisure, transport, housing, learning, retail, governance and care.

Firstly, the study provides a conceptual framework for exploring the hybridization processes within living, working and urban green care. Then, the study provides a comparative overview of the two urban regions of Oslo and Lisbon. The data were collected within the HYBGEN project (Young generations trapped in hybrid lifestyles: Challenges in ways of living and working towards the urban green care in Lisbon and Oslo- Research funded by EEA Grants, 2024), which was led by the two co-authors. The collaborative workshop was used as an investigative method of this study. To specify, two workshops were arranged in Oslo and Lisbon, respectively, between May and July 2024. Through the workshops, we aimed to i) profile the hybrid lifestyle of participants (through interviews in pairs); ii) develop scenarios for hybrid lifestyles (by using group work); and iii) identify and discuss the implications for society and urban regions (within group discussions)

The findings of the study reveal that young Norwegians prioritize sustainable consumption, aiming to minimize their ecological footprint while embracing a healthier lifestyle. In Portugal the young people express deep dissatisfaction with the lack of social support for housing, job insecurity, and low wages. This frustration is further mirrored in their aspirations to emigrate and a perceived helplessness in addressing climate change.

The study contributes to explore different forms of hybridity that can co-exist and be complementary within the three domains of living, working and urban green care and their impacts on new narratives and strategies in planning. Several implications for society and cities, such as sustainable consumption, climate adaptation, inter-generational interactions, equitable future and societal transitions are also discussed.

Keywords:

hybridization; digitalization; urban green care: young generations; sustainable consumption;

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T_09 URBAN FUTURES / 1509

Breaking Old Patterns: The Transformative Role of Innovation in Shaping Regional Trajectories in CEE

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Complex interactions between various actors including state institutions, private enterprises and civic organizations shape the socio-spatial transformation of Central and Eastern Europe (CEE). This study explores the role of innovation as a transformative force in regional futures within the CEE context. The CEE region's transition from socialist economies to market-driven development has led to uneven regional growth, socio-spatial polarization and shifting patterns of urbanization (Scott & Kühn, 2012; Nagy et al., 2022; Rácz & Egyed, 2023). These structural shifts have created disparities in economic development, infrastructure and regional integration, with former industrial regions experiencing significant economic decline while urban cores undergo rapid transformation (Tsenkova, 2003; Bouzarovski et al., 2017).

The idea of creating something entirely new—disrupting old paradigms of thought and problem-solving—generates excitement at both the individual and institutional levels. There has been an ongoing push to rethink how we produce knowledge, create products and design innovative spaces. In theory, innovation presents itself as a solution, a force capable of pulling industries, firms, local production centers and entire regions out of developmental stagnation. However, the process is not as straightforward. However, the discourse on innovation allows us to rethink developmental dead ends from multiple perspectives. Cultural, social and political contexts deeply embedded in localities are crucial considerations for planners when formulating policy solutions.

Against this backdrop, the REGINNO project investigates the innovation capacity of Slovak regions (Kraje) at the NUTS 3 level, examining sectoral, spatial and human agency dimensions. This research provides key insights into policy-making in regional innovation and regional disparities in Slovakia and neighboring CEE countries. The findings are based on a three-year-long research effort that integrates academic perspectives with local insights. The researcher, through fieldwork, interviews and visits across Slovakia, engaged with public, private, academic and non-governmental actors, learning the language and closely observing the local socio-economic environment.

This research supports and extends existing literature on regional transformation in CEE by examining urban restructuring, socio-economic cohesion and the role of planning actors. Nagy et al. (2022) highlight the emergence of new peripheralities and urban cores, while Raagmaa et al. (2019) identify policy paradoxes that shape socio-spatial dynamics—issues central to this research's focus on governance and planning frameworks. Similarly, Bouzarovski et al. (2017) emphasize the impact of innovation and energy transitions on urban vulnerability, a crucial dimension in understanding the resilience of post-socialist cities. Scott & Kühn (2012) further highlight how policy responses shape regional adaptation and sustainability, reinforcing this study's emphasis on governance mechanisms. By synthesizing these perspectives, this research advances the discourse on regional transformation in CEE, offering insights into the interaction of governance, socio-economic change and spatial planning in fostering innovative regional futures.

Despite progress, challenges remain in integrating regional planning with participatory governance, addressing economic restructuring and ensuring social inclusivity in spatial transformations. This research contributes to the discourse on future-oriented spatial planning, emphasizing the need for adaptive policies that support innovation-driven development with sustainable regional strategies in CEE.

Keywords:

regional transformation; innovation; future-oriented spatial planning; regional futures; CEE; Slovakia

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Reimagining the future of peri-urban spaces: planning narratives for the sustainability of these areas. The case study of “Stena tou Nestou” in Xanthi, Greece

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In the last four decades and especially during the 21st century we observe a strong interest in discourses, strategies and norms regarding the form and functions of urban areas in a sustainable way (Michalina and al, 2021). Even though in documents of international organizations, such as the Agenda 2030, there is a strong commitment for the equal growth of urban areas despite their economic growth and their geographical position (UN, 2015), we note significant differences in the development of small and big urban areas, urban and rural areas as well as areas of the Global North and Global South (Nagendra and al, 2018). Considering the framework of the Sustainable Development Agenda and the need for equitable, inclusive and resilient communities, the paper tries to envisage the future of peri-urban spaces, that is to say the visions, tactics and models that lead to the economic, social and environmental sustainability of these areas. The purpose is to question the appearance of new planning policies for areas outside the cities' limits, which are not fully urbanized and maintain the traces of their past (physical and social).

The research proposes an experimental approach in order to investigate the ways which potentially could lead to the economic, social and environmental sustainability of the above areas. A critical point is to recommend planning methods and tools which could be used as narratives for the development of peri-urban areas that face either economic or social difficulties as economic growth and social equity are, together with environmental protection, the three pillars of sustainable development. The choice of the case study was based on the necessity to reflect and change old narratives and discourses in the planning processes for poor urban and peri-urban areas and to propose a safe and equitable living environment for the inhabitants of these areas. “Stena tou Nestou” (in English it could be translated as narrow pathway alongside Nestos River) is located near the city of Xanthi in the region of Thrace in Northern Greece, an area that maintains its physical and social characteristics since the 20th century and which is nowadays used as a space for leisure and sports. It is important to underline the particular characteristics of the region of Thrace as it is among the less developed at national (Greek) level, while at the same time the presence in the region of the Greek Muslim Community poses challenges regarding the just and peaceful transition towards a safe and equitable living environment for all despite their ethnic and cultural background.

The research method used was the descriptive-analytic. The descriptive method was used in order to define planning narratives for the development of peri-urban areas and relate it to previous studies in areas facing significant economic and social difficulties. The analytic method was used as a first step in order to develop later our strategy and model for the development of these areas. Through the above method we identified the reasons that led to economic decline and social injustice and made the necessary correlation between environmental sustainability, economic growth and social equity for the development of the area. In order to achieve these goals, we proposed a development scenario based on the internal strengths and external opportunities for the region of Thrace such as the presence of Democritus University of Thrace (DUTH)

and local enterprises. The study of a real-world setting and its particular characteristics revealed the necessity to consider planning in poor peri-urban areas as a transformative action which seeks to achieve sustainability goals through strategies and tools at different governance levels (national, regional, municipal) and in different sectors (economic, environmental, social).

Keywords:

planning narratives, peri-urban areas, social and economic injustice, Xanthi (Greece)

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Unveiling Hidden Potential. A New Typological Approach for the Underground Landscape.

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The growing pressures related to urbanization and environmental challenges, including climate change and intensive land use, make attention to underground spaces crucial as a strategic resource for future cities. Usually analyzed in two dimensions, our metropolises are growing in depth without real structured volumetric urban planning: a systematic criterion for analyzing and understanding the underground landscape's complexity and the vertical city is lacking. This contribution aims to fill this gap by proposing an in-depth typological analysis of underground spaces, targeting, identifying, and classifying what already exists beneath our cities and exploring its untapped potential for future needs.

The three-dimensional perspective of the city started with the underground sewer pictures taken by Felix Nadar in 1864 in Paris. From that moment on, everyone started to perceive what lies underground as part of the metropolis and an active participant in the city's development and transformation. Currently, the underground landscape is analyzed in three different ways: firstly, considering which activities can be buried below the surface to avoid urban sprawl and still offer the 15-minute city development, then how to design these spaces, avoiding the cave-like atmosphere and finally, the resource potential the underground can offer. The below surface realm is studied as a shield from extreme weather, providing stable temperatures for heating and cooling and reducing energy consumption thanks to its isolation characteristics. Even with its great potential in urbanism, these approaches are analyzed separately without creating a holistic view of the subterranean space, which remains not comprehended as a whole object. Therefore, a fundamental aspect of the research is the concept of 'thick city,' which redefines urban morphology as a multidimensional system where visible and invisible spaces intertwine.

The research introduces a theoretical framework based on four stratified stratus that characterize the underground realm: surface layer, medium layer, deep layer, and ultra-deep layer. Each level is the container of specific functionalities, from basements and utility networks next to the surface to strategic infrastructures such as the metro in the

medium strata or storage and geothermal systems going deeper. By examining case studies such as the first sewage and metro systems of Paris and London, The Cargo Swiss terrain in Switzerland, the Zero Carbon Farms in London, or the underground apartments in Beijing, the research analyzes the interactions between different layers and the surface, emphasizing the role of the underground as an urban palimpsest.

The focal role the underground landscape has in the city's transformation and growth is described in the research by the use of maps: the cartographic method introduced by Henry's Beck in 1933 for the subways network of London introduced a topological approach to the underground where more than the geographical reference, the starting and ending points result crucial in the analysis. Beck's diagram introduces a typological study of the subterranean landscape, where spatial underground connections are divided into geometrical or topological, and possible connectivity solutions between horizontal, vertical, and nodal urban development and growth are classified.

The results offer a typological taxonomy of underground spaces, which helps analyze existing infrastructure and plan future interventions. The contribution concludes with recommendations for designing policies that leverage the underground as a resource for sustainable and resilient urban growth, in line with climate challenges and the needs of contemporary cities.

A three-dimensional urban morphology approach is needed to solve our age's principal emergency: the first step is a solid urban plan theory, which can help us understand how the city's landscape we leave is structured. Only after understanding how the city is structured will we know how its components can influence its transformations.

Keywords:

Underground Urbanism; Typology; Subterranean Taxonomy; Thick city, Layered Urban Landscape

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Circular narratives and transformative planning: rethinking wastelands

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In the contemporary global context, the intensifying climate, environmental, and social crises, combined with unsustainable and linear development models, raise pressing questions about the transformative role of territorial planning. Historically, planning has predominantly been focused on managing urban growth and facilitating spatial expansion, aligning with the dominant economic frameworks of the 20th century. This approach, designed to prioritize quantitative over qualitative development demands, has led to intensive soil consumption and environmental degradation. As a result, fragmented urban fabrics emerged, characterized by discontinuous and poorly functional landscapes, contributing to the proliferation of so-called “wastelands”. These abandoned and marginalized spaces, the visible outcomes of structural inefficiencies and the lack of an integrated vision, embody both the failure of traditional planning narratives and the opportunity to rethink regeneration strategies through innovative approaches. In this context, soil emerges as one of the keys and more strategical resources. Traditionally perceived as a static and passive substrate, soil –particularly within wastelands –can be reinterpreted as a dynamic component capable of catalyzing regenerative processes that intertwine ecological, economic, and social dimensions. Its multifunctionality establishes it as a foundation for rebalancing relationships between urban and natural systems, emphasizing the urgency of adopting approaches that recognize its strategic value. However, reimagining soil and wastelands as active resources requires a paradigm shift, moving beyond linear, sectoral narratives toward a more integrated and systemic vision. In this framework, circular economy (CE) and urban metabolism (UM) emerge as two complementary paradigms that can significantly contribute to territorial planning. While CE and UM have already demonstrated their potential in optimizing resource flows and fostering interconnected territorial dynamics, their integration into planning practices often remains fragmented, constrained by regulatory, cultural, and operational barriers.

This contribution presents a research that addresses the gap in integrating the principles of CE and UM can be embedded into planning practices to transform wastelands from marginalized areas into strategic nodes within a regenerative territorial system that fosters sustainability, innovation, and inclusivity.

In this perspective, the research develops along two main directions. The first focuses on a critical analysis of traditional planning narratives, highlighting their inherent limitations and proposing new interpretative models capable of addressing territorial complexity in an integrated, systemic, and circular way. This theoretical reflection seeks to overcome deep-rooted dichotomies between urban and rural, advocating for a type of planning that does not merely manage change but actively steers it toward meaningful transformation. The second direction, more practical in nature, involves the formulation of policy guidelines based on a comparative analysis of successful European case studies. Drawing on experiences in Italy, the Netherlands, and the United Kingdom, the research identifies strategic levers and scalable tools adaptable to diverse territorial contexts, translating theoretical principles into concrete operational strategies.

Rethinking wastelands as strategic resources is not merely a response to pressing environmental and social urgencies; it is also a redefinition of planning itself as a catalyst for transformative change. By connecting innovative narratives with practical tools, this research demonstrates that integrating circular economy, urban metabolism, and circular soil management provides a viable pathway for advancing a regenerative model capable of addressing contemporary challenges. Embracing this new mindset allows for a redefinition of wastelands, not as a critical issue of past inefficiencies but as opportunities to build a fairer, more resilient, and sustainable future. Moreover, lessons drawn from the case studies confirm that transformative and multidimensional planning can not only address environmental and social crises but also generate territorial innovation, leveraging local specificities and linking them to a global vision.

Keywords:

Regenerative planning; wastelands transformation; circular approaches; soil management; innovative policies.

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T_09 URBAN FUTURES / 1810

SUBURBANIZATION IN TURKEY: TOWARDS ANTIFRAGILE PLANNING

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In recent years, alongside globalization, the population has been rapidly increasing and cities have been evolving accordingly. This phenomenon has led to urban expansion and intensified pressures on urban areas. As cities expand towards the suburbs, examining suburban areas has become more important for the future of cities. Suburbs are generally consumerist, residential settlements where the middle and upper classes are concentrated. Especially in the last two decades, suburban studies have sought a new conceptual framework to go beyond the traditional dichotomies of urban space, namely the center-periphery division. As has been discussed by several scholars recently, the socio-spatial and socio-economic polarizations that constantly occur with the expansion of suburbs are fundamental points to be dealt with. In Turkey, this suburbanization process began to emerge in the 20th century. The upper middle class in Turkey also tended to live in these areas in order to 'classify and differentiate' themselves and to want to live in lower density areas. When the first steps of this suburbanization process (planned) were taken, moving to detached villas with gardens in Istanbul was a class indicator that was abandoned for a more 'civilized' environment. In Ankara, this process started a little later and gained momentum with the middle class. However over time, the expansion of these areas has triggered the effects of unequal spatial distribution. Moreover, they have transitioned from homogeneous structures to more complex spaces characterized by socio-economic inequalities. Therefore, social and spatial fragilities emerge. Additionally, the construction of suburbs based on traditional approaches, along with changes in urban futures, is expected to exacerbate environmental, social, and economic fragilities due to uncertainties arising from globalization and urbanization-driven population growth, as well as risks related to climate, finance, and health. These fragilities, together with the fact that cities are complex phenomena and their futures are uncertain, have made them critical concepts that must be thoroughly examined to ensure an equitable and just future. However, old narratives cannot provide sufficient long-term solutions for suburbans. The study therefore examines the limitations of current planning paradigms and the planning processes of suburbs, embracing the uncertainty of the future of cities, emphasizing the need for sustainable and even equitable

solutions and ‘transformative and adaptive’ new narratives. Urban planning generally transforms fragile structures while designing areas and communities that are ‘resilient’ against these uncertainties and risks. However, the concepts of fragility and anti-fragility, recently put forward by Taleb (2012) and Aven (2015), aim not only to provide resilience against these shocks, but also to strengthen them by feeding on uncertainties and complexities. In this context, compared to traditional planning approaches, this perspective offers a new anti-fragility approach to cities in a more innovative framework. The study investigates how “Anti-fragility Planning” approaches can be integrated in suburbanization processes in the future, aiming to reduce socio-spatial fragility, strengthen communities and emerge stronger from unexpected challenges or risks. Therefore, the method of this study examines old narratives and fragilities that emerge in suburbanization processes, and there are theoretical discussions and literature comparisons that include new narratives based on the research question of what suburbs could be like in the future of cities with more anti-fragile approaches that can cope with these uncertainties. Consequently, particularly in suburbanization in Turkey can build their capacity in the face of existing fragility or future uncertainties and unpredictability can emerge. For future research, this study can also lead to the development of new approaches to thinking and action practices that embrace uncertainty and complexity in creating an innovative, just, equitable urban future with its antifragile perspective.

Keywords:

Urban Future; Uncertainty; Anti-fragility; Suburbanization; Turkey

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T_09 URBAN FUTURES / 448

“Possibility Design”: accepting indeterminacy, irreversibility and complexity in urban policy-making

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Since Leibniz, the conceptual construct of “possible worlds” has been widely used to understand what is thinkable, necessary, or contingent. The creation of alternate versions of reality is particularly important for whoever has to test and evaluate different

choices, events and natural laws that might exist, so as to examine moral dilemmas and metaphysical questions before putting them into practice. Architects and planners are engaged in world-building activities by definition, and planning academics increasingly resort to “possible world” narratives, proposing specific ideas of “the good”, “most fit”, and “the urban” itself. In this paper, the concept of “possibility design” is introduced not to discuss which “possible worlds” are to be reached but to explore the “world of the possible” without the presumption to predict or prescribe a precise state of affairs. The central focus is on human possibilities, assuming that their nature and expansion are largely influenced by cities and that cities themselves are expressions of human possibilities. To argue so, this paper illustrates how “possibility design” affects both the conception and development of specific domains of spatial design (e.g. mobility infrastructures, building activities, welfare policies). The main challenges for urban “possibility designers” are essentially two: (i) recognizing human activities as a search and combination of possibilities and (ii) supporting human activities across space and time. A critical discussion follows, highlighting the main descriptive and normative implications at stake. On the one hand, exploring the “world of the possible” requires accepting indeterminacy and dynamicity as essential elements of complex systems –especially man-made ones. On the other hand, desiring to seriously expand, differentiate and protect “human possibilities” requires going beyond concerns of precise calculation.

Keywords:

possibility; urban planning; spatial design; urban policies; indeterminacy

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T_09 URBAN FUTURES / 912

Other Smartness: Experimental Praxis of Smart Cities in India

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Smart cities are a new paradigm of urban developmental transformation in the 21st Century for cities across the world. There is no universally agreed conceptualization or definition of the notion of Smartness and Smart cities, and cities around the world have developed their operational models of Smartness at the intersection of urban planning, technology-based transformations - primarily digital, municipal service delivery, policy, and governance, eventually shaping the design of the built environment at all levels. Smart Cities with an emphasis on resource optimization, renewable energy, reduction of pollution, and real-time planning have the potential to become key drivers for addressing complex urban challenges and environmental sustainability (Konninos, 2020). However, to address these challenges there is a need for urban actors to move beyond the ICT (Information and Communication Technology) dominant approach and smart

cities should engage with sustainability and community-centric issues (Praharaj and Han, 2019).

Smart Cities Mission in India has been a unique experimental policy endeavour that has disrupted conventional planning approaches in the post-independence scenario. It brought a radical shift in the paradigm creating space for multidisciplinary praxis with initiatives such as the Place-making marathon, Nurturing Neighbourhoods, Integrated Command and Control Centres (ICCCs), Freedom to Walk Cycle Run, etc. This has been instrumental in not only addressing the issues in bigger metropolitan cities but also in smaller cities across diverse geographies making it an unprecedented space for transformative action for even smaller cities to define their unique visions and priorities and not necessarily follow the developmental pathways of the bigger cities. This can be defined as the 'Other Smartness' an approach departing from the digitalization of urban systems which has been often associated with the idea of 'Smart Cities'. This has been a key first step towards achieving socio-environmentally just and equitable futures.

The purpose of this research thus, is to bring to light the shift in urban planning, policy and governance paradigms brought about by the Smart Cities Mission, in India, comprising experimental transformative praxis as an enabler of change within conventional institutional structures. The existing literature elaborates on the conceptualizations, keyword analysis, and varied engagements of Smart Cities, however, there is a significant gap in community-centric narratives, on-ground actions and people's perceptions. The author being formerly an advisor working with the national government shall bring insights from the field experiences bridging the scales of national policy formulation, city-level planning, neighbourhood and on-ground action in 100 cities across India. The key findings are; community-centric planning as an outcome of an inter-scalar process, ethno-development through policy, Jugaadness and frugal innovation as smartness.

Keywords:

Other Smartness; Transformative Action Planning; Socio-environmental Justice; Radical Planning

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T_09 URBAN FUTURES / 963

Regional characteristics driving the re-integration of urban-industrial spaces

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Recent studies underscore a renewed trend toward the re-integration of urban-industrial spaces, particularly emphasizing manufacturing activities (Gornig & Werwatz, 2018; Park, 2023). Scholars highlight that cutting-edge digital technologies are pivotal in enhancing industrial productivity, adopting cleaner and more efficient production techniques, and ultimately fostering the re-integration of industrial functions within urban areas (Herrmann et al., 2020; Lane and Rappaport, 2020). Notably, Park's (2023) empirical research demonstrated re-urbanization patterns linked to the establishment

of small-scale, technologically advanced, and environmentally friendly manufacturing facilities post-2010. Furthermore, Park's (2024) subsequent study revealed that the digitalization of production not only boosts productivity but also improves spatial efficiency, thereby promoting the re-integration of industrial spaces into urban contexts. Despite these advancements, a notable lack of empirical research persists regarding the regional attributes influencing the re-integration of urban-industrial spaces. Addressing this gap, this study investigates the temporal-spatial patterns and regional characteristics driving the re-integration of industrial spaces within urban areas, with a particular focus on the Seoul metropolitan region in South Korea. Using spatial micro-data spanning from 2000 to 2022, this research employs panel regression models to identify regional factors facilitating spatial re-integration of urban-industrial spaces. The findings reveal that industrial spaces within the Seoul metropolitan area in South Korea experienced significant spatial separation from urban areas up until the early 2010s. However, this trend has since decelerated, with certain Seoul districts exhibiting a re-integration of industrial and urban spaces. These districts are characterized by the designation of industrial parks and the active development of vertical urban factories. Results from the panel regression analysis underscore the crucial role of urban industrial spaces, particularly vertical factories and industrial parks, in driving this re-integration. This study interprets the observed urban spatial restructuring as a consequence of Industry 4.0 and advancements in digital technology, which promote closer integration of living and working spaces and a convergence of production and consumption activities. The research concludes with policy recommendations aimed at guiding the development of future urban-industrial spaces to sustain and enhance these re-integration trends.

Keywords:

re-integration; urban industrial space; urban manufacturing; re-urbanization of industry

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T_09 URBAN FUTURES / 1020

Evolutionary Urbanism: changing mindsets and innovative narratives for future cities

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Cities and urban spaces worldwide and in South Africa are changing rapidly. New challenges confront planners in dealing with these changes in ways that will consider the future well-being of the planet and its people. Cities, precincts and public spaces need to adapt and transform to address the challenges of rapid urbanisation, densification, climate change, social conflict, exclusion, and disconnection from nature. In a time of planetary crisis and human suffering, cities must adopt alternative approaches to prioritise people and the planet.

As transformative and often disruptive action and forced to deal with complex challenges, Planning relies on strong narratives to inspire and move actors in the most appropriate direction. Old habits clash with new visions, while technological innovation offers

hope and hazards. For example, in South Africa, post-apartheid planning and development policies have repeatedly called for spatial transformation to address many of the abovementioned challenges. However, 30 years after the dawn of democracy, most of the interventions reflect signs of spatial redistribution, with limited evidence of spatial adaptation and regeneration. Social conflict, exclusion and disconnection with nature remain critical in the context of growing urbanization, poverty and inequality. Although international debates highlight the importance of regenerative sustainability, there is still limited evidence of that being promoted and implemented in South Africa.

Building on local planning debates and trends in South Africa, juxtaposed with growing international work on regenerative sustainability, this paper is an experiment to introduce a new narrative towards transformative planning actions. The presentation highlights the need to move beyond a simplistic interpretation of transformation to a more nuanced reading of continuous evolution. The paper proposes the notion of evolutionary urbanism and its supporting principles to allow nature and humans to heal and thrive, harnessing the power of adaptation and regeneration. The discussion argues that evolutionary urbanism could assist in re-orientating planners and other key stakeholders towards more equitable and just futures in rapidly changing cities.

Keywords:

Changing mindsets, alternative narratives, regenerative sustainability, evolutionary urbanism

T_09 URBAN FUTURES / 1564

Thinking back from the tipping point: Institutional temporalities for climate action

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The concept of ‘tipping points’ has been influential in the literature on the climate crisis. The earliest mention of the metaphor ‘tipping point’ was found in studies on racial segregation, where it referred to the factors that triggered the swift departure of the white majority from neighbourhoods in US cities during the 1950s. In the 2000s the use of the term surged significantly, particularly in the fields of climate science, environmental sciences, and ecology (Fischer, 2016). In the book ‘Tipping Point’, the concept of tipping points is related to small initial changes leading to a runaway process, that ultimately cause big transitions (Gladwell, 2001). Lenton in the context of environmental systems defines tipping points as conditions or situations, “where a small perturbation triggers a large response”. They could cause abrupt, system-wide changes that are challenging, significant and irreversible (Lenton, 2013). It is a type of threshold (Lenton et al., 2023).

The idea that systems (including the planet) may be close to a point of change where a small amount of force could cause a major transformation, is intuitive and powerful, especially in light of the increasing frequency of extreme weather events, and the palpable advent of the ‘age of permanent crisis’ (Chakravarty, 2024). How should governments and institutions adapt their processes in view of the literature on tipping points? Building on the literature on climate and social tipping points, the study introduces the idea of an ‘institutional tipping point’—the critical moment before which institutions must act to influence climate outcomes effectively.

The study reviews tipping point interpretations across domains like evolution, social, political, and ecological sciences, including frameworks by Lenton and Sterman. Drawing on insights from planning theory (Hopkins, 2001) and policy studies, it argues for

proactive, strategic action by governments to intervene before natural systems reach irreversible thresholds. Emphasizing the importance of timely, coordinated policymaking, the study proposes a 'backcasting approach' that incorporates the lags that the institution might face, to determine necessary lead times for effective institutional responses.

Keywords:

temporality; tipping points; climate action; institutions

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T_09 URBAN FUTURES / 883

Unfolding social-ecological systems futures at local scale through dynamic adaptive policy pathways scenario making; a case from Milan, Italy

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Human-nature relations in urban areas are one of the complex topics in planning discourse. Global challenges like climate change and warming and, in general, living qualities in cities for both humans and nature add another layer of uncertainty to future calculations. Changes in human living conditions, besides their significant economic effects, pose a threat to the social-ecological system of cities. In cities, the decline of biodiversity, the rise in ecosystem disservices, and local social challenges due to heat or disease are examples of this. Mapping social-ecological systems and future scenario makings at national, regional and urban scales are well documented and investigated in the literature. However, local and neighbour scale long-term scenarios regarding human-nature relations need a covering approach to deal with uncertainties and complexities. This research aims to answer the question of how planners in an uncertain local context can uncover long-term future scenarios of social-ecological systems. By building on previous contributions, an improved social-ecological system framework is introduced. The introduced social-ecological systems framework, by integrating ecosystem services and urban biodiversity variables within the conventional structure, introduces a comprehensive mapping system of local human-nature relations at a local park in Milan (Italy)

through collaborative sessions with citizens and stakeholders. To unfold long-term future scenarios, the research adapts a dynamic adaptive policy pathway scenario-making strategy. This approach not only uncovers possible pathways to the future based on contextual realities and posed uncertainties but also offers decision-makers a comprehensive view of social-ecological aspects through bottom-up narratives. This research concludes by showcasing the optimal long-term scenario for the case study by implementing local and regional plans within different social-ecological scenarios. Integrating contextual values and local narratives in decision-making, preserving urban biodiversity, covering gradual changes or extreme scenarios, and optimising local policies on re-naturing measures are added values of this methodology in comparison to traditional approaches in scenario making.

Keywords:

scenario-making; social-ecological systems; DAPP; transformative governance

T_09 URBAN FUTURES / 978

Building Scenarios for Future Communities: Empirical Insights from China

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In the wake of advancements in information and intelligent technologies, urban development has transitioned into an era marked by heightened levels of intelligence and modernisation. Academics are now grappling with two fundamental questions: what will future communities resemble, and how can existing communities be progressively transformed to embody these futuristic ideals? Globally, countries are undertaking pioneering construction practices aimed at developing future communities, such as the Quayside Project Cancellation in Canada and Toyota's 'Woven City' in Japan. Within China, a multitude of cities have responded by formulating policies specifically for future communities and executing numerous construction projects. A prime example is Shanghai's 'Jiading Ideal Land', which stands as a completed, emblematic project that heralds a novel paradigm in real estate development. This paper aims to investigate the construction and development of future communities within the distinct socio-economic landscape of China. By conducting a textual analysis of pertinent policies and construction cases, this study articulates four principal scenarios for future community development: green living environments, low-carbon sustainability, smart technological integration, and vibrant societal engagement. Each scenario is preliminarily framed and thoroughly examined through detailed descriptions, theoretical explanations, case studies, and a compilation of technology lists derived from over a hundred instances. Additionally, drawing on field investigations and in-depth interviews conducted at Shanghai's 'Jiading Ideal Land', the paper offers empirical insights into China's approach to building future communities. This encompasses: The collaborative models between governmental bodies and enterprises, which concentrate on strategic top-level design, investment frameworks, and policy research. The proposition of planning theories centred around the '1+N+X' model exemplified by the 'Jiading Ideal Land'. An exploration of the technological spectrum employed in future communities. An examination of supply chain systems, including comparative analyses of distinctive suppliers and their products. The establishment of evaluation systems designed to gauge customer perception and validate assessment criteria. Ultimately, this study seeks to provide valuable reference material for policymakers and practitioners, informing the formulation of effective policies and strategies for the development of future communities.

Keywords:

Future Communities;Scenario Building;Empirical Analysis;Jiading Ideal Land

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Aspiration and reality: Experiences and reflexions on the initiation, emergence and implementation of urban (and regional) futures

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Transformative visions and sustainability foresight are discussed as a key factor of urban capacities for sustainability transformation (Wolfram 2016). It is not only the transition management approach that assumes that, following a systemic analysis of the initial situation, a long-term vision of wellbeing while respecting planetary boundaries is required in order to derive the necessary strategies and measures for the here and now (Loorbach 2010). Even if the results are astonishingly similar in terms of content and visual language - happy faces, lots of urban green, lots of bicycles, lots of wind turbines - the development processes, the spatial and institutional context and the effects in planning processes are very different and we know little about them.

I will present and critically reflect on two visioning processes for decarbonisation at different institutional and spatial scales. One is a process in the context of coal phase-out, energy transition and structural change at the regional level, the other a process in the course of urban climate neutrality endeavours at the local level. Both examples are characterised by contextual conditions that are –so the assumption –rather hostile to sustainability transformation: Structural weakness, shrinking dynamics, brain drain and capacity reduction in the past, negative transformation experiences in the course of deindustrialisation and socio-political upheavals.

On the basis of process monitoring I identify key factors in the initiation and emergence process of urban and regional futures as well as for implementation in urban development and structural policy, where the question of implementation is the most difficult. When is a vision implemented? If transformation pathways are described in order to relate the status quo to the future? If milestones are identified to set manageable goals? If experiments are initiated that break with standard practices? If the decision-makers have been involved in the vision development process and have identified with the vision?

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The power of facilitating through design. Reflections on design-

erly approaches at the nexus of research, practice and policy-making.

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Where design is often narrowly interpreted as ‘giving shape to things’, its potential goes beyond formgiving. This research specifically focuses on the nexus of research, practice, and policymaking in shaping urban futures and the potential of the designer’s role at this intersection of disciplines and scales.

By revisiting key literature of the recent past and examining a range of contemporary projects and practices, the research offers a critical reflection on how historical and current approaches inform and transform the designer’s role. It highlights the importance of understanding the designer not merely as a creator of physical spaces but as a pivotal figure in reimagining urban environments.

A selection of case studies from north-western Europe is used to explore these themes, examining how various projects reflect the evolving narratives and strategies that have shaped design and planning practices over time. These cases, which range in scale and scope, are analyzed not only for their specific outcomes but also for the underlying discourses and tactics that have influenced their development. This approach allows a consideration of how both historical contexts and contemporary challenges inform the designer’s role in different settings.

This research positions designers as key agents in bridging the gap between theoretical frameworks and practical applications. It emphasizes the importance of their engagement with the regulatory and institutional “dark matter”(Orff, 2016) that often dictates the feasibility and scope of urban projects. By critically reflecting on past and present strategies, designers can question existing norms and contribute to new visions that respond to contemporary urban challenges.

The research also reflects on the designer’s toolkit. More specifically it underscores the importance of their capacity for visual storytelling—using maps, sketches, and renders to articulate potential (urban) futures—as an essential tool for engaging diverse stakeholders and fostering dialogue. This capability allows designers to navigate the complexities of policy and practice, contributing to more inclusive and adaptable urban futures.

Ultimately, this research advocates for a reconceptualization of the designer’s role as one that transcends disciplinary boundaries, positioning them as facilitators of change who draw upon both historical insights and current innovations. By reflecting on both established and emerging discourses, the study provides a nuanced perspective on how designers can contribute to creating sustainable, equitable, and visionary urban environments.

Keywords:

Designers roles; dark matter; design toolkit; research through design

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How imaginative design and experiential scenario's informed Dutch strategic planning: the crucial case of Netherlands Now as Design (1987)

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Spatial planning scholars have long emphasized the need for future-oriented and strategic thinking in planning practice (e.g. Couclelis, 2005). Spatial planning requires a future-oriented approach now more than ever, given the growing challenges of climate change and the transformations needed across multiple sectors to achieve sustainability goals. In this paper, I examine how imaginative design and experiential futuring contribute to strategic and long-term planning, focusing on the case of 'Netherlands Now as Design' (NND). Drawing on planning theory and science and technology studies, I explore how techniques of futuring help co-produce shared images of the future, paying specific attention to the dramaturgy of this futuring intervention (Hajer & Pelzer, 2018).

While calls for imagination are now increasingly made, our understanding of how imagination works in planning and design processes is still limited. More specifically, we lack a detailed understanding of how imaginative interventions in planning and design processes can be effectively staged. In that context, it is instructive to analyse the lead up to the Fourth Memorandum on Strategic Planning in the Netherlands (1988). This is widely seen as one of the most successful memoranda in Dutch spatial planning (Salewski, 2012), marking an approach that by and large still informs spatial planning in the Netherlands.

NND was a five-year design-led exploration of future scenarios for the Netherlands in 2050, culminating in a major public exhibition with 30,000 visitors. By employing speculative design, it countered spatial short-termism, broke through 'a crisis of the imagination', and broadened perspectives on alternative futures. I identify three key ways NND influenced Dutch planning: (1) fostering a coalition of designers, planners, and academics who shaped planning for decades, (2) informing the Fourth Memorandum on Strategic Planning (1988), and (3) demonstrating how spatial design can engage the public and make abstract planning issues more tangible. Ultimately, this case highlights how design interventions can shape long-term strategic planning.

Keywords:

experiential futuring; techniques of futuring; imaginative design; scenario's

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T_09 URBAN FUTURES / 142

The future of resharing practices in Norwegian neighborhoods: Perspectives from residents and stakeholders

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This paper is based on a compilation of findings emerging from a series of workshops conducted in Oslo's city region and explores the conceptual framing of 'resharing' through residents' and practitioners' framing of future sharing practices, needs for material and physical access and imageries for sustainable consumption of this city region. We define 'resharing' as a set of practices where spatial- and mobility-sharing practices are integrated and a vital part of the neighbourhood. To specify, data presented in this study was gathered from four workshops conducted in 2023, three of which were conducted with the residents, while one was undertaken with the mobility providers, transportation departments and representatives of local NGOs of Oslo city region. Additionally, we have also analysed data from one of the ongoing shared living cooperative housing experiments being run by OBOS, one of the biggest cooperative developers of the Oslo region. What emerges is a consistent picture of the gaps present at the very core of the region's strategies for sustainable consumption. Shared solutions, as a sub-set of sustainable consumption, is being discussed in narrow terms and remains disjointed from the mainstream agendas in urban and transport planning. Resultantly, spatial and mobility strategies remain separate domains. Findings reveal that residents' preferences for 'bounded sharing', 'car-free living', 'trust', 'clear guidelines for sharing practices' etc. are still not mainstream elements of strategies targeting sustainable consumption. We build on the theoretical foundations provided by literature available on sustainable consumption, sharing (as one of the pillars of the circular approaches to cities/neighbourhoods) and Social Practice Theory, and we compare our findings to the essence of the literature review. The paper concludes by proposing a set of strategies for urban resharing which need to be integrated in the place making strategies of Oslo's city region. A few of these include –(i) demarcation of units or areas for sharing and formation of core sharing groups (ii) clear guidelines on how to gain and control access to these core sharing groups for separate residential blocks, areas etc. (iii) delineation of responsibilities for maintenance of shared spaces and shared mobility modes (iv) modalities to access via both digital and non-digital interfaces (v) easy availability of information on the different aspects of resharing (vi) role that the state can play in carving out affordable strategies for the residents, which are also profitable for the sharing providers.

Keywords:

shared mobility; shared space; sustainable consumption; sustainable densification; circular neighborhoods

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T_09 URBAN FUTURES / 1859

Community Perspectives on Co-Planning Practices in Disaster Risk Reduction: Lessons Learned from Istanbul in the Tomorrow's Cities Project

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According to UN-Habitat, over 2 billion people are expected to live in cities worldwide by 2050, which may increase disaster risk from devastating earthquakes and growing threats of floods and landslides, worsened by climate change. This scenario underscores the urgent need for local governments and planning authorities to create inclusive and risk-sensitive urban planning practices that support the achievement of sustainable and resilient cities.

The Tomorrow's Cities Project (Urban Disaster Risk Hub funded by UKRI) was established to engage in integrated, multi-scale, and multi-disciplinary international research and implementation aimed at mitigating disaster risk for poor and marginalized groups in expanding cities throughout the Global South. The project seeks to enhance the capacity of local governments and communities via the Tomorrow's Cities Decision Support Environment (TCDSE), facilitating a better understanding of multi-hazard risks, their drivers, and the reciprocal impacts of urban planning decisions. Additionally, it aims to improve national and local decision-making processes to reduce disaster risk in future (tomorrow's) cities.

TCDSE employs a staged process that enables iterative clarification of the disaster risk consequences stemming from urban planning decisions, promoting the optimization of urban planning for low-risk futures. A vital element is the community-based risk reduction approach, which begins with participatory future visioning practices, such as co-produced urban plans and future-oriented exposure models that establish risk agreements in the cities of tomorrow. Consequently, levels of community participation and attitudes are critical for enhancing community resilience, which is essential for mitigating future urban disaster risk.

This study presents the community perspective on the co-planning approach, known as "urban scenarios," within the TCDSE deployment in Istanbul, which was pivotal in shaping the TCDSE framework. The deployment took place in one of Istanbul's vulnerable areas, the Büyükçekmece district, which is also experiencing urban expansion. The study involved six different marginalized groups to establish a community-oriented urban planning approach. A series of workshops were organized with residents and local government representatives to develop urban scenarios that reflect the unique characteristics of these community groups. In this study, we will share the outputs and lessons learned, emphasizing key strategies that highlight the importance of community engagement in urban planning and ensure local ownership to support disaster risk reduction policies.

Keywords:

community-based disaster risk reduction; community perspectives; TCDSE; Tomorrow's Cities; Istanbul

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Adaptive Riverside Urbanity: Rethinking Urban Design Principles under Climate Uncertainty

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Traditional urban design approaches typically estimate the flow of rivers traversing urban areas using historical data, which forms the basis for developing spatial proposals. However, climate change's observable and escalating impacts have profoundly challenged and reshaped these conventional methodologies. Rising temperatures, changing precipitation patterns, and the increasing frequency of extreme weather events have introduced uncertainties in river behaviors, ranging from floods to droughts. In response to these uncertainties and changing conditions, recent innovations in hydrological modeling methods have begun incorporating multiple possible scenarios. Nevertheless, studies that prioritize these new scenarios and propose spatial solutions within the field of urban design remain quite limited. This study addresses this gap by discussing how new urban design approaches and principles can be shaped for rivers and their surroundings in urban areas under potential scenarios resulting from climate change. It emphasizes the need to shift from static planning methods to more dynamic, adaptive strategies that embrace flexibility and resilience in the face of environmental uncertainties. The study also highlights the importance of integrating ecological preservation, public accessibility, and social interaction in riverfront spaces to create vibrant, multifunctional, and sustainable urban environments.

In this context, the study draws on the concept of riverside urbanity, first examining the dimensions of waterfront spaces and spatial design approaches and principles. Then it explores the effects of climate change on water resources specifically rivers running through the cities, the traditional and new methods for estimating the flows, and possible scenarios based on these calculations. In the third part, the study focuses on how the relationship between the river and the city can be preserved and strengthened under the various scenarios that climate change brings, revisiting the concept of adaptability. Examining different case studies worldwide, the study draws a framework for adaptive riverside urbanity and puts forth the indicators and design approaches. Ultimately, this research aims to guide urban planners and designers seeking to address the challenges posed by climate change while fostering sustainable and vibrant riverside urban spaces.

T_09 URBAN FUTURES / 1196

Reflective Practice as a Catalyst for Transformative Urban Research

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Central Theme

How can we observe progress in the context of complex, transdisciplinary urban research projects? Each transformative urban development project is embedded in a web of global dynamics, local contexts, and multi-layered funding priorities, making impact monitoring especially challenging. To address this complexity, this contribution proposes an impact-oriented monitoring framework that goes beyond static indicators and meets the high degree of flexibility required in rapidly changing urban environments (Albert, 2022; Slawski et al., 2022). Developed through the practical experiences of various urban research projects within the Sustainable Urban Regions (SURE) International urban research initiative, the framework features two key components: self-set references, where projects define their objectives as criteria, and a culture of reflection, which

ensures ongoing realignment of these objectives based on real-world experiences. Together, these elements create effective narratives and guide the pathway of transformative urban development towards a more sustainable and resilient future.

Background

Reflection, in this context, is defined as “the practice of periodically stepping back to ponder the meaning of what has transpired to oneself and others in the immediate environment”(Raelin, 2002, p. 66). This process is essential for experiential learning, helping teams gain deeper insights into their work and adapt their approaches to changing circumstances. It expands problem-solving skills, encourages the discovery of new approaches, and helps to address biases (Realen, 2002; Sensoy & DiAngelo, 2018). As such, reflection is particularly important in research and actions that aim to be transformative and span different cultures and disciplines. Incorporated into impact monitoring, it offers a more dynamic and application-oriented way of observing progress toward impact than relying solely on fixed, often quantitative, indicators (Albert, 2022).

To support and institutionalize reflective practices across urban development and research projects, the SURE Toolbox for Reflection offers a starting point. This curated set of reflection tools is designed to foster collaboration, stimulate reflective thinking, and ultimately strengthen the impact of projects. The Toolbox has been shaped by both theoretical insights and practical experience from the transdisciplinary urban research projects, and further refined through feedback from workshops, peer discussions, and collaborative sessions. The tools address the various needs identified - from formalizing informal reflection that often takes place outside of working hours, to creating a safe space for dialogue, identifying if one is on the right track and what needs to change, harvesting (local) knowledge, fostering a common language, and creating impactful narratives.

Key Takeaways

The presented Toolbox for Reflection offers a practical guide to reflection, enabling teams to easily embed reflection into their project work with tools that meet their needs at different stages of the project: from envisioning and strategising project goals, to tracking progress, promoting knowledge sharing and collaboration, to tools for gathering insights and capturing outcomes, especially towards the end of the project. These tools are not only practical but also adaptable, allowing teams to reflect at individual, team, and stakeholder levels, ensuring that critical insights are captured, shared, and acted upon.

The impact-oriented monitoring framework offers an innovative alternative to traditional monitoring systems. By emphasizing ongoing reflection, it facilitates deeper engagement, uncovers fresh insights, and provides new ways forward in urban transformation efforts. Ultimately, this approach encourages long-lasting, transformative change in the development of urban regions, equipping teams to navigate the complexities of urban realities with greater agility and awareness. Through reflective practice and structured monitoring, this framework empowers transformative urban research to achieve meaningful and sustainable impacts in complex, evolving environments.

Keywords:

Reflective Practice; Transformation; Impact-Monitoring; Transnational Collaboration

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T_09 URBAN FUTURES / 1014**Non-Statutory Participatory Planning as a Framework for Empowering Public Engagement: A Case Study of Fingal, Ireland****Author:** Antonije Ćatić¹**Co-authors:** Chiara Cocco²; Hrishikesh Ballal³; Beatriz Martinez-Pastor²¹ *PhD Student at University College Dublin*² *University College Dublin*³ *Geodesignhub***Corresponding Authors:** hrishi@geodesignhub.com, chiara.cocco@ucd.ie, beatriz.martinez-pastor@ucd.ie, antonije.catic@ucdconnect.ie

The contemporary planning paradigm emphasises the importance of communication, collaboration, and public participation, reframing planners as facilitators and communities as key stakeholders in decision-making processes. This approach seeks to create equitable inclusive spaces for dialogue among diverse stakeholders, focusing on citizens and communities as central players in shaping spatial policies. However, economic and political pressures have increasingly led to the diminishing of public participation, including Ireland.

In Ireland, legal amendments to the planning framework have prioritised private sector interests, often at the expense of public involvement, making current participation models inadequate for democratic practice (Healy et al., 2012; Lennon & Waldron, 2019; Perić et al., 2024). This trend threatens the democratic foundations of planning, emphasising the urgent need for alternative mechanisms to support public interests, and creating opportunities for the introduction of non-statutory approaches. Novel participatory practices emerged as a potential solution for advancing public interest, with digital tools increasingly facilitating public engagement and promoting inclusivity. Among these approaches, geodesign emerged as a framework that merges collaborative planning and GIS technologies. Although it utilises a modern approach to planning, its implementation is not without criticism. Some of the concerns in the literature include the lack of focus on qualitative aspects of participation, limited capacity to address inclusive public participation, and barriers to collaboration between stakeholders (Tulloch, 2017; Debnath et al., 2022). As a result, achieving a fully communicative, collaborative, and inclusive planning process remains an ongoing challenge, particularly in contexts where statutory frameworks fall short of safeguarding public interests.

To address these challenges, deliberative democracy has been proposed as a critical component of participatory planning. By integrating diverse perspectives, recognising differences among participants, and incorporating expert knowledge, deliberative democracy offers a more robust framework for decision-making. This approach offers an opportunity to surpass traditional participatory models by fostering transparency, accountability, and inclusivity. While deliberative democracy has been applied in Ireland for shaping national policies, such as abortion rights, gender equality, climate challenges, etc; its integration into the planning process remains largely unexplored.

This study explores the potential for integrating deliberative democracy and geodesign into non-statutory participation, drawing on initial insights from a pilot conducted in Fingal County, Ireland as part of the H2020 project NBSInfra. A structured participatory framework was developed, incorporating deliberative and geodesign methods with digital tools. The process is unfolded in four phases: (1) broad community input, (2) targeted discussions, (3) expert facilitation, and (4) negotiation among the groups. Each of them reflects a step in the deliberative process, serving as a filter for refining or reimagining planning solutions. Participants reported satisfaction with the inclusive and structured nature of the process, though some challenges were noted. Specifically, some participants highlighted issues of individual dominance during discussions and emphasized

the need for facilitators and experts to develop a deeper understanding of local contexts. Despite these limitations, the process demonstrated significant potential for empowering local communities and authorities.

By fostering meaningful dialogue and collaboration, this integration of methods and tools from both approaches represents a crucial first step toward defining a new framework for community engagement, particularly in contexts where statutory participation is limited. In conclusion, the findings from this study suggest that integrating deliberative democracy with geodesign and participatory digital tools could play a pivotal role in reshaping planning practices, ensuring they remain inclusive and aligned with the public interest in the face of shifting economic and political dynamics.

Keywords:

Collaborative Planning; Planning Support System; Geodesign; Deliberative Democracy; Non-Statutory Participation

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T_09 URBAN FUTURES / 1692

Metropolitan narratives and planning transformation: The cases of Greater Paris and Casablanca

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The metropolis is conceptualised through two contrasting paradigms: its attractiveness, stemming from its centrality within the global urban hierarchy, and its multiple crises—socio-spatial segregation, environmental degradation, urban service failures, and political fragmentation (Bassand, 2007). In the context of intensified interurban competition, metropolitan attractiveness is contingent upon a city's ability to capture global economic flows and strengthen its standing on the international stage (Anttiroiko, 2015).

Therefore, branding and territorial positioning have emerged as strategic instruments for cultivating a distinctive and positive image of urban spaces by integrating heritage and modernity (Ingallina, 2007). Two fundamental dimensions underpin these endeavours: long-term planning, which ensures the sustainability of development strategies, and promotion, which encompasses communication efforts aimed at reinforcing a city's image (Carrillo Nuño, Vidales Astello and Lara Pacheco, 2019).

This paper investigates the evolution of territorial narratives in Greater Paris and Casablanca, examining how they have facilitated novel approaches to metropolitan planning and governance, thereby enhancing both cities' attractiveness. Despite their distinct contexts, both metropolises face comparable challenges, including the need for global repositioning and adaptation to contemporary crises.

Paris is recognised as the world's most attractive city (Euromonitor International, 2024). However, the metropolis faces persistent issues, including a housing crisis and a lack of territorial cohesion, contributing to continuous population decline (Insee, 2024). Framing strategies play a pivotal role in shaping planning policies in Greater Paris. In 2007, President Nicolas Sarkozy introduced a transformational discourse, positioning Paris as a unified and sustainable global metropolis. To accelerate the metropolisation process, the project relied on a comprehensive communication strategy (Pagès, 2010). This narrative materialised through structural reforms, notably the creation of the Grand Paris Express—designed to enhance connectivity in peripheral areas—and the development of specialised economic clusters.

Casablanca is ranked as Africa's leading financial centre (Wardle and Mainelli, 2024). However, by the early 2000s, the city had experienced a decline in territorial attractiveness. The 2013 Royal Speech signalled a narrative shift that led to the Grand Casablanca Development Plan (2015–2020), which initiated a proactive governance approach and introduced novel financing mechanisms. This shift has resulted in significant infrastructure, mobility, and public facility projects, enhancing social cohesion and mitigating socio-spatial fragmentation. Concurrently, a territorial branding strategy was implemented, accompanied by cultural events aimed at reclaiming public spaces and green areas. These initiatives have contributed to shaping a renewed metropolitan identity.

This paper initially examines the role of territorial narratives in shaping planning and governance strategies to enhance metropolitan attractiveness in Greater Paris and Casablanca. Subsequently, it analyses how crises—frequently acting as catalysts—compel metropolises to redefine their policies and realign with emerging global trends. The COVID-19 pandemic has further accelerated this shift, emphasising storylines centred on public health, liveability, and urban resilience. In this context, the paper explores whether Paris and Casablanca have adapted their strategies to address contemporary urban challenges exacerbated by the global health crisis.

The methodology employs a qualitative approach, using interviews with key decision-makers, institutional actors, and urban planning experts, alongside discourse analysis. The objective is to develop a more comprehensive understanding of how narratives influence metropolitan planning, assess their impact on territorial attractiveness, and determine whether they align with contemporary goals of inclusivity and resilience. Ultimately, the paper examines whether these evolving framings contribute to fostering more sustainable and equitable urban futures.

Keywords:

Metropolisation; territorial attractiveness; strategic narratives; planning; governance.

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T_09 URBAN FUTURES / 1502

NEAR AND DISTANT FUTURES: PATH DEPENDENCY VS DISRUPTION IN SPATIAL IMAGINARIES OF THE FUTURE OF ANCIENT CITIES

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This contribution lies on a relational understanding of spatial imaginaries as collective understandings of socio-spatial practices produced through political struggles over the conceptions, perceptions and lived experiences of place (Davoudi, 2018). As an expression of power relations, the need to negotiate different and conflicting spatial imaginaries has emerged in recent planning practices (Haughton & Allmendinger 2015; Crawford 2018, Lingua 2022).

Moreover, the efficacy of spatial imaginaries lies in their institutionalisation. This term is widely used in social theory to refer to the process of embedding concepts, social roles, values or modes of behaviour within an organisation, social system, or society as a whole (Waterout, 2008). In strategic spatial planning, the institutionalisation of spatial imaginaries covers their capacity to travel across significant institutional sites of urban and regional governance. Within these processes, spatial imaginaries are subject to processes of creation and destruction: they can be replaced by a new imaginary that has gained primacy in the meantime and, in some cases, they can later be re-appropriated and reenergized, even in transfigured forms. However, this reading of the “evolution” or “involution” of competing and “winning vs losing” spatial imaginaries does not take into account the kind of futures they envision.

In this contribution, we put into tension the proposal of Augustin et al. (2019) to distinguish between “near” and “distant” futures with Sorensen’s reading of path dependency (2014). The dichotomy near/distant seems to be quite promising in terms of connecting spatial imaginaries to different images of futures, where distance is not a matter of merely extending the time horizon, but points to qualitatively different processes of envisioning the future and orienting action, even toward disruption in path dependencies. By referring to different experiences of envisioning the future of the City of Florence after the pandemic, we will provide an excursus on the relation among path dependencies and future thinking in cities with an ancient past, and we will discuss how spatial imaginaries that envision a distant future have different features than those that envisage a near future, whereas distance refers to how close or critical a future is to contingent experience and social convention and expectations.

Keywords:

future thinking; distant futures; path dependency; disruption; visioning; futuring

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T_09 URBAN FUTURES / 1187

Imagining a city of proximity for fostering transformative capacity towards connected communities

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Throughout Europe, much of urban development has been guided by a planning culture dependent on the automobile regime and centered on efficiency (Urry, 2004; Mattioli et al., 2020). Car dependent planning has contributed to creating a lock-in; which functions as a barrier to sustainable alternatives (Seto et al., 2016). A more transformative mind-set could provide possible pathways to unlock car dependent urban areas. This research aims to find ways to foster transformative capacity to overcome institutional, behavioral and/or infrastructural lock-in.

A promising way for fostering transformative capacity with urban professionals and citizens could be employing the power of (re-)imagination. Re-imagining of what is possible and viable could help opening up to different possible futures as a way out of lock-in (Hajer & Versteeg, 2019). The research distinguishes between (1) the reimagination and cocreation of new futures and (2) the experience of these imaginaries in real life urban experiments. The co-creation and experience of possible futures, by acting them out in the ‘here and now’ through, for instance street experimentation, may challenge the assumptions of the stakeholders on a deeper level (Davoudi, 2023), especially when this is part of a process of learning for transition (Beukers & Bertolini, 2023).

The research focuses on Almere, The Netherlands: a suburban mid-sized city that faces a car dependent lock-in. Almere is a fast-growing Dutch new town built on the utopian ideals of the garden city in the Amsterdam Metropolitan Area with more than 220 000 inhabitants (Chevalier & Tzaninis, 2022). The current lock-in situation in Almere is contradictory, because it has good infrastructure for active (and auto-) mobility, and is, within its neighborhood districts, based on principles of proximity. At the same time, it has

a polycentric spread-out urban structure and is designed for mobility efficiency. Many neighborhoods, especially in some of the older districts like Almere Buiten, struggle with decreasing social cohesion, car-dependency, and a dwindling local economy.

The research will analyze interventions based on the city of proximity, that could enhance transformative capacity of urban professionals and neighborhood key actors. It brings these actors together in a learning community, where contesting imaginaries and alternative imaginaries can come up through dialogue and practice, and, crucially, through imagination (Davoudi, 2023). The learning community and interventions are monitored throughout the process and triangulated with interviews and desk research. The working hypothesis is that through an iterative process of co-creating and experiencing alternative urban imaginaries this may more effectively build transformative capacity for stakeholders to overcome the institutional and behavioral aspects of the lock-in situation towards the creation of more connected communities of proximity.

The proposed presentation for AESOP 2025 is the theoretical framework, research design and preliminary results for the PhD research, which is supervised at the University of Amsterdam and Windesheim University of Applied Sciences.

Keywords:

Transformative capacity; lock-in; empowerment; city of proximity; prefiguration

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T_09 URBAN FUTURES / 1505

From Masdar City, Abu Dhabi to Florya, Istanbul: What Can We Learn from Smart Cities?

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Masdar City, Abu Dhabi, is one of the first smart city models that emerged as an ambitious project, aiming to become the world's first carbon-neutral and zero-waste city and seamlessly weave technology into managing its urban fabric. Masdar City aspired to become a tech and economic hub that attracts investors and researchers, and it hoped its sustainability-through-tech mission would inspire leading actors to become part of Masdar. The project, which started in 2009, is to this day unfinished and ended up becoming largely a ghost city, barely achieving any of its goals and neglecting the most crucial component of a city: people. What would happen if we prioritize the values of community and social equity at the core of designing future cities? To what extent should technology be integrated into their design? Rendering technology as the solution to urban problems is an innately flawed claim, as the nature of the city is too complex to rely solely on technology for development. Instead, technology should be perceived as a facilitator in developing city solutions rather than the solution itself. Upon examining the failures and lessons learned from Masdar City, how can we design a better smart city model focused on community values and community development? To better answer this question, we propose a project that aims to develop a future city model for a site in Florya, Istanbul. In light of Istanbul's rapid urbanization and fast-paced living, developing a city-neighborhood model that fosters connection and social bonds can have positive outcomes when it comes to bottom-up city planning approaches. In this paper, we explore how urban planning can integrate "smart" city applications and support projects, initiatives, and systems that promote social connection through volunteering, local production, and enhanced pedestrian-friendly mobility and walkability solutions. Future cities do not have to be technological utopias but rather offer a reasonable interpretation of the needs of people and their larger communities to build a just and equitable future.

Keywords:

Masdar City; Florya, Istanbul; Urbanization; Future Cities; Community Development

T_09 URBAN FUTURES / 1653

Sensemaking in Urban Experimentation: The Case of Barcelona Superblocks

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Recently, a rich literature on urban experimentation has emerged promising it as a feature to address different agendas: it is seen as a relevant, inclusive, practical and challenging initiative that promotes system innovation and initiates structural change; a central concept in the literature on sustainability transitions; a way to foster social learning in a context of uncertainty and ambiguity (Raven et al., 2019; Sengers et al., 2018, 2019). This definition of the concept gives rise to some hope that it can be used to address unstructured or wicked problems, here seen as problems lacking objectivity and the impossibility and with an unclear solution, due to the conflicting interests and multiple uncertainties involved (Rittel & Webber, 1973). Urban experimentation, if seen as a trial-and-error approach, also draws on Portugal's (1997) concept of self-organisation, where planners are seen as participants in a "huge self-organising process". Despite a clear link between urban experimentation and complexity, there has been no systematic interaction between the former concept and relevant complexity-related organisational theories. The point of this study is that organisational theory, namely Weick's (1988, 1995) well-respected concept of sensemaking enactment, is of undeniable utility in the context of uncertainty and ambiguity of urban experimentation (Sengers et al, 2019). This connection is further strengthened when analysed alongside other meaningful organisational concepts such as Lewin's action research (Lewin, 1946, 1947), systems approaches (Checkland, 2000; Ulrich & Reynolds, 2010) or public value process

(Meynhardt et al., 2016). Understanding these concepts promotes a better control over appropriate enactment strategies, which can unleash a new power of urban experimentation.

The research builds on Weick's concept to analyse one of the most emblematic urban experimentation projects, Barcelona's Superblocks. This project is a flagship initiative launched by the city of Barcelona in 2015, which famously used urban experimentation to demonstrate the benefits of pedestrianising streets and gradually drive urban transformation in different neighbourhoods. However, despite the international success of this project, it caused controversy in the city and polarised political parties during the 2023 election campaigns, resulting in a change of mayor in the last elections (Estruch-Garcia et al., n.d.).

Using the participatory meetings held with the community as the trigger for the sense-making process, this research carries out a content analysis of the minutes of these meetings to analyse the sensemaking enactment in their process. It uses Weick's three basic conditions of enactment –commitment, capacity and expectations (Weick, 1988) – as building blocks, considering them both as enablers and barriers to the sensemaking process (Weick, 1988, Maitlis & Sonenshein, 2010). The aim of the study is to bridge the gap between the recent discussion on urban experimentation and a well-established concept of sensemaking, in order to improve experimentation processes and promote a more sustainable urban future.

Keywords:

Sensemaking; Enactment; Urban Experimentation; Superblocks

T_09 URBAN FUTURES / 240

Local Appropriation Model for Circular Maker Spaces (CMS) in Istanbul

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Cities facing global warming and economic challenges are exploring various strategies to address these issues. The Circular Economy (CE) offers promising solutions, but the effective integration of its strategy at the urban level remains debated. This research focuses on circular maker spaces that blend new technology with creative industries within the framework of Circular Economy (CE) strategies in cities. These spaces have the potential to serve as key catalysts for promoting sustainable urban development by integrating CE principles and values in the cities.

The study's primary objective is to provide a strategic perspective that supports sustainable development by addressing social, economic, and environmental challenges through innovative circular maker spaces via bottom-up approaches. In this context, the study explores how circular maker spaces can be integrated at a local neighborhood scale in cities within the embedded narratives of equity and just future. Building on the main research question, the study examines how Circular Economy (CE) goals can align with diverse values and norms through the lens of sustainable development, using data from six socio-economically diverse neighborhoods in Istanbul to demonstrate how circular maker spaces can be adapted to different contexts. Therefore, the study intends to develop a local appropriation model to guide the site selection and integration process for circular maker spaces (CMS) at the neighborhood scale in Istanbul.

The methodology has been developed on two main methods: (1) The Local Communities Comprehension Tool (LCCT) aims to understand local communities and authorities' expectations, their perception of the CE and its implementation on the local scale, and (2) the development of criteria for site selection using GIS-based analysis, supported by multi-criteria spatial decision-making techniques and pilot testing to ensure sustainable implementation. The criteria for site selection included several important factors, such as being easily accessible for locals, proximity to the neighborhood center, and the selection of waste collection and operation areas that minimize environmental impact. Additionally, detailed descriptions of related facilities and networks were considered, as well as the need for seamless spatial integration within the neighborhood. As a result of the analysis and by understanding local dynamics, the Local Appropriation Model's main structure was developed from the common findings across 6 pilot neighborhoods. Thus, a guide for site selection and integration of Circular Maker Spaces at the local scale has been designed for the Istanbul context.

The study presents an inclusive and holistic perspective, providing an important roadmap for integrating CE strategies in the cities within circular maker spaces. Ultimately, it aims to fill the gap in the literature by offering insights into future scenarios for sustainable development of the cities.

Keywords:

CircularEconomy; Circular Maker Spaces; Sustainable Development; Local Appropriation; Just Future

T_09 URBAN FUTURES / 886

The end of infrastructure-led planning?: the (re)turn to strategic spatial coordination in Victorian planning policy

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Since the early-2000s there has been a growing scholarly interest in infrastructure as a social scientific object. The social, political, economic and governmental shaping of cities has been identified as occurring through infrastructure. Building on the foundation provided by socio-technical studies of infrastructure geographers and planners have developed extensive insights into how infrastructure shapes and is shaped by urban processes. Within the field of planning an 'infrastructure turn' was identified (Dodson 2009) whereby spatial planning moved away from coordination of land-use and urban structure to using infrastructure to resolve urban development tensions and problems. This paper investigates whether that period of 'planning through infrastructure' is now ending. Using the case of Melbourne, Australia the paper charts how from the mid-2000s the Victorian state government increasingly resorted to infrastructure megaprojects as a means of urban spatial and state-political governance. This program was termed the 'Big Build'. Since the early-2020s however deficits of cost and time in infrastructure delivery have been accompanied by a shift towards more active land-use coordination to address urban problems. This includes a renewed focus on housing production, including social housing, and close attention to activity centre planning, both in terms of form and spatial structure. This shift suggests a (re)turn to spatial planning in Victoria. This paper investigates this latter shift by charting the trajectory of the infrastructure turn and its problems, followed by an appraisal of the new spatial planning phase. The paper draws on documentary, media and other resources to inform and support the argument. The discussion is situated at the intersection of infrastructure and spatial theory and offers an assessment of the theoretical implications of a potential reversion to spatial strategy focus in urban planning. Discussion of potential for a wider spatial planning (re)turn in other jurisdictions is offered.

Keywords:

infrastructure, spatial planning, strategy, Victoria, Australia,

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T_09 URBAN FUTURES / 1214

Navigating circularity in urban planning: experimental narratives and practices in Brussels

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For planning, and planners, a long-standing tension persists between technocratic governance and advocacy for the right to the city (Tasan-Kok et al., 2016). While planning power traditionally manifests through practical tools and legal instruments, its true influence often lies in the pre-implementation stages through narratives and visioning that shape urban futures. This dynamic becomes particularly intriguing when examining emerging narratives that struggle to achieve systemic change or a place within established planning systems, raising questions about planning's efficacy when dominant narratives face challenges or parallel narratives fail to accumulate regulatory power.

The circular economy (CE) presents a compelling case study of such narrative complexity. Having evolved beyond its origins as a business model concept, CE is increasingly recognized as a novel urban development paradigm aimed at closing material loops to strengthen local economies and social redistribution (Williams, 2021). However, its conceptualization reveals inherent contradictions: it simultaneously advocates for economic growth while promising social benefits, promotes inner-city re-industrialization and the protection of low-skilled labour, all while serving as a "cleaner and greener" alternative to existing industries (Bassens et al., 2020). These contradictions thrive on the very ambiguity surrounding CE's definition and application, making it both difficult to oppose and challenging to implement at the urban scale.

This paper examines the circular economy narrative within the Brussels Capital Region (BCR), where urgent needs exist to rethink material consumption, waste management, and urban industrial employment. By analysing historical path-dependency, this study will trace the evolution of circular city agendas in Brussels through two complementary methodological approaches. First, through critical discourse analysis of policy documents (1980-present) spanning supranational, national, and regional levels. This includes examination of EU circularity frameworks, national economic strategies, and regional development plans, alongside strategic and regulatory land use plans. Through this analysis, I trace the institutional adaptation of CE strategies and their evolution from deindustrialization narratives to current circular city approaches. Second, building on previous cases of spatial experimentation in CE implementation (Baumgartner et al., 2024), interviews with urban planners and practitioners involved in Brussels' circular transition will be conducted to examine the practical challenges and opportunities in implementing CE principles within existing planning frameworks.

This research aims to contribute to our understanding of narrative mobilization, actor roles, and the operational efficiency of CE visions across strategic, temporary, and permanent regulatory contexts. The study will advance understanding of planning's role in emerging discourses, particularly in contexts of material scarcity and social inclusion.

By highlighting the complex dynamics of transformative planning action, the paper offers critical reflections on the potential and limitations of circular economy strategies in urban settings.

Keywords:

circular cities; circular development; planning instruments; favisioning; Brussels

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T_09 URBAN FUTURES / 1138

Re-thinking the spatial design of future industrial zones: The case of OSTİM, Ankara

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Throughout history, as the concept and form of industry have evolved globally, the spatial configuration of industrial areas has undergone significant changes. Moreover, the approach of the industry toward humans, its modes of production, and the shaping of its spaces have transformed through mutual interactions. Industrial areas, which serve as the driving force behind urban services, the economy, and the built environment, are witnessing shifts in the role, form, and imprint of the human-space-production trilogy within the fabric of daily life.

Recent technological advancements, coupled with the widespread adoption of information and communication technologies and artificial intelligence, are significantly influencing production processes and the human-space dynamic in industrial areas. This evolution highlights a research gap: beyond the perspective of production, the position of humans, the ordinariness of everyday life, and the acknowledgment of previously overlooked aspects emerge as critical areas of exploration.

The study aims to examine the spatial practices of everyday life in industrial zones, often overlooked and deemed ordinary, using a human-centered approach. To this end, a field study was conducted in OSTİM, focusing on identifying the needs and expectations of different user groups within the context of everyday life in the industrial zone.

Located in the city center of Ankara, OSTİM stands out as a dynamic element of daily urban life due to its proximity to public transportation hubs, integration of education and industry, small business-based mixed production profile, and high land value. With

a half-century history of mixed production, diverse user groups, and its role as a successful example of entrepreneurship-supported education-industry and technopark integration, OSTIM illustrates the evolving traces of everyday life.

The study focuses on two main aspects. The first is identifying the variables that shape everyday life through an in-depth review of the literature on daily life. This is followed by active field testing of these variables, which includes in-depth interviews, surveys, and photographic studies conducted in selected zones within OSTIM. The relationship between the human-space-production trilogy is explored as an inseparable whole, with findings supported by ethnographic and visual-spatial analysis methods. This human-centered approach uncovers the traces of lived space often overlooked in everyday life, especially in idle areas, highlighting the spatial qualities of public life and production practices, both permanent and temporary. In the context of industrial urban space, the dialectic between humans and space, the quality of physical spaces shaped by user preferences and needs, and the added value these spaces contribute will inform the design of future industrial zones.

Keywords:

industrial zone, spatial design, everyday life, lived space, OSTIM

T_09 URBAN FUTURES / 1162

Innovating planning narratives of the periphery for a more inclusive urban future: The prison of Florence (Italy) as a teaser of transition through transformative actions

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Prisons are a space of contemporary periphery neglected and stigmatised in many parts of the world and, in particular, in southern Europe and Italy (Vessella, 2017). Prison architectures are 'introverted' structures (Milhaud, 2017; Moran et Al., 2017); they are often situated in the middle of nowhere and isolated from infrastructural networks and urban and social metabolisms (Infussi, 2020). In this way, they contribute to the production of disconnected, inaccessible peripheries that appear as a patchwork of modern city rejects located in in-between areas - the Zwischenstadt (Sieverts, 2003). Clouded by the rhetoric of glossy urban regeneration, urban policies deliberately ignore the problems generated by these awkward structures in space and the enormous social and infrastructural impact that the activities in and around prisons generate in the urban fabric.

This paper addresses this issue and presents an ongoing project/process of peripheral regeneration that underlines the urgent need to rethink the centre-periphery divide/narrative and the relationship between prison and the city (which also implies restoring citizenship rights to prisoners, families, the prison police, and the population that rotates around the prison). The main goal is then to convert the area where the prisons of Florence exist into a peripheral centrality that triggers a process of social, economic, spatial and human regeneration.

Above all, the project offers an opportunity to rethink the periphery as a place of social, economic, and political rebirth. While doing so, it shows how powerful a different narrative of old problems (generated by destructive narratives and planning practices) is, such as periphery, peripheral prison areas, abandoned and vacant lands, etc.

The project/process is described under three lenses: (1) social inclusion in contexts of suffering, (2) spatial justice, and (3) territorial well-being which include urban health, care, and ecological conversion.

The methodology is based on participatory design and the social inclusion of institutional and non-institutional actors. The paper also describes the institutional decision-making process for addressing and implementing the project.

Keywords:

Inclusion, Prison, Periphery, Participatory design, Narratives, Urban future

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T_09 URBAN FUTURES / 1485

Foresight as an instrument for Regional Development. The case of Thessaly (Greece)

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The successive crises of recent years have shaped an environment of uncertainty that tends to constitute a new permanent reality. At the same time, the radical changes that Artificial Intelligence will bring to the entire social process will create a highly competitive economic field. In this new situation, Greek Regions are called upon to transform the methods of developmental policy and to completely reconstruct their structures. Anticipation, participation and visioning are crucial elements that can contribute to the development of the Region's strategic intelligence in order to cope with the present and future challenges.

Adopting Foresight (OECD, 2021) can provide early warnings of challenges and opportunities, as well as the ability to study the present big picture. It enables Regions to identify and prioritize critical areas of intervention, allocate development resources effectively and make informed decisions based on comprehensive analysis. Cultivates collective intelligence, enhances strategic thinking and incorporates views and opinions of local actors and citizens. Creates the conditions for the alignment of regional development with knowledge (Foray, 2004) and mission economy (Mazzucato, 2021).

Moreover, it is worth noting that European Committee of the Regions, in a relevant opinion in October 2023, states that local and regional authorities (LRAs), as well as other local bodies and citizens -especially young people- should play a primary role in the practice of Foresight, thus actively contributing to the choices that will determine their future.

The aim of our research is how the Region of Thessaly can adopt Foresight as a method for Regional Development. Through semi-structured in-depth interviews with key informants, representatives of the quadruple helix, we attempt to determine which of the parameters of Regional Foresight are already covered by the Region of Thessaly and

which are not. The qualitative analysis of the responses is based on the methodology of Grounded Theory (Glaser and Strauss, 2017) and seeks to develop a coherent, effective and applicable framework for Regional Foresight. We will present some initial findings of our ongoing research.

Keywords:

Foresight; Regional Foresight; Regional Development

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T_09 URBAN FUTURES / 1831

Next Generation EU. The Case of Rome Two strategic actions within a list of projects

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The National Recovery and Resilience Plan (PNRR) is the most significant economic resource plan ever allocated to Italy. However, it was not developed based on a comprehensive assessment of the needs across various sectors. In Rome, this structural deficiency is especially noticeable. Notable gaps include the lack of funding for Roma camps and anti-violence centres, insufficient efforts to combat the housing crisis, and inadequate social investments that do not effectively address the long waiting lists for elderly citizens entitled to home care services.

This text not only presents the content of the PNRR but also explores the narrative used to communicate and guide its implementation. It provides a detailed account of the formation of the PNRR in Rome, the context of its implementation, and the related projects. Additionally, it offers an in-depth analysis of two strategic initiatives: the Integrated Urban Programs (PUI) and the Fori Project, explicitly focusing on the projects related to the Monumental Archaeological Center of Rome (CARMe), which play a vital role in the urban development of the city.

The three PUI interventions—Corviale, Tor Bella Monaca, and Santa Maria della Pietà—are described as innovation hubs that combine building renovations with the development of public spaces. Their goal is to incorporate intangible projects that address the real needs of local communities alongside the physical improvements. Implementing the PUI has actively engaged third-sector organizations, trade unions, and neighbourhood associations, promoting authentic participatory processes. This significant involvement of the third sector is a crucial outcome of these efforts, enhancing appreciation for the genuine community engagement that has been fostered.

An experimental active labour policy inspired by the French model of “Territories with Zero Unemployment” has been implemented as part of the PUI framework. Additionally, the establishment of 30 Civic Hubs enhances the PUI initiatives. These community centres are designed to offer a range of services and resources, creating a strategic approach to addressing the needs of Rome’s peripheral areas. This approach centres around three main focal points, supported by a network of 30 civic hubs distributed throughout the city.

The Monumental Archaeological Center of Rome (CArMe) project focuses on the Fori area, the Colosseum Park, the Circus Maximus, Celio Hill, and the Archaeological Walkway. This initiative builds upon a wide array of existing projects within Caput Mundi, which includes efforts led by Rome's municipal government and initiatives promoted by the Ministry of Culture. The goal is to create a comprehensive and integrated strategy for the preservation and enhancement of these historical sites.

A detailed analysis of projects and resources reveals an iterative implementation process designed to address the gaps left by the PNRR by integrating additional funding from European and national programs. This retrospective systemic approach emphasizes the urgent need for extra funding to compensate for the PNRR's shortcomings in addressing critical intervention areas that are vital and non-negotiable for a city like Rome.

The discussion concludes by addressing how the intangible aspects of the PUI—further enhanced by the involvement of the third sector—are integrated into the plan. However, the resources available for this dimension are minimal, especially compared to the significant investments in physical infrastructure, which total only €2 million.

Keywords:

urban narratives; urban regeneration; next generation EU;

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T_09 URBAN FUTURES / 1879

Towards a Smart Circular Urban Future? Analysis of Water Management Visions in Amsterdam and Busan

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As cities face growing environmental challenges such as climate change and resource depletion, integrating circular principles into urban systems has become crucial for fostering sustainability and optimizing resource management. This imperative is increasingly advanced through the smart city paradigm, wherein technological innovations are leveraged to enhance the efficiency of circular systems. Consequently, the concept of the ‘Smart Circular City’ emerges, converging technological advancements with circular economy principles. This study aims to examine how urban visions that integrate smart and circular city concepts are formulated and co-developed within the distinct socio-technical-spatial contexts of Amsterdam, Netherlands, and Busan, Republic of Korea. Particular emphasis is placed on urban water management in both cities, assessed through Vision Assessment and Critical Discourse Analysis. By systematically analyzing discourse from primary sources—including official public documents, government websites, forums, and social media—over the past decade, this research argues that the integration of Smart City and Circular City concepts has reinforced its legitimacy and consolidated its position as a dominant urban development rationale.

Despite the growing academic interest in Smart Cities and Circular Cities, the integrated concept of the Smart Circular City remains underexplored and lacks substantial empirical validation due to its relative novelty. Over the past decade, the Netherlands and the Republic of Korea have been at the forefront of technological innovation and the

proactive implementation of smart city visions. Amsterdam has emerged as a pioneering case, particularly in advancing socio-technical systems for inclusive smart city governance to enable the progressive deployment of such technological advances and to actively embed circular economy principles in urban planning. Busan, the second-largest city in Korea, has introduced the top-down vision of a 'Smart Water City,' emphasizing the adoption of technologies to align with the Fourth Industrial Revolution while enhancing citizens' quality of life through advanced water management systems. Notably, while Smart City and Circular City concepts have shown divergent trajectories in both countries—shaped by unique socio-political, economic contexts, national identities, and developmental priorities—their integration into a vision has strategically made them complementary. Each framework reinforces the narrative of the other, fortifying its role as a compelling urban development rationale. While both cities exhibit a shared commitment to circularity, significant differences manifest in their governance structures and implementation processes, reflecting their respective socio-technical-spatial configurations.

Vision Assessment in technology assessment (TA) offers a robust analytical tool to unravel how constructed futures—such as visions, scenarios, and strategies—shape transformative processes, including socio-technical arrangements and the evolving knowledge for their changes simultaneously. However, this work argues that visions as socio-epistemic practices can and should be studied in a more multifaceted manner, using a mix of empirical methods. To extend the socio-technical perspective into an analytical framework encompassing socio-technical-spatial dimensions, this research introduces a comprehensive lens for analyzing visions as socio-epistemic practices. By exploring the complex interrelations among technology, society, and space in the formation of Smart Circular Cities, this study contributes to a deeper understanding of urban transformation dynamics. The findings offer valuable perspectives, opening rooms for alternative approaches to shaping Smart Circular futures and fostering more sustainable urban environments.

Keywords:

Smart Cities; Circular Economy; Vision Assessment; Smart Circular Cities

T_09 URBAN FUTURES / 595

The Evolution of Dominant Stories in Rural Spatial Planning: A Memetic Perspective

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The increasing emphasis on participatory planning processes has highlighted the importance of communicative approaches to engage stakeholders (Hajer & Zonneveld, 2000). Within this context, planning theorists have underscored the value of storytelling, both as a tool *for* and an outcome *of* planning (see Van Hulst, 2012). This 'narrative turn' in spatial planning (Ameel et al., 2023) shifts the focus from planning as a technical task to an ongoing process of co-creating, negotiating, and sharing stories about places and their futures. From this perspective, spatial planning can be understood as a dynamic, open-ended storytelling process, seeking common ground to guide decisions about spatial development.

A dominant story emerges when diverse perspectives and interests converge in the search for a shared narrative that guides the spatial development of a place (Ameel et

al., 2023). The dominant story is not static or final; rather, it is a continuously evolving synthesis of ideas shaped by ongoing dialogue between spatial actors. It reflects a collective search for joint understanding into 'what is' and 'what ought to be' (Van Hulst, 2012). Over time, the dominant story shapes how the physical environment is understood, which spatial decisions are made, and how change (or conservation) is implemented (Ameel et al., 2023).

While much of the literature on storytelling in planning has focused on urban political processes (Van Hulst, 2012), this paper extends the discussion to rural contexts. Rural areas face numerous complex spatial and social challenges, with stakeholders often diverging in their views on the best path forward. In such settings, the collaborative search process and evolution of a dominant story can provide clarity and direction, helping to reconcile conflicting interests and shape collaborative decisions. Achieving this convergence, however, requires deliberate facilitation to encourage dialogue, align stakeholder values, and create shared frames of reference (Lindhout et al., 2024).

Despite the growing recognition of storytelling's role in planning, epistemological challenges persist regarding its definition and measurement. The perspective that storytelling is a core element of planning itself emphasizes that planning is fundamentally a cultural activity of collective meaning-making. Drawing from the influential works of Richard Dawkins (1976), Aaron Lynch (1996), Susan Blackmore (2000) and Malcolm Gladwell (2000), this paper adopts a memetic perspective to explore how the content of stories evolve and spread during a rural spatial planning process. When storytelling is viewed through a lens of memetics, a dominant story emerges as a synthesis of replicating cultural messages and ideas—or 'memes'—that actively shape the planning discourse.

The paper explores how a dominant story evolves throughout a planning process, applying the memetic lense. The research is guided by three research questions: (I) What memes can be identified during the planning process? (II) When do these memes emerge, adapt, align, and/or fade? And (III) what contextual conditions, factors, or events influence the evolution of the dominant story? A case study approach is employed, focusing primarily on document analysis of materials related to a visionary rural area development process: the Holwerd aan Zee (Holwerd by the Sea) project, located in the north of the Netherlands.

Although the analysis is ongoing, this paper argues that memes can serve as proxies for internal cognitive processes and as indicators of storytelling within spatial planning. By tracing memes throughout the planning process, this research aims to provide insights into how dominant stories evolve and shape rural spatial development.

Keywords:

memetics; rural spatial planning; dominant story; collaborative planning; joint understanding

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T_09 URBAN FUTURES / 596

Integrative accessibility planning under uncertainty: A learning framework based on a systematic literature review

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Accessibility planning has become increasingly interdependent. Early research indicated that accessibility is dependent on both the transport and land use systems. Subsequent literature demonstrated that the telecommunication system also significantly impacts accessibility. Furthermore, it is established that accessibility planning is subject to uncertainties, which are intensified by emerging interdependencies. For instance, greater uncertainty surrounding dimensions, such as goals, stakeholders, or information, and variables such as innovation, political directives, or user behavior, may arise and affect the planning process or alter plans. Consequently, accessibility necessitates integrative planning with special attention given to dealing with uncertainties.

Despite the development of numerous approaches for guiding integrative planning (e.g. planning support systems, policy mixes) and dealing with uncertainties (e.g. scenario planning, dynamic adaptive policy pathways), these have proven challenging to implement in practice. This is due to the intricacy of accessibility planning, with each system institutionally separated, and uncertainties being incomprehensible. To facilitate the implementation of these approaches, research identifies the pivotal role of learning, i.e., the sharing, transferring, and co-creation of knowledge among diverse stakeholders. Learning can serve as a platform to engage with the approaches and eventually support integrative accessibility planning under uncertainty.

In light of the above, to gain deeper insights into the process of learning, the literature conceptually highlights three knowledge types (i.e. systems, target, and transformation) that are iteratively co-created throughout the process. Further explanation of the practicality of these is inconclusive. Additionally, the importance of paying close attention to six key questions (i.e. who is learning, what are they learning, when to learn, how to learn, to what effect is the learning, and why to learn?) is emphasized, although not all of these are discussed simultaneously in the literature. Evidently, the existing literature is somewhat conceptual and fragmented. Above all, despite the extensive literature on learning, a gap remains in the existence of operationalized frameworks that structure and facilitate learning, especially in the context of this research. This research develops such a novel framework.

The research followed a systematic literature review of case studies (n = 30) of learning in the contexts of accessibility planning and dealing with uncertainty. The three knowledge types and the six questions preliminary structured the analysis. Then, through a qualitative systematic investigation of each of the six questions in light of the three knowledge types, the framework was developed.

The results highlighted the sequential presence of the three knowledge types in all analyzed cases, with transformation knowledge being the least prevalent. Systems knowledge highly employs the expertise of researchers, although others were involved, and the means to facilitate it include brainstorming and drawing diagrams. Target knowledge involves all stakeholders equally, and the means to facilitate it include imaging and storytelling. Finally, transformation knowledge involves the public sector extensively, and the means to facilitate it include presentations and discussions. To measure the effect of learning processes, at least three techniques are used in each case (e.g. ex-post outcomes, interviews, and observations). In this regard, however, no differentiation between the three knowledge types was found. The sixth question, which asked why to learn, did not yield any answers.

In conclusion, the proposed framework demonstrates how stakeholders can learn to (1) analyze their interdependent systems –systems knowledge, (2) envision their futures –target knowledge, and (3) draft pathways to deal with uncertainty –transformation knowledge. Although each of these steps may include the three knowledge types within, they still highlight a core knowledge type per step. Future research should seek deeper in-

sights into the reasons why stakeholders learn, and how to motivate them. It is suggested that this element has a significant impact on learning.

Keywords:

Accessibility planning; Integrative planning; Uncertainty; Learning; Knowledge co-creation

T_09 URBAN FUTURES / 694

Spatial - Temporal Evolution and Planning Strategies of Population and Construction Land in China's Shrinking County - level Cities

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Population and construction land are the two most critical elements in the urbanization process. Their coordinated development is vital to the level and quality of urbanization. Studying the changes in population and construction land during urbanization is conducive to promoting the rational use of resources and sustainable development. With the increasing domestic and global macroeconomic downward pressure, changes in population structure, and industrial transfer, the unilateral growth of cities is no longer the only model of urban development. Cities have entered the post-growth era, and the phenomenon of urban shrinkage is common in both Western and Chinese cities. However, the evolution characteristics of population and construction land in China's urban contraction phenomenon have particularities different from those in Western developed countries, and they also face different development issues.

On the one hand, unlike the urban contraction phenomenon in Western developed countries that occurs in the mature stage of urban development, China's urban contraction phenomenon takes place during the rapid development cycle of urbanization. In recent years, the slowdown in China's urbanization growth rate will further exacerbate the urban contraction phenomenon. The transfer and mobility of the population continuously affect the allocation efficiency of urban construction resources. On the other hand, compared with the "double contraction" of population and construction land in Western developed countries, China more widely exists the contradiction of population contraction and construction land growth. The paradox of population loss and spatial expansion coexistence is an urgent problem to be solved in China's urbanization process. How the population-construction land in contracting cities changes, the degree of their disharmony, and the influencing factors are the main research questions of this research.

Therefore, this research first clarifies the uniqueness of China's contracting cities compared to the West. Then, it takes the county-level cities with contraction phenomena in China as the research objects, selects three time sections of 2000, 2010, and 2020, and deeply analyzes the spatial characteristics of the evolution of population and construction land. It uses the decoupling model to analyze the degree of development coordination, summarizes the coordination types and development trends of the human-land relationship in contracting cities, and analyzes the mechanism of action and influencing factors using the driving force-pressure-response model.

The research findings show that China's contracting county-level cities exhibit uneven regional distribution and different degrees of contraction. According to the decoupling

model of human-land relationship and the characteristics of urban development, contracting cities can be classified into four types: resource depletion, environmental fragility, industrial transformation, and the suction effect around megacities. The city's own location and natural conditions, national institutional policies such as the household registration system and land policies, and local differentiated implementations such as economic development and facility support are the main factors causing the contradiction between population and construction land in contracting cities.

Based on identifying the spatial pattern of the evolution of population and construction land in China's contracting county-level cities, this study analyzes the degree of coordinated development and influencing factors of population and construction land. It proposes differentiated planning strategies for county-level regions with different types of contraction contradictions. This research has theoretical and practical significance for the efficient use of land resources in contracting cities during the post-growth stage, maintaining urban vitality, and promoting sustainable urban development. It also provides a certain reference for other developing countries in the process of urbanization worldwide.

Keywords:

population and construction land relationship;urban shrinkage;spatial-temporal evolution;coordinated development;Planning strategy

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Track 10 | THEORIES

T_10 THEORIES / 1615

Investigating communicative planning in the fine grain: Integrating discourse and practice theories for the analysis of participatory justice

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Germany is currently experiencing a wave of large-scale urban expansion projects (Hesse 2021), driven by a growing demand for housing and an ongoing shortage of developable land within city centres. These new suburban developments are being promoted as models of sustainability and participatory, inclusive planning. However, in terms of participatory justice (cf. Blue et al. 2019), it is not only important which ideas and notions of participation are produced in the respective discourses, but also who participates and is heard in planning processes. Document analyses and interviews (Howarth 2005) can only provide limited information about this.

For several years, therefore, attempts have been made to study planning ethnographically (Abram & Weszkalnys 2011). This approach aims to provide insights into marginalisation (Verloo 2023), tacit knowledge and the role of material objects (Rydin & Natarajan 2016). It corresponds with the 'practice turn' (Behagel et al. 2019), which has also been adopted in planning studies. However, few scholars have attempted to combine discourse analytical and praxeological approaches in empirical planning research (Leibenath 2025 in press).

The aim of this paper is, first, to clarify what practices are, how praxeological planning research can be conceptualised, and how it relates to more discourse-focused approaches (Schröder & Leibenath 2025). To this end, the 'praxeological square of cultural analysis' (Reckwitz 2016) is proposed as a heuristic. Secondly, a concrete research design and some exemplary results on participation processes related to large-scale urban expansion projects in Berlin are presented. And thirdly, the challenges of such an analytical approach and ways of dealing with them are identified. The study is part of an ongoing research project that is funded by the German Research Foundation (DFG) under the grant number 466529662.

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Keywords:

Practice theories, discourse analysis, participatory justice

T_10 THEORIES / 1723

Understanding Uncertainty in Planning

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Understanding Uncertainty in Planning;
Case study of demographic forecasts in urban plans in Iran

Uncertainty is an intrinsic notion in planning that is mostly recognized as the obstacle in the process of planning and achieving its goals. So planning devoted practice and theory to reduce this unpopular notion and take control of reality. But all the tools introduced to tackle with uncertainty have sides of subjective and normative characteristics and use of power in themselves that sometimes the sole reason of facing uncertainty is not enough to justify them and they seem to be insufficient in a way that they produce even more uncertainty. In this case planning would be in a position of redistributing uncertainty, but even this meaning has its own limitations (Marris, 1996). Practitioners may deny or be unfamiliar with the responsibility of its consequences. It will be helpful if planning had a comprehensive narrative of uncertainty that can actually demonstrate what is happening in the planning practice.

This research is interpretive research with a value-oriented approach (Buunk, van der Eidem, 2015), with focus on the definition of uncertainty and the tools (in terms of different theories, technologies, or philosophy) being used against it in planning practice. The chosen context is the case study of demographic forecasts in urban plans in Iran. The data were collected from deep interviews with practitioners and discourse analysis. The literature review delves deep into four introduced approaches to uncertainty in the planning theory and one approach in demographic science, and then goes on to compare them with the planner's crafts to tackle with uncertainties. These five categories are:

- Rational and mathematical approach (Myers, 2001)
- The technology/ agree-disagree matrix (Christensen, 1985)
- Strategic choice (Friend & Hickling, 2005)
- Planning as expectation management (Hartmaan, 2012)
- Hauntology of urban planning (Gunder, 2008)

Analytical philosophy was used in this research as a basic view to certainty and to analyze the meanings that practitioners have for uncertainty. Analyzing interviews and theories lead to a new definition of planning. In this new take on planning, uncertainty does not mean the absence of certainty, but an independent concept that can be present along with it. In this definition uncertainty is an inherent characteristic of planning that made it possible in the first place to plan, and within planning it has always generated the potential of creativity and meaning of power. These insights can be traced back in every step that population forecasts take in the planning process.

Thus, following the narratives that was collected from professionals we can suggest that when speaking of uncertainty in planning, we are not just referring to “uncertainty” itself, but the question is who had the advantage of being “certain”.

Keywords:

uncertainty; population forecasts; urban plan

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T_10 THEORIES / 651

Dare to speak up when something is wrong: Scope of action, roles and feelings in the reflective narratives of Norwegian planning practitioners

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Planning is a collective action, and planners work in increasingly more diverse interdisciplinary teams which involve both experts and non-experts. Learning is an essential component of such interdisciplinary collaborations. In this study, we focus on professional learning as an integral part of everyday planning practice and consider planners as storytellers of this practice (Watson, 2002). Drawing on the concept of “reflection-in-action” (Schön, 2017) and the methodological approach of the field of practical knowledge (Methi, 2023), this paper is built on the analysis of reflective narratives written and discussed by 15 Norwegian planners. Reflective narratives of professionals as a method to explore their practical knowledge have been rarely used in planning literature so far (see Bornemark, 2017 for an exception).

The planners, working both in Norwegian municipalities and private sector, were recruited through a professional network and university courses in continuing education in planning. The participants were asked to write down a situation from their work which had been challenging for them or which they could not easily forget. We used the submitted narratives as points of departure for three focus group discussions. The participants

had an opportunity to present their narratives, ask questions to the stories of others and discuss topics emerging from the narratives.

The empirical material of the paper includes both the texts of the reflective narratives and the transcripts of the focus group discussions. We analysed the material qualitatively in an inductive manner. Our findings demonstrate the diversity of the roles planners play, dilemmas they deal with and emotions they experience. Participants reflected upon the scope of their action defined by the institutional and organisational structures. These structures have direct impact on learning: how and where it occurs and who learns from whom.

This paper also discusses the advantages and challenges of reflective narratives as a method to study planning practices. While this method allowed us to get access to deep and rich experiences of planning practitioners, it posed some requirements for the participants who should be willing to spend their time to write down some challenging professional episodes. We found, however, that reflexive narrative holds a pedagogical value for the participants as well and would like to develop such a research method into a didactical tool for continuing education courses in planning.

Keywords:

planning practices; learning; reflective narratives; practical knowledge; planning system; Norway

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T_10 THEORIES / 781

Making Plans in a World of Uncertainty and Crisis

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Over the past few decades, the role of and need for plans, as written and agreed documents, has been questioned or denied by many planning practitioners and theorists (Neuman 1998; Moroni 2023). Nevertheless, plans continue to be produced by organisations and governments at all spatial levels and to be used in addressing a wide range of complex urban and social futures.

All planning and plans occur in ongoing uncertainty. Uncertainty arises from the environment and from governance and planning processes (Abbott 2005). Because of climate change, global and local environmental systems are changing and breaking down and becoming more unpredictable. Wars, famines and refugee numbers are increasing and threatening global and local order and governance. We live in a world of uncertainty and crisis. In this context, this paper asserts the ongoing agency, role of, and need for plans. But the nature of planning and plans needs to change.

Friedmann (1987) notes that planning focusses on how knowledge is linked to actions.

But what if planners assume they have knowledge that they do not have: what Christensen (1999) calls delusions of certainty. This paper reverses Friedmann's emphasis and looks at how a lack of knowledge or uncertainty can be recognized in plan making and plans, how this can be linked to actions, and how this will change the nature of plans and planning practice.

There are many conceptions of planning and plans, including as: choosing the best future actions; reaching agreement about future actions; ongoing mutual learning; exploring scenarios and choosing contingent actions; seeking to achieve goals or a vision; informing and coordinating the actions of others; managing uncertainty; and creating frameworks to adapt to complex, self-organising systems. But plans have limitations, as Wildavsky's well known 1973 critique of planning overreach notes. Plans need boundaries, timeframes and institutional arrangements and to be adaptive. This paper puts forward a new concept of plans that actively recognize, address and adapt to ongoing uncertainty.

Recognising uncertainty is iterative and is about identifying or creating an institutional context for complex problems that allows stakeholders to become aware of uncertainties in their various problem perceptions and to seek to address these. Making plans that are flexible and adaptable is not a new idea but there is increasing recognition of its importance and of new approaches, such as using codes and framework instruments. Uncertainty about the future is ongoing and creates a need for planning and plans. Predictability is limited but the future is not indeterminate. The future can't be predicted or controlled but plans can act continually to address and change the future towards goals and visions. Actions to recognise and address ongoing uncertainty need to become a critical and active component of plans. A plan is thus a dynamic tool to change the future.

Keywords:

Uncertainty; plans; planning theory; planning practice;

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T_10 THEORIES / 1175

Revisiting Pragmatism: how to make planning theory more relevant to professional practice

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In planning as a professional discipline, the term 'planning' in Planning Theory carries a dual meaning – planning as a field of study and planning as a professional activity. In

terms of planning as a field of study, the project of planning theory has made substantial progress, having developed an extremely diverse range of theories that interpret and evaluate planning as a phenomenon. However, when considering planning as a professional activity, planning theory has made unsatisfactory progress—evident in its marginal presence in planning practice and the persistent feeling among practitioners that planning theory is not relevant enough to their work (Klosterman, 2011).

This article examines four key propositions, primarily influenced by the pragmatist tradition, that claim to make planning theory more useful: 1) Contextualist approach: planning theory would be more useful if it provided a more nuanced theorization of planning context; 2) Behavioural approach: planning theory would be more useful if it offered a more realistic theorization of planning behaviour; 3) Phronetic approach: planning theory would be more useful if planning theorists/academics conducted research with enhanced practical wisdom (Flyvbjerg, 2009); 4) Praxis approach: planning theory would be more useful if it could translate abstract principles into concrete practical guidance.

While these approaches are indeed relevant, this article argues that they are far from sufficient for planning theory to gain more presence in professional practice. In response, the article revisits the literature on classic pragmatism. Through this re-examination, it argues that a key issue for current planning theory is its overly focused adoption of pragmatist ideas—primarily focusing on John Dewey's emphasis on situational judgment and his pragmatist ethics of democracy, while underappreciating two critical ideas: 1) the pragmatist methodology (theory of inquiry) and its capacity to bridge the theoretical and practical worlds; 2) Charles Sanders Peirce's emphasis on the fixation of belief through a community of inquiry.

The conclusion of this article suggests that the key mission to make planning theory more relevant to the professional world is to generate practical planning propositions that can be shared by the professional planning community. This should be achieved through the development of a pragmatist methodological theory that: 1) is case-driven; 2) is actor-centric; 3) produces research findings with generality that can be easily extrapolated to other contexts.

Keywords:

Pragmatism; Planning Theory; Methodology; John Dewey; Charles Peirce; Theory-Practice Gap

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T_10 THEORIES / 546

Attitudes, Actions and Artifacts: Re-Conceptualizing Spatial Planning as Cultural Practice

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This paper examines spatial planning as a cultural practice, conceptualizing it as an interplay between attitudes, actions, and artifacts. Spatial planning is not merely a technical, political, or communicative activity, but rather a complex cultural practice influenced by shared societal norms, values, and practices that evolve over time. This study adopts

a meaning-oriented and praxeological perspective of culture (Reckwitz 2002), emphasizing the dual dimensions of planning: its substantive character, encompassing collective norms, values, and beliefs, and its procedural aspects, involving planning practices, decision-making processes, and social interactions.

The paper explores a paradigmatic shift towards a “cultural turn” in planning theory, advocating for a relational understanding of planning cultures that integrates discourse and practice.

Recent empirical studies highlight the heterogeneity of planning cultures across national, regional, and local levels, emphasizing their dependence on socio-political contexts and the interrelation of structural and procedural elements. Utilizing models such as the Culturalized Planning Model (CPM; Knieling/Othengrafen 2009), the paper delineates the influence of societal and planning discourses on tangible planning artifacts, including planning policies and documents, as well as corresponding physical results of planning, such as spatial patterns of the built environment.

A literature review of recent empirical studies highlights the role of planning cultures in shaping different

- a) National planning practices (e. g. Li et al. 2020)
- b) Regional and local planning practices (e. g. Pukarthofer et al. 2021) as well as
- c) Relational understandings of national and local planning cultures and practices (e. g. Patiwaël et al. 2022)

Based on the literature review a relational framework is developed, that links substantive and procedural dimensions through shared systems of meaning, incorporating the

- a) societal discourse that shapes norms and values
- b) the planning discourse that informs specific practices, and the
- c) artifacts resulting from these interactions.

This integrated model captures the variations of planning, emphasizing their emergence, evolution, and contextual variations.

The study acknowledges the challenges posed by the complexity and diversity of planning cultures. Despite methodological difficulties in operationalizing and empirically analyzing cultural dimensions, the concept holds significant promise for enriching planning research. By bridging theoretical and practical knowledge, the relational approach enhances our understanding of why planning practices vary across contexts and how they are shaped by cultural differences.

Future research is encouraged to adopt interdisciplinary methods and refined analytical models, emphasizing the interconnections between discourse, practice, and artifacts. This methodological advancement holds the potential to shed light on the cultural underpinnings of planning practices, offering researchers deeper insights into their evolution and the possibility of adaptation in diverse spatial and temporal contexts. In conclusion, the study positions planning as an inherently cultural endeavor, underscoring its pivotal role in the social construction of space.

Keywords:

culture; systems of meaning; practice theory; discourse

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T_10 THEORIES / 332

Acceleration or participation: Return to rational planning?

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The urgency of the climate crisis and ambitious political aims towards climate neutrality are increasing the pressure to accelerate projects for the post-fossil transformation. In Germany, this particularly affects energy transition projects, such as wind power and photovoltaic systems, whose acceleration is justified by an “overwhelming public interest” in planning. In contrast, environmental protection associations criticize the acceleration because it entails a restriction of environmental assessments and participation rights. While the lesson learned from the conflict over the Stuttgart 21 project a decade ago was to expand public participation, today in the context of the acceleration debate participation is often seen as a delay of transformative projects. The paper therefore addresses conflicts between acceleration and participation in the planning of projects in the context of post-fossil transformation (Skjølsvold/Coenen 2021).

In an empirical part, the results of a case study on the location of the Gigafactory Tesla in Berlin-Brandenburg are presented (Kühn 2023). This is the largest industrial project in Germany for the production of electric cars with a post-fossil drive. Tesla has declared the acceleration of the energy and mobility transition as the company's mission to protect the global climate. Under pressure from Tesla, the factory was completed in a record time of about two years. This high pace was only made possible by numerous preliminary approvals before the final approval. The Tesla case shows that the acceleration of the approval and planning processes was accompanied by an exclusion of proofing location alternatives, democratic deficits in informal public participation and unresolved conflicts regarding regional water resources.

In the final part, the article draws some lessons from the case for planning theory. It turns out that the approach of communicative planning (Healey 1992) with the claim of finding consensus through participation within a deliberative democracy has its limits due to the time pressure and conflicts in post-fossil transformation. In the context of the current acceleration debate, there are increasing signs for a return to rational planning. In this mode of planning, technocratic experts determine the public interest, participation is only used at the lowest level of information and decisions are made by representative democracy (Meyerson/Banfield 1955). This mode corresponds to the emergence of new forms of technocratic management (Raco/Savini 2019). With such a rational planning approach, transformative projects are legitimized by climate crises and easier to push through against resistance from civil society. Finally, the article discusses the alternative approach of agonistic planning (Bäcklund/Mäntysalo 2010), which aims to tame conflicts through a higher level of participation within a radical democracy.

Keywords:

acceleration; participation; conflicts; planning theories; democracy

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T_10 THEORIES / 1628

Integrated urban planning: solving conflicts between densification and climate adaptation

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Cities face the wicked problem of dealing with the conflicting policy objectives of urban densification and climate adaptation. This problem is also known as the sustainable city paradox. Addressing and finding a solution to this problem is crucial regarding the present-day challenges of the pressing housing shortage and the perceivable consequences of climate change on the urban landscape, endangering the livability of our cities. In recent spatial planning practices, integration has become a buzzword and is seen as a promising answer to address these conflicting policy objectives. However, integration remains ambiguous in scientific planning literature and empirical evidence shows that different perceptions and interpretations exist, resulting in different practices of integration.

This research aims to detangle the concept of integrated planning, explore different practices and assess the impact and potential of these specific manifestations to solve the conflicting policy objectives of densification and climate adaptation in terms of effectiveness, efficiency and legitimacy. Through a comparative case study focusing on two urban development projects in the Netherlands (Little C in Rotterdam and Bajes Kwartier in Amsterdam), it explores the two dimensions of substantive and processual policy integration, translated into sixteen indicators that allow for systematic analysis.

The results of this research showed that the practice of integrated planning does indeed manifest differently across cases and impacts the quality of spatial planning. Moreover, the observed municipal efforts to integrate policies in spatial developments are often undermined by various obstacles, especially within the processual dimension of policy integration. Therefore, this research argues that the main challenge to improve practices of policy integration and thereby spatial planning quality, lies within the processual dimension rather than the substantive dimension.

Keywords:

densification; climate change adaptation; policy integration

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T_10 THEORIES / 1123

Is there no placemaking, only placemaking practices?

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An interesting recent debate made an impression on placemaking practitioners and planners alike. De Graaf's confession that "I have no idea what placemaking is" (2023), still being relevant; one has only to browse the comments section, was followed by another confession by way of response, that of Marrades's "I don't care what placemaking exactly is" (2023). This round seemingly ended with the acceptance that if the placemaking movement is not going to define placemaking, then it remains a term open to interpretations that may distort its point (e.g. Smolar, 2023).

In the field of spatial planning, acknowledging the significant shift in spatial planning thought and its several implications for the future, it is important to reach an understanding of placemaking. Placemaking is a global concept that is expressed via a plethora of approaches and practices with a transformative potential to help address urban crises and improve urban life (Courage et al., 2020; Istorlou and Pozoukidou, 2024; Keidar et al., 2023). However, it still defies definition, being a complex approach with layered meaning, an iridescent term, a 'fuzzy' concept.

Our aim here is to create an understanding of placemaking in the context of spatial planning, building a framework through an extensive literature review and the use of text analysis software. The focus areas are the key elements of the concept, its spelling variations and different attributes as well as its accelerators and facilitators. Finally, based on these findings, we will try to answer critical questions such as "can we talk about placemaking theories?", "is placemaking just a practice?" and "should we aim to form a universal definition of the term?".

Interestingly, through the literature on placemaking, it is evident that there are correlations and links with spatial planning theories; they seem to follow similar evolutionary paths and ideas to organize knowledge, diachronically forming intricate relationships and echoing similar debates.

Keywords:

placemaking, theories, practice, placemaking theories, spatial planning

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T_10 THEORIES / 480

Linear Research: Shifting Vantage Points in Urban Theory through a Planetary Transect

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In an era of intersecting environmental, social, and economic crises, the theory and practice of planning must evolve to address the complexities of contemporary urbanization processes. This paper introduces Linear Research as both a theoretical and methodological framework for conceptualizing and comparatively analyzing urbanization processes at a planetary scale. Building on Brenner's (2014) concept of planetary urbanization, Linear Research challenges traditional spatial and thematic approaches by employing a cross-sectional, geometry-driven lens to reveal emergent urban dynamics and relationships.

Central to this framework is the application of a circular transect methodology: a 12,742-kilometer line traversing 22 countries, offering a unique perspective on how urbanization transforms landscapes and redefines relationships between society and nature. The theoretical framework presented in this paper is substantiated by empirical research conducted along the transect in Italy, Austria, Liechtenstein (Hilti and Igual Capdevila, 2021), Switzerland (Wetter, 2024), Germany, and the United States (Dahlman Begley et al., 2023).

Through this lens, the paper critically rethinks how planning theory can respond to planetary crises by bridging local and global dynamics, challenging traditional epistemologies, and proposing an innovative framework for understanding urbanization as a planetary phenomenon.

Keywords:

planetary urbanization, linear research, transect, urban theory

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T_10 THEORIES / 376**We Want to Regenerate This Neighbourhood! A Theoretical Framework to Navigate the Spatial Dimension of Property and Its Impact****Author:** Stefano Cozzolino¹¹ *ILS - Research Institute for Regional and Urban Development***Corresponding Author:** stefano.cozzolino@ils-research.de

The spatial dimension, distribution, and organization of property significantly influence urban dynamics and the political capacity to implement regenerative programs as well as their types. Beyond abstract planning concepts and strategic intentions, property owners of buildings and land ultimately hold direct power and control over the built environment. From this perspective, ownership patterns—whether more centralised or fragmented—play a crucial role in understanding two key aspects: (1) the openness of a given area to spontaneous and often unpredictable, hard-to-control processes of change, and (2) the ease, or difficulty, with which local municipalities can coordinate urban renewal efforts.

While the relationship between the spatial dimension of property and urban renewal policies has been explored in the literature for a long time, a robust theoretical framework is needed better to navigate this complex issue in more abstract terms. Such a framework could assist both scholars and practitioners in engaging with broader reflections, among others, on urban regeneration.

To illustrate this topic, this talk draws on two contrasting research projects focused on “disadvantaged neighbourhoods” in North Rhine-Westphalia, Germany. One project examines the regeneration of large housing estates owned by big housing companies, while the other investigates dense, highly mixed urban areas owned by numerous small private individuals. By exploring these concrete examples, the study highlights how differing ownership patterns influence responsibilities and approaches to design and regeneration. This work aims to provide valuable insights into the interplay between property ownership patterns and urban regeneration at the neighbourhood scale.

Keywords:

Property; Ownership; Regeneration; Neighbourhood; Adaptability.

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Urban perforation along railway lines: A form of shrinking cities and a proposal for sustainable urban restructuring

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1. Introduction

In a society with a declining population, significant changes are required in the large metropolitan areas that have been consistently expanding since the end of the Second World War. Optimizing the scale of conurbations is an urgent issue to ensure that our living environment is safe, secure, and sustainable (Dunham-Jones & Williamson, 2011). In this context, there is much hope for the concept of compact cities, which aims to improve cities' sustainability while coexisting with nature (Aoki, 2023).

However, the discussion of compact cities mainly converges on mono- or poly-centric models (Aoki & Itami, 2024). On the other hand, like Japanese conurbations have structures in which cities are linked along railway lines. Therefore, people's living areas effortlessly straddle multiple municipalities. Another issue is the deterioration of the urban environment due to the random occurrence of underutilized land - the urban perforation- which decrease the attractiveness areas.

Therefore, we should also consider linear compactness theories when discussing compact cities in a society with a declining population. It may also be necessary to make effective use of low-density/underutilized land that has arisen due to urban perforation, which is one form of shrinking cities beyond the boundaries of local governments.

2. Methodology

This study takes the Kyoto-Osaka-Kobe conurbation, Japan's second-largest metropolitan area, which is experiencing population decline. Several private railway companies operate in this conurbation, and historically, they have developed suburbs (Kadono 2000).

Firstly, we clarify the spatial distribution of urban perforation in terms of population and building density using the National Census and Building construction data. We estimate the structure of urban perforation using spatial autocorrelation analysis. In addition, we observe the progress of urban perforation using data from multiple years.

Secondly, observation beyond the different urban and railway line structures will deepen the recognition of urban perforation. We classified the area on the objective conurbation into the "single line" and the "multiple parallel lines." In addition, based on their location, each railway line is divided into three types: "inter-central," "suburban," and "branch."

3. Findings and Discussion

As a result, it became clear that low-density urbanization does not necessarily occur from the outer edges of the conurbation and each administrative district. Residential and land use along the railway lines is relatively stable, and it is thought that it is not easy to accurately estimate the linear urban structure of the target area using the monocentric or polycentric compact city concept. In particular, although there are low-density areas in the surrounding areas of railway lines that run in parallel, the overall situation is stable. On the other hand, low-density areas are prominent along branch lines, and there is a tendency for residential and land use to be dispersed.

In the context of demographic and land use characteristics, residents' attributes differ from one adjacent station to the next. In addition, there are differences in the rate of accumulation and the types of accumulation in each section along the line. As indicated in the TOD theory, in addition to the accumulation in significant cities and connection by public transport, we should consider a new compact urban structure based on a relationship of mutual support that also encompasses the stations in close proximity to each other.

4. Conclusion

The findings of this research have examined the relationship between urban perforation and railway networks in shrinking cities and presented a new way of looking at compact cities. However, as this is a case study of Japan, the possibility of applying it to other conurbations should be considered. In addition, indicators and methods for measuring compactness must be sought in the near future.

Keywords:

Compact Cities; Urban Perforation; Shrinking Cities; Linear-based compactness

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The Role and Value of Theory in Urban Design: Can They Truly Shape the City?

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Over recent decades, urban design has been consistently critiqued for its growing disparity between its theoretical aspirations and practical outcomes, with the process often failing to deliver the high-quality results it promises (Elrahman and Asaad, 2021). This persistent disconnect raises a pivotal question: can theories transcend their prescriptive frameworks to act as transformative forces in reshaping cities? In this context, this paper critically examines the role and value of planning theory in urban design, interrogating its potential to navigate the tension between the city of possibility and the city of ideality.

The global crises of urban sprawl, climate change, and the neoliberal dismantling of regulatory frameworks have necessitated an urgent re-evaluation of urban design practices (Logan et al., 2022). In response, emerging models such as superblocks, low-traffic neighbourhood plans, doughnut models, and their hybrids have gained traction, with the x-minute city (15-minute city, and its variations) garnering particular momentum (Moreno et al., 2021; Nieuwenhuijsen, 2021). However, these models frequently rely on fragmented interpretations of established planning paradigms. Notably, while x-minute city frameworks are often presented as innovative, their theoretical underpinnings often trace back to established concepts, particularly the Neighbourhood Unit (NU) theory introduced by Clarence Perry in 1923. This study positions the NU as a foundational yet contested lens for understanding the enduring role of theory in shaping urban design research and practice.

This research begins with the theoretical debates within the urban design discipline. Drawing on the first tier, it positions urban design as a temporal process of spatial-social

change. This perspective underscores urban design's dual nature: as a structured yet evolving framework that mediates between top-down strategies and everyday activities, reshaping urban spaces in response to the temporal rhythms of cities. The second tier explores urban design as a form of activism, reimagining it as a platform for social transformation and resistance against neoliberal urban policies. Building on these debates, the study situates its analysis within the wider paradigms of post-modernism, where urban design is increasingly characterised by pluralistic, contextual, and relational approaches that interrogate the fragmentation and socio-spatial divides perpetuated by modernist planning.

Beyond engaging with two-tier theoretical debates, the research uses Alberti and Radicchi's (2023) comprehensive analysis as a departure point, the study situates NU within interdisciplinary frameworks, including Central Place Theory and Proxemics Theory, to critically assess how the concept has adapted to the socio-temporal complexities of urban life. It explores how NU has shifted from a spatially deterministic model to a dynamic socio-spatial construct. However, this shift is not without challenges; proximity-based models often obscure socio-spatial inequalities, perpetuating exclusionary practices under the guise of inclusivity. The study critiques the commodification of terms like "proximity", which, despite their rhetorical appeal, risk-reducing urban design to mechanical frameworks detached from lived realities.

By reinterpreting NU theory's evolution from static, isolated forms to relational, interconnected frameworks, this study argues that the enduring value of planning theory lies in its dual function: as an intellectual scaffold that organises the complexity of urban design processes and as a provocative force that disrupts and reimagines entrenched paradigms. The ambiguity inherent in longstanding theories, far from being a limitation, serves as a fertile ground for critical debate and transformative imagination. It identifies a shift from static, prescriptive urban models to dynamic and adaptive frameworks that contribute to the ongoing redefinition of planning paradigms, aligning with the transformative aspirations of urban design in an age of unprecedented global challenges.

Keywords:

urban design; planning theory; neighbourhood unit; proximity-based models

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Rethinking Promethean planning: An epistemological enquiry of technoscientific-centrism in planning theories

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Although scientific and technological innovation has been playing a crucial role in the evolution of urban planning as a professional practice and academic discipline, an overall critical assessment of the domination of technoscientific-centrism in the field of planning theories seems missing. Whilst the literature acknowledges that both scientific inquiry and technological innovation are crucially entangled with urbanization (Palmini, Cugurullo, 2023) –and have been so for centuries –, less attention has been paid to the correlation amongst technology (here understood as the force driving mankind interpretation of reality: Severino, 2021), scientific specialization (Pitari, 2019), and the consolidation of urban planning as a technical domain.

The hypothesis underlying this study is that the mere disciplinary, ‘academic’ culture of planning is per se not sufficient in unpacking the ontological and epistemological implications underpinning technoscientific-centrism. To engage in such an enquiry, then, an incursion into the language of myth is much more promising in that it broadens the understanding of technology’s domination. In particular, the myth of Prometheus (Chiodo, 2020) provides a lens to reframe planning’s history as the attempt to pursue a true ‘science of prediction’ that, via specific techniques of computation, strives to establish control over future spatial arrangements of a given territory (Friedmann, 1987). Accordingly, the Promethean notion of urban planning draws upon Euclidian geometry (Davoudi, 2012) to foster a peculiar conception of space that ensures a virtual omniscience and, as the myth of Prometheus and Atlas suggest, is preparatory to the domination of human beings over the Earth. Such dominion could have only been achieved through a ‘technological’ view of space in relation to its possible manipulability (Sini, 1981). Forwarded into modernity thanks to Newtonian physics, such ‘absolute’ conception of space informed the rise of modern science and its utilization as a tool, in the hands of Western civilization, to establish full dominion over creation. An authentic design for conquest underlying the rise of Positivist spatiality and that, accordingly, played a crucial role in shaping the role of planners as ‘scientists’ and technical experts.

By unpacking the prominent features of Promethean planning, a post-Promethean perspective of planning theories and practices is here investigated. Hence, the study dives into the exploration of three key facets that, despite constituting Promethean planning pillars, if properly ‘overturned’ can set the foundation for a novel view of science and technology in contemporary planning practices. The first one of the above-mentioned key aspects is hyper-specialization: so long as compartmentalized knowledge production underlays planning academia, plan-making and urban policies will continue to be imbued with Promethean fashion (that is, with technoscientific-centrism). The second one, the unshakeable faith in technology, is matched with the return of scientism in planning decision-making –nowadays championed by technologists and ICT specialists. A step forward beyond technoscientific-centrism requires planners to recognize that technology is not neutral at all, rather it embodies an ideology (Habermas, 1972) –and, as such, it always pursues a paradigm of domination. Lastly, depoliticization is inherent to Promethean planning, which boosts a kind of technocratic, elite-driven approach to decision-making. To re-politicize planning practices, and overcome technoscientific-centrism, planners should rethink their role as ‘non-neutral’ experts and struggle for alternative theory-building scenarios.

Drawing upon literature review and a cross-disciplinary approach to the research topic, the paper unpacks the notion of technoscientific-centrism and calls for critically reconsidering planners’ overconfidence in technology.

Keywords:

Promethean planning; positivist spatiality; scientism; technoscientific-centrism; technology

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A transformation of planning? Grasping planning-cultural change through socio-material practices

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The need for social-ecological transformation is beyond question. The relevance of spatial planning in shaping this transformation is equally undisputed (cf. Hofmeister & Warner, 2021 among others). However, we still know little about whether planning for transformations also involves a substantial transformation of planning itself (cf. Schreiber et al., 2023, for one of the few exceptions). In my contribution, I outline an approach to scrutinize indications of a transformation of planning.

I start from the argument of sustainability sciences and transformation research that profound transformation ultimately implies cultural change (cf. Meadows, 1997; Abson et al., 2016). This points to planning cultures as a fruitful perspective for grasping fundamental transformations of planning. As planning-cultural change can be deemed “too abstract for closure” (Alexander, 2015: 91), I turn to practices as a more immediate, tangible expression of planning cultures (cf. Alexander, 2015; Levin-Keitel & Sondermann, 2017; Othengrafen & Levin-Keitel, 2019 for a similar approach). To grasp a change of planning practices conceptually, I draw on the concept of Transformative Social Innovation [TSI] (Pel et al., 2020).

I show that there are significant congruencies between notions of planning culture and TSI. Social innovation generally describes a reconfiguration in the socio-material relation between actors, ideas, objects, and activities (Pel et al., 2020) that are aimed at better addressing a societal issue than previous configurations did (Moulaert, 2013). If we similarly define planning as a social process of actors combining ideas, objects and resources to intervene in space (cf. Knieling & Othengrafen, 2016), we can interpret the transformation of planning as a process of social innovation and, through this lens, view it as changes in four types of socio-material practices: (1) a change of planning activities, (2) new forms of organizing (in) planning, (3) new ways of imagining societal and spatial futures, and (4) a change in learning and knowing.

I apply this lens tentatively to explore a potential transformation of planning in the context of the on-going “green transition”. I outline discernable changes of practice that indicate planning-cultural transformation, and end with an outlook on what can be considered further necessary planning-cultural transformations for realizing social-ecological

transformation.

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Keywords:

social-ecological transformation; transformative social innovation; planning culture; social practice

T_10 THEORIES / 1029

What planning needs from theorizing on place in times of global challenges

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The proposed contribution argues for stronger integration of the theoretical notion of place in planning against multiple current challenges. It revisits established and novel conceptual readings of place and outlines its implications for planning, arguing for the theoretically informed use of the place notion as instrumental in planning better cities for people.

Cities have undergone dramatic transformations since ‘the world’s first’ city of Çatalhöyük in Konya, Türkiye, marked the transition from rural to a new urban type of settlement. Planning strives to respond to constant urban transformations. As any other institutionalized domain, planning faces challenges of institutional inertia, path dependency, and rigidity of established paradigms that hinder the responsive potential of planning. At the same time, planning itself acts as a major agent of urban transformation, bringing novel challenges of growth and development that uproot established ways of living. In the age of planetary crisis and accelerating global changes, the responsibility of planning is not only in providing adequate response by leading transformations but in ensuring continuity and upholding a human-centric approach in tackling the above.

Place-based measures are an often-evoked response to the above conditions. Place-based policies to promote local solutions, sense of place to foster stewardship of locales, place-making initiatives to improve public spaces are among planners' remedies against many facets of crises, from climate change, economic depression, to social fragmentation and migration. Yet, place is far from being an established conceptual term in planning practice. More often than not, it is used in an ad hoc or common sense manner stripped from underlying conceptual substantiation (Ellery, Ellery, and Borkowsky 2021; Strydom, Puren, and Drewes 2018).

The term 'place', however, is a theoretically loaded notion, albeit no overarching theory of place exists (Cresswell 2015). Place is theorized across a heterogeneous landscape of disciplines, spanning from geography, environmental psychology to cognitive science, among others. Early systematic theorizing on place is attributed to humanistic geography as a critique of the overtly abstract notion of space that dominated the spatial disciplines in the 1960s (Tuan 1979; Relph 1976). Since then, the broad notion of place as space imbued with meaning has entered common use.

Further, place becomes conceptualized in many other ways within phenomenological, non-representational, feminist, critical and socio-constructivist veins, relational and post-human philosophies, psychological, cognitive and behavioural models, among others. The pervading conceptual feature of the above remains that place changes the mode of our engagement with space. Relational readings of place suggest that cities cannot be adequately governed without considering dynamic flows of people, resources and information that all play out on a local scale. Feminist perspectives on place demonstrate how spatial experience differs along gender lines, while phenomenological approach brings forward an embodied and perceived spatialities which are closer to human experience of cities than abstract plans. Many novel approaches to place arise building on advances in GIS, data science, and other areas (Wagner, Zipf, and Westerholt 2020; Rossetti, Lobel, Rocco, and Hurtubia 2019), expanding the relevance of its application for various urban issues even further (e.g. Slivinskaya 2022).

With its practical focus on shaping physical spaces in cities, planning delivers applied results and contributes valuable empirical insights into the physical setting of cities. Notion of place, on the other hand, allows formalizing diverse social, subjective and intersubjective relations that frame our spatial experience in cities in no less important ways than its physical setting. The contribution concludes that the value of the term place for planning lies in bridging the physical realities of urban spaces with the human dimension of spatial experience.

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T_10 THEORIES / 1700

The Insufficient Role of Urban Form and Its Uses in Baseline Assessments of Urban Plans in France

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In the context of global crises, 21st-century cities face numerous challenges. The impacts of climate change and economic tensions at all scales necessitate a more resource-conscious urban development while putting human needs at its centre. At the same time, the complexity of urban systems challenges planning, pointing to inevitable connections among geographic scales and action domains of policies. How can urban development be approached in a way that preserves systemic coherence, operates globally, and considers all scales?

Since the foundational work of Patrick Geddes, urban planning practice has integrated baseline assessments as the knowledge base for urban planning documents. In France, since 1999, the primary urban planning document has been the *Plan Local d'Urbanisme* (PLU), which defines the overarching development vision for urban areas. This document must be based on a baseline assessment (*diagnostic territorial*), often informed by the work of urban planning agencies. Unlike the *Plan d'Occupation des Sols* (POS) it replaced, which had a highly functionalist approach, the PLU addresses a broader set of local challenges: curbing natural and agricultural land consumption, ensuring quality housing, fostering economic growth, combating climate change, enhancing public space usage, and more. The inclusion of Orientation d'Aménagement et de Programmation (OAP) sections within PLUs reflects the ambition of local governments to adopt more qualitative planning strategies, engaging with issues of urban design.

However, while the POS could often neglect considerations of urban form, the baseline assessments underpinning PLUs should include an evaluation of existing urban forms, assessing their strengths, weaknesses, and potential to achieve the plan's objectives. Since the 1960s, an extensive body of academic literature has analyzed the critical role of urban form in city functioning (Conzen 1960, Lynch 1960, Jacobs 1961, Alexander 1965, Rossi 1966, Newman 1972, Hillier & Hanson 1984, Hillier 1996, Salingaros 2005). This literature has evolved to advocate for human-centered urban projects (Alexander 1979, Lynch 1981, Panerai et al. 1997, Gehl 2011, Castex 2014). Recent meta-analyses (Carmona 2019) leverage empirical studies to highlight the essential contribution of urban form to the usage values of space and hence to urban practices. Despite this, urban form remains a frequently neglected or absent aspect of urban baseline assessments in France.

Although municipalities produce studies and charters on urban uses, these are often non-regulatory, inconsistently developed, and not always integrated into PLU frameworks. Furthermore, these studies often focus on public space practices or walkability (Demailly et al. 2021), overlooking the tight relationship between uses and the built environment.

This communication proposes a critical analysis of baseline studies for urban plans in France, supported by a shared analytical framework that acknowledges the polysemic and polymorphic nature of urban form (Allain 2004, Levy 2005). The framework encompasses a broad range of urban themes and elements, including buildings, public spaces, city gateways, and ordinary streets. Urban form is also analyzed in terms of how it is mobilized to address territorial challenges.

The case of Nice offers a paradoxical example. While the mid-1990s Urban Masterplan emphasized urban form in the assessment of the different parts of the city, the current PLU diagnosis limits its consideration to landscape, tourism, and heritage issues. Urban form re-emerges implicitly in discussions of land use and built-up density, while public spaces are only briefly addressed through mobility perspectives. This case is contrasted with other French metropolitan areas, such as Bordeaux, Lille, and Lyon, whose urban planning agencies have increasingly incorporated public space and urban form into planning since the 2010s (A'urba 2015, ADULM 2016, UrbaLyon 2023).

This presentation highlights the need for a more systematic integration of urban form into baseline assessments, fostering better-informed and more coherent urban planning practices.

Keywords:

Urban-form-in-planning ; Baseline-Assessments ; Human-practice-in-public-space ; Urban-morphology-theories ; France

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T_10 THEORIES / 1498**Pathways to Urban Resilience: Tactical Urbanism vs. Transdisciplinary Approaches****Author:** Esen Gökçe Özdamar¹¹ *Tekirdağ Namık Kemal University, Department of Architecture***Corresponding Author:** egozdamar@nku.edu.tr

In contemporary settings characterized by rapid urbanization, environmental degradation, and limited access to natural resources and food, numerous countries face many challenges. A salient issue in Turkey is the sustainability of urban governance, which impedes resilience. The nascent implementation of participatory processes and democratic active participation and the discordance between top-down policies and grassroots movements evidence this. In this context, it is imperative to adopt a holistic approach to the design and planning of urban environments, taking into account their impact on health and the environment. The question that arises is how to genetically and internally shape cities according to different approaches in terms of emerging needs and methodologies. This article proposes the implementation of transdisciplinary approaches (TR) as a means to enhance urban resilience, thereby offering a novel and effective strategy for addressing the limitations of conventional, single-dimensional approaches to resilience and human-centric methodologies.

Despite the long-standing predominance of top-down strategies in Turkish urban planning, recent shifts towards participatory practices and project-based policies aim to engage citizens in decision-making processes. However, the efficacy of these participatory models in enhancing resilience remains a subject of concern. While tactical urbanism is gaining traction in Turkey, the necessity for transdisciplinary approaches underscores the limitations of such models. To mitigate the impact and scope of top-down planning studies carried out by local governments in Turkey, it is essential to utilize the insights obtained from this knowledge base and instead transform these activities into a dynamic and participatory process. The transfer of this concept to the design-thinking process related to architecture and the city can be associated with the active role-sharing of different experts with a transdisciplinary approach that allows for the development of diverse perspectives from the perspective of individuals and, on occasion, the ability to empathize with others. This approach ensures that the potential of fragile phenomena is revealed and addressed with a creative perspective.

Therefore, this article discusses the role of participatory processes in creating resilient cities and how to strengthen transdisciplinary and bottom-up approaches to urban participation in the Turkish urban context (Özdamar and Önay, 2024) through a theoretical lens. It is vital to recognize the potential of TR collaboration and TDR to facilitate the management of uncertainties, adaptation to various forms of resilience, and development amidst emerging challenges, thereby enhancing urban resilience. In addressing the emerging issues of urban sustainability and resilience, it is essential that architects, planners, and researchers receive training and experience in knowledge transfer and that design research is recognized as a legitimate method of knowledge generation (Després et al., 2011). In this way, planners can play an important role in this transformation by creating awareness among local governments and citizens, thereby influencing the outcome of these activities. Individuals and governments in Turkey who are aware of this fact can work strategically to eliminate and dismantle this centralization over time. When implementing both bottom-up and TR approaches simultaneously, it is critical to strike a balance between competing priorities and interests among stakeholders. Empowering local communities, encouraging collaboration, and engaging diverse perspectives can address complex issues and produce more inclusive and effective solutions. Achieving this requires fostering stakeholder collaboration, engaging local knowledge and expertise, and promoting sustainable lifestyles through community education initiatives. This comprehensive approach facilitates the formulation of strategies that address complex urban challenges and promote long-term urban resilience and sustainability.

Keywords:

Urban governance; climate change; resilience; transdisciplinary approaches, Turkey

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Potentials and limitations of urban digital twins. On the nature of cities

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Digital twins are enjoying widespread and growing success in both theoretical and practical applications. A recent development that is gaining increasing traction is the application of digital twins to cities. The aim of this paper is to discuss the potential and limitations of city-scale digital twins. The scientific literature on digital twins is dominated by “technical” approaches. Critical investigation of digital twins is still at the beginning. This paper aims to contribute to this stream of inquiry. It examines digital twins and their applications in urban contexts, starting by distinguishing between simple, complicated and complex systems, and reaching the conclusion that, while using digital twins is generally appropriate (and often helpful) in the first two of these systems, some structural limitations on their use in the case of complex systems exist.

Keywords:

Digital twins; Simulation; Complexity

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«Communities of disagreement» in planning

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******The paper is more of a reflection than a conclusive answer to the question “Should planning and politics converge around the concept of “communities of disagreement”? The field of planning, both in theory and practice, often has consensus building as a guiding inspiration for its normative theoretical and practical development. Politics, on the other hand, is an activity characterized by disagreement and competition over ideology, values, what is legitimate knowledge and what are good planning solutions. In politics, the aim can often be to cultivate disagreement and dividing lines, more than to find consensus.

Since we in the planning field today are concerned with giving politics and politicians the leading position that normative planning theories and planning legislation say they should have, the planning field must to a greater extent recognize and make room for the need for politics/politicians to highlight disagreement, also in planning processes. Only then will planning become a tool for both political governance and an activity to strengthen democracy.

In this paper, we will present some main positions in the field of planning theory regarding handling professional and political disagreements. We will then introduce the concept «communities of disagreement», as it is defined and discussed in the book *Uenighetsfellesskap: blikk på demokratisk samhandling*. (Iversen 2014) (Communities of disagreement: perspectives on democratic interaction –own translation).

Iversen argues that the term can refer to a group of people who gather around a common theme, problem or goal, but have different or conflicting views on how this theme, problem or goal should be handled (Iversen 2014). People share problems and discussion arenas, but we share values to a much lesser extent. Our democratic communities are often communities of disagreement, meaning that agreement is far from a necessary condition for functioning communities. Iversen is concerned with various ways to normalize and make disagreement harmless, including disagreements over values, so that in the future we individually and collectively become better at living with all this disagreement.

This is far from new reflections within the field of planning, including within communicative and collaborative planning. However, we as planners notice that Iversen claims that his concept marks a difference to Habermas. Iversen disagrees with Habermas in his view of rationality. Habermas argues for freedom of power in a public conversation because the best arguments will then prevail. This is not necessarily the starting point in a community of disagreement”(Iversen 2014:138). Within communities of disagreement, the arguments for open, free, real discussions are more that more voices provide a greater diversity of ideas, more innovative thinking.

Iversen therefore draws on Chantal Mouffe’s theory of political leadership and agonistic politics (Mouffe 2000 and 2005, in Iversen 2014:145 -156). This is an approach to planning that has recently emerged as a critique of, and an alternative to, communicative planning theory. The agonistic perspective recognizes that conflict is an inevitable part of democracy. Thus, the idea that the goal of democracy is to achieve consensus between members of society is rejected. On the contrary, disagreement is something like an inherent necessity in a vibrant, engaging democracy. In an agonistic model, both for politics and planning, the conflicting parties recognize each other as legitimate, even if they disagree. They accept common premises and procedures for political struggle and for planning discussions, which enables a more constructive form of conflict and increases the likelihood of innovative thinking.

We will conclude the paper with some reflections on how the use of the term –with its theoretical anchoring –can contribute to recognizing political disagreement as a necessary, and often creative, element in planning

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Keywords:

Communities of disagreement; politics in planning; agonistic planning

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The Radical Means-Ends Model in Planning by Prefigurative Mobilizations

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Abstract: Prefigurative mobilizations, such as alternative micro-communities and urban social movements, organize their practice here and now in ways that are in line with and reveal the activists' aspirations for a future society founded on principles and values quite different from those forming present capitalist society. The purpose of my presentation is to show that this means-ends coherence has wide-reaching consequences for the ethics, policymaking and organization of the prefigurative entities.

Progressive radical initiatives often combine means-ends coherence with direct democracy, anti-hierarchy, value rationality, direct action, and real-world experimentation leading to revisions of their present practice and their goals for the future –that is, a degree of openendedness in visions of the good society. These elements characterize the activist planning theory for prefigurative mobilizations, and this theory is briefly introduced in the presentation. I focus on the claim for means-ends consistency, which strongly affects central features of the mobilizations' planning.

A few pitfalls of prefigurative mobilizations deserve mentioning. For example, there is a risk that activists put too much emphasis on developing a beloved micro-community here and now. The more time and resources spent on building a separate identity and developing community members' sense of belonging, the less energy is allocated to the political task of reforming the surrounding society. Besides, strict policies to further the prefigurative initiative's distinctive character and identity can make it difficult to find loyal allies. Collaboration with other communities and movements is, however, necessary to influence changes of society at large.

The pros and cons of strict means-ends consistency are briefly discussed. On the positive side it gives no room for hypocrisy. One cannot, for example, claim to have democratic goals and at the same time use authoritarian means. So, aligning the actions of today with the ends of tomorrow has an ethical reason. On the negative side, insisting on realizing a future society corresponding perfectly with the practice preferred today would lead to blueprint planning. This is something that planners have long aimed to avoid, admitting that conditions often change over time, making it necessary to revise goals. Strategies to ensure some openendedness in prefigurative planning will be presented.

The theoretical points are accompanied by vignettes drawn mainly from small, alternative urban communities planning their own area and simultaneously working for social

change. These illustrations come from the intentional communities Christiania in Copenhagen (Denmark), Svartlamon in Trondheim (Norway), and Kommune Niederkaufungen near Basel (Germany).

There is a need for an activist planning theory, as thousands of intentional communities, prefigurative social movements and progressive towns (transition towns, slow cities, human rights cities) around the globe are planning for transformation to a greener, more just and convivial society.

Keywords:

Activist planning; Intentional community; Means-ends model; Planning theory; Prefiguration

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The Retheorization of Collaborative Planning Using Hong Kong's Urban Renewal: Mean-End Presupposition, Rationality, and Procedure-Substantive Dichotomy

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Collaborative planning based on Habermasian communicative theories is a holistic planning theory different from action-oriented planning theories (Levin-Keitel & Behrend, 2023). In empirical research, collaborative planning is often explained well in the literature review, but its application in examining local planning cases tends to be superficial. Much of the focus is on whether the case includes stakeholders' negotiation and/or reaching consensus, overlooking that collaborative planning is an advocacy of a communicative *due process*. Perhaps planning researchers understand that applying the whole depiction by collaborative planning theorists to local contexts is problematic. Collaborative planning, like other holistic planning theories, is still what John Rawls called an "ideal theory," so between holistic theory (ideal theory) and theory of action (action design and implementation), a "bridge" is needed. The authors contend that this "bridge" should be akin to a social process, which starts by recognizing the diverged ideal from a reality setting and restructuring the holistic theory. This paper will make headway toward this bridging by retheorizing collaborative planning through an empirical study of Hong Kong's urban renewal. The retheorization will follow three subjects: mean-end presupposition, rationality, and procedure-substantive dichotomy.

Original collaborative planning influenced by Habermas takes the positions of mean-focused, communicative rationality, and proceduralism in the prior subjects, whilst the empirical context of Hong Kong's urban renewal allows the authors to scrutinize these

original positions. Methodologically, we choose digital ethnography and focus group discussion to investigate the stakeholder communication for negotiating compensation for property acquisition in urban renewal projects. Observations were conducted in an online chatroom of a self-help group representing the affected residential and commercial property owners of a redevelopment project in Kowloon City to comprehend the why and wherefores and the strategies the group took to communicate with the Urban Renewal Authority (URA). The observations also provided access to the physical meetings between the group and the URA and other actions the group initiated; we interviewed stakeholders, who were involved to various degrees. Other than the digital ethnography in a redevelopment project under property acquisition, the authors also organized focus group discussions with residential property owners and relevant personnel from projects that had not experienced the URA's property acquisition. Using three types of data (ethnographic field notes, in-depth interview transcripts, and focus group discussion notes) from the empirical study, we attempt to modify collaborative planning's positions in the aforementioned subjects based on our realization of the gap between the communicative ideal and reality.

The retheorization will take three steps. First, the *end* of collaborative planning will be reconstructed in terms of private interests rather than consensual public interest, adding the considerations of individual parties' interests and their marginal private interests into the *mean* (discourse) of collaborative planning. This will address the transformation from an "objective truth" to a truth covering various subjectivities in the hermeneutics of a dialogical consensus. Second, the rationality of collaborative planning will amalgamate instrumentality, strategy, and communication to ensure that the collaborative *end* will be oriented to both success and reaching an understanding (Habermas, 1982). Last, introducing the collaborative *end*, private interest, and substantivism to the limit of a function will enable an infinite approach of proceduralism in collaborative planning to substantivism. Collaborative planning can be very close to a substantive theory if significant enough private interests are involved.

We believe the retheorization will contribute to the discussion of planning theory, especially in transiting Habermas' ideal communicative theories to nonideal theories under the collaborative communication paradigm. Leads from mean-end presupposition, rationality, and procedure-substantive dichotomy backed by rich empirical evidence will put rigor to setting up a "bridge" between holistic and action-oriented planning theories.

Keywords:

Collaborative Planning; Jurgen Habermas; Urban Renewal; Property Acquisition

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Planning Theory through the lens of its own publication corpus

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Planning theory literature has changed significantly since the emergence of planning theory as a subdiscipline. In recent decades, the literature has moved away from big conceptual turns and 'grand theories.' But what has it moved towards? This paper originates from the author team's interest in the question: what has planning theory research focused on in recent years? What are key streams of debate and how has the theoretical landscape evolved?

The project is to conduct a literature review of key planning theory publications. More precisely, we aim to identify the questions and themes dominant in planning theory publications in the last decade and a half. By analysing all papers published since 2010 in two key journals of planning theory (*Planning Theory* and *Planning Theory and Practice*), we allow for a quantitative and qualitative review of themes, theoretical foundations, shifts in discourses as well as the use and development of theories. We first try to understand what questions scholars have asked that actively engage planning theory scholarship and, second, to understand current trends in the use and development of planning theories. Complemented by a quantitative analysis, this qualitative analysis also identifies texts which have been influential in shaping the debate. Altogether, the research considers more than 1000 articles, commentaries, reviews and opinion pieces, with an in-depth analysis of 56 articles. Through this analysis, we hope to summarise the contemporary debate and provide a sense of what planning theories deem important for planning practice and research.

This article is being developed in the context of an International Working Group established by the Academy of Territorial Development in the Leibniz Association, entitled: "Beyond the process -Finding common ground for a discussion on planning's substantial foundation."

Keywords:

Planning Theory; Planning Theory and Practice; Planning Journals

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Temporality and strategic spatial planning –Towards an analysis of the Emscher restoration process beyond path dependence

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To critically reflect and theorize on politics, strategy, power, and conflict in spatial planning, more attention towards time and temporality is needed (Hutter, Wiechmann et al. 2024). Various research streams have taken up issues of temporality, for instance, research on path dependence (Sorensen 2023) based on „Historical Institutionalism (HI)“ (Mahoney et al. 2016). Our contribution aims to expand this kind of planning research and, therefore, moves beyond path dependence, especially with regard to strategic spatial planning.

Path dependence can be understood –very generally –as the determination of the present and future by the historical past (in the sense of “history matters”). HI proposes a specific understanding of path dependence and –in contrast to this –of gradual change (see Mahoney et al. 2016 on temporality in causal analysis, Mahoney 2021 for a summary): Path dependence refers to a relatively short “critical juncture” in the context of antecedent conditions and, in comparison to the juncture, a longer duration of stabilizing the path that has been chosen during the critical juncture (Sorensen 2023, p. 934). Gradual change, in contrast, encompasses a series of limited (or incremental) changes without referring to junctures and reactive sequences (or increasing returns). Gradual change may have transformative effects (“Transformative gradual change”, Mahoney 2021, p. 260).

We use the distinction between path dependence and gradual change to analyse regional strategy development for the Emscher restoration process. The Emscher is a small river in the Ruhr area in Germany. In a large-scale environmental and infrastructure project, between 1991 and 2021 it was converted from an open sewer into a near-natural watercourse that improved the environment and urban quality of life.

Intermediate empirical results of a chronological event analysis illustrate theoretical arguments. Event analysis includes an extensive document analysis and in-depth interviews with policy makers and planning practitioners. A model of regional strategy formation (Wiechmann 2008) guides data analysis. We discuss the extent to which path dependence explains sub-processes of strategy development for the Emscher restoration process, but the regional strategy process as a whole may better correspond to gradual change.

Theoretical argumentation and empirical illustration lead to the suggestion that critical approaches to the current state of planning theories need to address the complexity of time and temporality beyond the straightforward clock-time view of temporal variation (linear, objective time) and also beyond path dependence. This includes the possibility that paths may be created (Garud et al. 2010), which holds especially for truly processual work on strategic spatial planning. Case studies designed for this purpose enable a systematic investigation of change and thus a deeper understanding of planning itself.

Keywords:

Gradual change, Process, Regional strategy formation, Time.

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The new urban product in the multiplicity of transnational urbanism; Fragile planning approaches under sustainable narratives

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In the last decades, a spatial dimension of the transformation of the new production model has been observed as a function of technological development. The latter, as early as the 80s, created a new network of global city-poles (mainly in the Global North) allowing the instant transfer of economic and social capital flows (mainly in the Global South). Thus, the geographical dispersion of international transactions brought about, on the one hand, new high-speed connections of global cities with the rest of the world and on the other hand the redefinition of the global network of existing and upcoming cities. At the same time, in the last decades, there has been a frenzied construction boom of new cities from scratch, the narrative of which is called upon to face a multitude of risks such as climate crisis, demographic accumulation, economic development, and so on.

Today's global geography is based on two general development axes: the new global economy, through which economic and social flows of capital place the tertiary sector as an immediate investment priority, and the spatial effect that the aforementioned phenomenon brings. Thus, the new transnational urbanism includes not only existing stakeholders (states of the Global North, international firms, and institutions) and new players (states of the Global South, new investors) adding new poles to the network of flows but also new approaches related to urban planning practices. In this way, the rise of more than 150 new cities is a phenomenon that connects, on the one hand, the developed economies with the developing ones (North to South) and on the other hand - now - the developing economies themselves with each other (South to South). In addition, global cities play an integral role mainly on a supranational scale, as the network they create relies on their homogeneity rather than national and/or regional commonalities. Inductively, as the new cities foreshadow - on a large scale - a connection with the global market and international players, a connection is made with the aforementioned network and not based on their geographical location.

The new urban product, apart from its potential contribution to the global network, is of great ontological interest. In other words, apart from the large-scale and hetero-identifiable interpretation of new cities, the latter constitute an important socio-economic field of research. Thus, despite the various narratives about the unitary sustainability of cities (e.g. ultimate sustainable goals) as well as unified management (operational logic), the question of inclusion in new cities can be an "intermediate outcome" both for discourses regarding urban futures and for the narratives as such. As socio-economic inequalities are increasingly magnified and driven by increasing urbanization, new nodes in the global geographic palimpsest are set to be at the center of research and policy debate, both on a large (global) and small (local) scale. In this way, the question of inclusion in economic and social terms affects space both in terms of the movement of capital to and from the new cities and in terms of the dynamic process of produced urban morphology. More specifically, the intensive - in time and space - production of new cities orthonormalizes the multiplicity of the city's systems (resolve the complexity!) creating a new urban morphology where inclusion is put in jeopardy.

Keywords:

New-cities; Transnational urbanism; Fragility; Global-South; Inequalities

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Urban Science and Emerging Planning Science in the Context of Complexity Thinking

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In the age of planetary crisis, factors influencing urban development have become increasingly intricate. A deep understanding of complexity is crucial for accurately assessing these factors. The influence of complexity theory on urban and planning studies has long been recognized. Complexity theory, which took shape in the 1940s, has provided a foundation for complex theories of cities (CTC) and urban science. Planning science was followed by and was explored under the influence of both complexity theory and urban science. Against this backdrop, we attempt to reflect on the establishment process of urban science and explore the possibilities of establishing planning science by firstly reviewing two important factors in the development of urban science. One is the formation and development of urban complexity cognition, and the other is the evolution of tools for analyzing urban complexity. Next, we explore how complexity thinking has been integrated into the development of planning research.

The development of complexity theory has constantly provided fresh theoretical foundations for urban science. Early scholars grounded urban science on examining static urban complexity. Over time, self-organization theories such as dissipative theory, synergetic theory, and catastrophe theory have led to the emergence of the concept of self-organizing cities. Later, the concept of complex adaptive systems (CAS) in complexity science was used to understand and analyze cities and their internal elements, promoting research progress in CTC. Regarding the application of complexity analysis tools, while early urban studies predominantly relied on static models, such as the semi-grid urban structure, advancements in complexity theory have shifted the focus toward dynamic models and collaborative strategies that utilize diverse analytical tools, including analytical models using cellular automata or multi-agent systems. These dynamic models contribute significantly to the establishment of new urban science by providing various modeling tools and offering innovative frameworks for urban analysis. They also present a new perspective on the urban issues of the 21st century.

Planning research started borrowing concepts from complexity science later than urban studies did. As early as the 1960s, planning studies absorbed relevant theories from systems science, leading to the development of system planning theory. By the late 1990s, planning research began to learn from complexity theory and to apply the urban complexity analysis tools developed by urban research scholars. Complexity science has significantly influenced collaborative rational planning at that time, with adaptability, a hallmark of CAS, emerging as a central theme in collaborative planning frameworks. Complexity theory reveals that human-dominated cities are evolving open system. Consequently, planning cognition has started to transition from a static approach to a more

dynamic one.

Since planning research has already embraced complexity, concepts such as adaptation, nonlinearity, and evolution will become key in future studies. Corresponding complexity analysis tools tailored to specific and micro-level planning issues are likely to emerge. This will help establish a planning system based on complexity, thereby forming a complete system of planning science.

Keywords:

Complexity Theory; Urban Complexity; Urban Science; Planning Science

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Decoding the Neo-liberal Innovation Districts 22@Barcelona: a Territorial Laboratory Where Vulnerability and Possibility Coexist In the Long Term

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Barcelona's innovation district 22@Barcelona, shaped by the discourses of 'public-private partnership', 'public participation', and 'planning flexibility', has been promoted as an ideal template for neo-liberal practices in global cities around the world. Over the past 25 years, numerous literature critically examined 22@Barcelona (Piró, E. E., 2016; López, J. A. M., 2018; Martín-Gómez, A., & València López, A., 2022), providing constructive insights into its role as a pivotal component of global neo-liberal strategies. However, most of them have either only demonstrated the negative impacts of 22@Barcelona or examined 22@Barcelona in a certain cross-section of time. This study attempts to provide a more temporally coherent and dimensionally comprehensive perspective, by 1) characterizing the dynamics of the development of 22@Barcelona

over a long period of time and grasping the key points in which the socio-political, economic, and infrastructural vulnerabilities within the territory of the innovation district, and 2) examining various types of social experiments that have taken place in the territory of this innovation district and illustrates the possibilities of the territory. By showing this great tension between vulnerability and possibility, this study intends to provide a reference for the territorial governance of innovation districts in the global context. This study is a qualitative research, specifically, a literature study and economic statistics were conducted. The study elaborates on qualitative data retrieved from the official websites of the European Union and the Area Barcelona Metropolitan (AMB), allowing authors to materialize 22@Barcelona's vulnerabilities by reprocessing secondary data on the economy, housing, employment, etc. of the within a broader temporal scheme. At the same time, through a detailed analysis of Barcelona's policy documents, electoral dynamics, and research literature over the years, the author comprehensively examines the spatial and institutional experiments within the innovation districts, with the intention of revealing the richness of the possibilities represented by the innovation districts as locally contextualized territorial laboratories. An emerging international framework of populist studies is employed, to elucidate the depoliticization-repoliticization process (Tarazona Vento, A. , 2024) of 22@Barcelona in the context of neo-liberalism, and to reveal the great promise of spatial innovation and the possibility of institutional innovation. This study ultimately concludes that 1) the reality of 22@Barcelona is far less successful than it is advertised to be, with a very fragile socio-economic and infrastructural infrastructure, as evidenced by the overexpansion of rental space, the spatial and temporal imbalance of construction activities, and the prominent gentrification. The year 2008 marked the turning point in the innovation district's development, with the financial crisis serving as the trigger for the consequence; 2) in a deeply entrenched neo-liberal era, "place" has become increasingly important, because it is only through small-scale everyday practices such as community gatherings and local mobilizations that bottom-up mobilization can take place. –can generate new bottom-up institutional opportunities that offer rich possibilities for shaking up global neo-liberalism, as left-wing populism in Barcelona has done to shake up the neo-liberal discourse of 22@Barcelona. This study therefore draws attention to possible spatial and institutional practices within the innovation zones, and calls on a wide range of planning practitioners to utilize policy instruments as much as possible to provide good conditions for the development of these practices.

Keywords:

22@Barcelona □ Innovation District □ Neoliberalism Urbanism □ Vulnerability □ Possibility

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Seeing the small things: politics, aesthetics and everyday urban prefiguration

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‘We only see what we look at’(Berger, 1972 p8)

In his classic work, *Ways of Seeing*, John Berger (1972), drawing on the work of Walter Benjamin, questions how modern reproductions of art and images have changed their power and our relationships with meaning. He argues for the primacy of sight over language in the knowing of the world, but because the meanings of what we see are so regulated and conforming, it is hard for them to disrupt the established linguistic order. Changes to the reproduction of art works, and the decentring of view introduced by photography can begin to do this as it places things in different contexts, or alters the focus. Berger discusses how this can redefine and change our understanding of the past, but what about the future?

Using this question as a departure point, this explorative conceptual paper addresses the political possibilities of what we describe as prefigurative sensibilities in the urban environment. Bringing together thinking on prefigurative politics with Ranciere’s (2004) politics of aesthetics, and through engagement with a series of real-life examples, we argue that the idea of prefigurative sensibilities finds a politics to fleeting, gestural, and embodied interventions in the urban environment. A prefigurative sensibility, we argue, is a moment, encounter, or meeting place, where the aesthetic, sensible order of the urban is exposed as a constructed order. In this regard, the paper speculatively explores how, when, and at what scale aesthetic intervention may be considered as ‘political’, in Ranciere’s terms.

By so doing it explores the significance of everyday aesthetic interventions in the dominant urban order; asking whether such interventions can provide a gestural spark for alternative futures. Through engaging with literature about prefiguration, and with Ranciere’s conceptualisation of ‘politics’, we examine the possibilities of minor, gestural, aesthetic practices offering ways of seeing differently as well as ‘performing’ the world they wish to see within the bounds of the existing society. These creative experiments in the urban fabric juxtapose the regulation of spaces and suggest alternative orders and visions of the city.

Keywords:

aesthetics; art; prefiguration; politics

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Habermasian lifeworld re-considered: A conceptual tool to move beyond the dividing discourses

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The post-foundational line of thought and the post-political critique that has come out of it provides the field of planning theory with a critical energy that it has long been in need of. In the framework of this critique, first the Habermasian communicative rationality is denounced for denigrating and rejecting of any manifestation of disagreement in the society in the name of democracy. The inherent consensus logic is harshly criticized for neutralizing conflict and antagonisms, which are seen as constitutive of social relations

and as sources of innovation, a necessary dimension of democracy. Instead, agonistic pluralism is suggested by Mouffe (1999, 2005), through which antagonisms are transformed into agonism, and conflicts are regarded as productive and innovative, having a transformative and emancipatory potential. As a result of the influence of these debates on planning theory; the so-called communicative turn of the 1980s was superseded by an agonistic turn, while the classical process-outcome dichotomy turned into one between consensus and conflict. This time the scope of the discussions oriented more towards radical-agonistic democracy, than consensus orientation. This abstraction unfolded in reality as a challenge both in theory and in practice; how can we democratize and politicize urban planning? The new call from many planning theorists has been to embrace conflict rather than pursue consensus in planning processes (Tewdwrjones and Allmendinger, 1998; Hillier, 2003; Gunder and Hillier, 2004; Allmendinger and Haughton, 2012). The article is based on theoretical argumentation building on existing theory on communicative action, its critique, namely the consensus critique and on the repercussions of these discussions for planning theory. It argues that the ongoing conflict orientation in planning theory can be effective in enhancing and vitalizing the democratic potential of planning, only if it can better guide the planning action by eliminating its procedural and institutional ambiguities as well as its loose links with the reality of urban planning and policy making. This is necessary because contemporary planning requires, at the final resort, collective decision making and action that further necessitate rules, regulations, and division of responsibilities. Planning should embrace conflicts, explore disagreements, and for this purpose, be able to work with grassroots movements and activist groups. However, it has to be kept in mind that this endeavor is not freed from the need for communication and speech acts. In transforming antagonisms into agonism, in becoming adversaries but not enemies, people will need to communicate and interact. Furthermore, conflict orientation requires a sensitivity to avoid never ending conflict that might lead to chaotic situations exacerbating the multifaceted crises of today's urban societies. In this respect, the article calls for a re-reading and re-evaluation of Habermasian communicative action theory and offers a framework for it. This framework goes beyond the incorporation of Habermasian ideals such as the force of better argument, ideal speech situation and the consensus-bringing force of argumentative speech, as most of the communicative planning theory as well as its critiques focus on. It rather offers a re-utilization of the Habermasian concept of *lifeworld*, both as a context-forming background of processes of reaching understanding and as an arena of conflicts triggered by its colonization by the system. Put differently, the article re-introduces and explores *lifeworld* as a conceptual tool to transcend the consensus-conflict dichotomy and to guide planning practice to create interfaces that bring together deliberative and agonistic practices, the radical action and consensus-seeking and showing that they are not mutually exclusive.

Keywords:

consensus; conflict; Habermas; communicative action; lifeworld

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▪ Bridging Spatial Energy Planning and Social Sciences Energy Research: Towards an interdisciplinary approach to planning energy transitions

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In the context of the pressing environmental and climate challenges, the topic of energy increasingly finds its way into spatial planning through emerging concepts such as Spatial Energy Planning or Integrated Energy Planning (e.g. De Pascali & Bagaini 2018; Stoecklechner & Abart-Herisz 2022; Stoecklechner et al. 2016). These approaches include specific tools for analysing energy data, formulating strategic frameworks and developing methods that address spatial patterns of energy demand, the location and distribution of resources or sector coupling. Developed primarily within the domain of technical spatial planning, these approaches usually emphasise quantitative aspects of energy transitions, for instance through the integration of energy accounting and spatial modelling. Despite the significant advancements in fostering the integration of energy in spatial planning and the development of crucial tools for this purpose, these approaches, however, often overlook the societal context of energy systems and the political processes of transitioning them. Yet these societal considerations are imperative for comprehending the full potential and barriers of energy transitions and thus for shaping pathways that are specific to a local spatial context.

In contrast, the interdisciplinary research field of Social Science Energy Research has focused specifically on the embedding of energy in society, contributing significantly to understanding multi-level governance aspects, (political) power dynamics, questions of inequality and redistribution, processes of social innovation, as well as energy security and geopolitical concerns in energy transitions (e.g. Bridge et al. 2018; Foulds & Robison 2018; Sovacool 2014). Conversely, however, this body of work has rarely engaged with the field of spatial planning, leaving a critical gap in addressing how these societal and political insights could inform planning processes and outcomes.

This contribution explores this disciplinary divide between Spatial Energy Planning and Social Science Energy Research by examining their conceptual foundations and identifying potential points of integration. By bringing these approaches into discussion, this contribution aims to better embed spatial energy planning in societal contexts, drawing on a more holistic understanding of societal drivers, barriers, and adverse effects and to develop an interdisciplinary approach to planning energy transitions. Furthermore, this contribution also underscores the vital role of spatial planning in realising energy transitions that are effective, equitable, and socially inclusive, as part of a broader sociotechnical transformation.

Keywords:

Spatial Energy Planning; Social Science; Transformative Planning; Interdisciplinarity; Conceptual Review

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Planning and democracy 'otherwise': Learning from Southern onto-epistemologies

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Public trust in democratic governance structures (including planning structures) is at historic lows (OECD, 2022), while attacks on democratic institutions, coupled with increasing support for ethnonationalist political parties, warrant palpable concerns for a looming anti-democratic/anti-planning turn, globally (Freedom House, 2021). But attacks on democracy and public-sector planning stem not only from right-wing nationalists. They also stem from a global political economy that is deliberately crafted to obviate scrutiny from democratic institutions. Said differently, since at least the late 1980s, neoliberal globalisation has eroded democratic planning practices, because power is transferred from citizens to transnational corporations that are not subject to direct democratic oversight (Purcell, 2009). To worsen matters, such transferences are supported by nation states that subscribe to a market democracy (disguised as liberal democracy).

Planning democracy 'otherwise'—which is grounded in decoloniality (Winkler, 2018) and its accompanying epistemologies of the South (Santos, 2016; 2020)—provide urban and regional planners with an opportunity to learn from the different democratic planning practices arising in the global South that are deliberately delinked from capitalism and globalisation. One such example is evidenced in South Africa's communal landholdings where residents deploy multiple principles of legitimacy to engender emplaced planning practices. But given the entwined relationship between planning and the state, and the state's support of market rationalities, decoloniality urges us to question if alternative praxes are possible beyond local settings. Findings presented in this article suggest that place-dependency diminishes transferability. Nevertheless, herein lies an 'otherwise' praxis' power to counter coloniality, while keeping alive Derrida's (2005) 'always to come' narrative that challenges the liberal tradition of democracy as the only, and most lucrative, outcome. This power allows planners to learn from the South; but not for the purpose of replicating its rich diversity, but rather for the purpose of being inspired by altogether different futures. And it offers a role for emplaced democratic planning theories and practices that are cognisant of pluriversality, relationality, popular knowledges, local experiences, and situated worldviews, whilst supporting and nurturing a 'politics of difference' (Mignolo and Walsh, 2018) and 'becomings in place' (Gibson-Graham, 2003), in tandem with 'idioms of autonomy and community' (Escobar, 2019).

Keywords:

liberal democracy; globalisation; coloniality; decoloniality; epistemologies of the South

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Green transitions and collaborative landscape strategy making –insights from Denmark

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Rural landscapes are in transition worldwide driven by intersecting processes including climate change, structural changes in agriculture (concentration, specialization, intensification/extensification), urbanization in various forms, and decline in biodiversity (Pinto-Correia et al. 2018). Also, public policies and planning are changing at all levels and sectors (including both market policies and ‘sustainability policies’ affecting (and affected) by landscape change (Primdahl and Swaffield 2010). However, the policies are poorly integrated, but will nonetheless meet in the landscape, often in conflict with each other and with overall dysfunctional outcomes. Collaborative planning has an obvious role to play in guiding these transitions in relation policy integration, conflict management, and place making (Healey 2009).

In this paper we present and discuss the radical changes in Danish climate and environmental policies recently approved by a vast majority in the parliament and in partnership with farmers union, trade unions and the nature conservation association. Within the next few decades 15-25 % of the agricultural land (10-15% of the country) is expected to change land use –be afforested, converted to extensive grazing, or rewilded. The policies will be implemented partly through collaborative planning processes involving state agencies, municipalities and various interest groups, partly by individual agreements supported by various subsidy schemes and other enabling measures.

On this background we first review the fields of landscape ecology (including Termorshuizen and Opdam 2009), socio-ecological systems (including Folke et al. 2005), and planning theory (including Healey 2009, Innes and Booher 2015, Forester et al. 2019) focusing on resilience and collaborative planning. We then draw on our own experiences from more than 20 action research projects presenting insights concerning conditions for and solutions from collaborative strategy making for rural landscapes (Kristensen and Primdahl 2020). Discussions will include principal and practical issues such as self- and co-determination, stakeholder involvement, scoping, confrontation dialogues (confronting external expertise with local experience and values), project selection, and framing.

We finalize by analyzing and discussing the opportunities and limitations of collaborative landscape strategy making as an approach to green transition in the context of the current Danish reform and with some wider references to the EU Green Deal.

Keywords:

climate change; collaborative planning; green transition; landscape strategy making;

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The Intersection of Human Settlement Theory and Field Theory: Constructing New Theories of Rural Human Settlements and Pathways for Rural Revitalization Practice

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The Rural Revitalization Strategy has significantly enhanced the scale, livability, and productivity of rural areas in China. This transformation has led to substantial changes in living spaces, production areas, and social relationships, resulting in the reshaping of rural fields. However, it also faces the dual challenges of ecological environmental issues and the imbalance between urban-rural development. This study centers on the critical issue of how to effectively translate urban-oriented human settlement theory into a theoretical framework that is applicable to the study of rural human settlement, and how to shift traditional rural planning from a “technical-material” spatial orientation to a “spatial-relational” systemic planning approach, thereby supporting more effective implementation of the Rural Revitalization Strategy. Building on this foundation, this paper integrates sociological field theory with the classical theory of human settlements in planning to develop a dual-core theoretical model of “relationship iteration-space reconstruction.” It critically examines the core concepts, divergences, and potential pathways for the deep integration of systems theory-driven engineering thought and relationship-oriented sociological theory. The paper aims to explore and establish a theoretical framework for rural human settlement that supports rural revitalization. It defines the rural human settlement as the spatial representation formed through the interactions, negotiations, regulation, and distribution among different actors in the rural field, based on their respective resources and energy. The study begins by tracing the evolution and core concepts

of two major theories, and, based on the unique natural, social, and cultural context of rural areas, as well as the complex social relationships, proposes a spatial characteristics analysis framework for the three key elements of “human-settlement-environment.” It then deconstructs the dialectical relationship between these spatial elements from two dimensions: “capital (social, cultural, economic, policy) - habitus (the tendency of human activities),” exploring how social forces and capital flows influence the iteration and re-shaping of rural fields. Finally, the theoretical framework is applied to practical cases for validation. The results indicate that existing rural revitalization practices follow two modes of field reconstruction: local and external. While residents’ living and production standards have significantly improved, this progress has been accompanied by a range of unstable field conditions, such as conflicts between urban and rural cultural habits, fractures in social relationships, and capital monopolies, which urgently require repair and improvement. The study further demonstrates that the “capital conversion-habitus penetration” mechanism within field theory offers a sociological explanatory framework for the “regional suitability” principle in human settlement theory, thus forming a rural revitalization path of “capital circulation-space reconstruction-habitus penetration.” The dual-core theoretical framework for rural human settlement developed in this study goes beyond the scope of physical space design, shifting the focus from the traditional surface-level concepts of economic development and infrastructure construction to a more comprehensive intervention in the deeper layers of rural fields, such as power dynamics, cultural meanings, and resource allocation. This theoretical approach is better equipped to address challenges faced in rural revitalization, including resource scarcity, inequitable distribution, social fractures, and environmental degradation. It provides fresh perspectives for both the theoretical development and practical application of rural human settlement, while offering crucial support for the more effective implementation of rural revitalization strategies.

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Keywords:

Human Settlement Theory; Field Theory; Rural Human Settlement; Capital and Habitus; Rural Revitalization;

T_10 THEORIES (O) / 662

If Arendt were a planning theorist: “wandering” thoughts about a hermeneutic phenomenological planning approach

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Planning theory has always been influenced by thinkers outside the discipline, such as Jürgen Habermas, Chantal Mouffe, and Michel Foucault. ‘Planning as transformative action’, as the conference title suggests, can be understood as a reference to the work of political theorist Hannah Arendt, which has received little attention in planning theory. Her critical thinking, shaped by the collapse of western civilization, is unfortunately highly relevant again. Arendt calls her approach “thinking without banister” (Arendt 2018), a

method free from dogmas and ideologies, based on Kant's "expanded mentality." For Arendt, political theory is a secular yet restless, wandering intellectual activity. Her 'Wandering Type' of political theorizing (Sigwart 2016) follows neither the tradition of Plato and the noetic vision of universal, stable, incontrovertible and true principles, nor the famous Aristotelian concept of the *zoon logon hechon* and *zoon politikon*. Her thinking moves between philosophy and politics, adopting a multi-contextual, comparative perspective and a particular way of understanding. An Understanding that is a concrete, engaged confrontation with reality, inseparable from action (Sigwart 2016). In her book 'The Human Condition' she views 'action' (praxis) as the means by which individuals and communities create political "spaces" of freedom with a relational dimension of interdependency (Arendt 1958). Politics always belongs to the worldly sphere where plural interventions produce a series of unpredictable and uncontrollable events. Her concept of 'the Political' is based on the existential human condition of 'plurality' that make us political beings, in contrast to conventional idea of politics. Politics therefore demands to be examined according to its own principles. This means moving towards an appreciation of embodied experiences by recognising the importance of narratives in capturing the realities of human existence and a politicization of theory in general (Cavarero 2000). Arendt dares to undertake a radical phenomenology of the fundamental materiality of the human being, an embodied singularity here and now in this way and no other (Cavarero 2000). Adopting a hermeneutic-phenomenological perspective, Arendt seeks to understand reality from a first-person plural perspective, thereby acknowledging the complexities of the human condition.

Planning and planners are political (Moroni 2020). Planning is not only an institutional technology (Rivolin 2012) but consists of interpretative activities, and since each planning situation is unique, understanding becomes a central epistemic task in planning (Behrend 2024). In this way, planners can be participants on the public 'stage' of 'agonistic communicative action' (Gunder 2003) in addition to their targeted, purposeful and structured approach in the sense of 'work' (poiesis). Participating in this public debate requires a hermeneutic phenomenological process of understanding, which includes a conception of the empirical object, a general idea of the meaning of thinking, and a 'judgement' about the understanding of self and other (Redecker 2013). By comparing Arendt's phenomenologically oriented political hermeneutics (Opstaele 2001) with landscape planning hermeneutics (Lühns 1994), I want to demonstrate how considering subjectively perceived contexts from diverse external perspectives can elevate subjective 'judgment' of planners to a political-public level.

Keywords:

planning theory, Hannah Arendt, hermeneutic phenomenology, understanding

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T_10 THEORIES (O) / 505**Progressive Urbanism****Author:** Chandrima Mukhopadhyay^{None}**Corresponding Author:** cmukhopadhyay22@gmail.com

It is time to better understand how despite numerous constraints innovative, equitable practices that lead to progress have emerged in cities in the global south and east, especially acknowledging new development pathways which are different than how cities in the developed countries had evolved. While terms such as “Global North and South” are defined based on economic performance, the figures can potentially change over time. This study proposes a new understanding of “progress” and “urbanism” building on recent research on development- and urbanism-literature. The term ‘progressive’ is meant to signify an advancement of and a convergence towards a new form of economic development which leads to climate-friendly urbanism, in line with the global urban agenda, which calls for an inclusive built environment for the majority. Cities in the Global South and East are geographically the best places to understand about progressive urbanism right now. From a spatial planning perspective, progressive urbanism has the potential to transform our perception of spatial imaginaries about wealthy and healthy communities. A few examples of such progressive urbanism are: how cities in the global south are implementing innovative ways to deliver on Paris Agreement pledge while also generating economic development, and delivering UN’s Sustainable Development Goals.

T_10 THEORIES (O) / 602**Localization and Application of Scene Theory in the Context of Historical Town Preservation in China: A Case Study of Shannxi Mizhi Ancient Town****Authors:** 王宇¹; 王宇¹¹ 中国美术学院**Corresponding Author:** 921806860@qq.com

Scene theory, rooted in a consumption-oriented perspective, conceptualizes space as an arena where diverse consumption symbols and cultural values converge. The theory’s primary contribution lies in its innovative shift from an economy-driven to a culture-driven urban development paradigm and its introduction of quantitative scene analysis methods. Since the establishment of the historic city protection system in 1982, China’s cultural heritage preservation practices have evolved from a focus on “construction control” to a “three-tiered protection system” and, more recently, to an emphasis on “value transmission.” However, as an integral component of this system, the question of how historic towns can achieve value transmission as living heritage has become central to cultural heritage preservation efforts.

This study explores the localization and reconstruction of scene theory to address the challenges of identifying and evaluating value transmission in the context of China’s current cultural heritage preservation practices. It addresses three key conflicts: the divergence between the cultural consumption orientation of post-industrial urban economies and the cultural transmission orientation of contemporary China’s cultural renaissance; the discrepancies between the meanings of scene elements in migratory and localized contexts; and the differences in scene value dimensions between Western and Chinese cultural frameworks. Using Mizhi Ancient Town as a case study, this research collects initial data through field surveys and web data scraping, and employs grounded theory to reconstruct scene value dimensions guided by a cultural transmission framework. Context-specific scene elements are defined based on the socio-ecological characteristics of Mizhi, leading to the development of a localized scene analysis framework.

The findings demonstrate that the localized scene analysis framework effectively evaluates the cultural transmission outcomes attributed to different actors in the production of space within living heritage contexts. It identifies weaknesses in value transmission and proposes targeted strategies and measures for improvement. This framework not only provides a practical tool for assessing value transmission in the preservation of historic towns in China but also contributes to theoretical innovation and practical advancement in the field of cultural heritage preservation in the contemporary era.

Keywords:

scene theory; localization; historic city; historic town preservation; value transmission

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T_10 THEORIES (0) / 1153

Tensions and ethical considerations in planning practice at the local level: the case of tall buildings in Greek cities

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Planning practice is a key issue not only to understand the deeper nature of planning system, but also to defend good planning (Parker and Maidment, 2024). It is formulated by the blurring borders of formal paths –that are related to laws, rules and open democratic processes- and informal mechanisms, which include shadow processes of influence, negotiations and communicative power. Planning practice is carried out both by public agencies and planning professionals who consider ethical issues in different frameworks. Even though ethics in planning are mainly correlated to the key ideas of 'public good' and 'social justice', different values, served interests (individual, community, common) and priorities of politics make the meaning of justice for urban life unclear (Hoekveld and Needham, 2013).

A key example of tensions and different ethical considerations that are reflected in local-level planning is the allocation and development of tall buildings in European cities. Policy-making about land-use zoning for high-rise development should take into consideration private interests, political processes and public good. Developers seek for maximizing land value and politicians seek for promoting the city in competition or city marketing. However, while private or other powerful entities are entitled to seek their advantage in the urban fabric, the shape of the city –that is directly related to cityscape- alters without a collective decision (Bharme, 2011). As it has been highlighted by the European Landscape Convention (ELC, 2000), the cityscape's transformation should be based on the participation of the general public, local and regional authorities and other parties. Besides, other values in urban planning, such as environmental aspects of planning, may be ignored.

Considering that tall buildings developments have both a sound impact on Greek city and neighbourhood level - in particular, on skyline, urban landscape, urban microclimate and social life - the current paper deals with multiple interests and ideals, economic, social, environmental and law issues, that either coexist or compete each other and regulate the development of tall buildings in Greek cities. The paper seeks to provide insight

into ethical perspectives and values concerning the appropriate balance between the role of the state and collective or individual welfare (Bakunowitsch et al., 2024, Campbell and Marshall, 2008).

Keywords:

ethics; values; planning practice; private interests; public good; public agencies

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T_10 THEORIES (0) / 1465

Postmodernist Criticisms and Human-Centered Urban Planning

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In the historical process, urban space, urbanization, and urban planning dynamics have been changing and transforming in response to developments that create ruptures in society and living conditions. In the 21st century, innovations in transport and communication technologies have changed the perception of time and space, leading to the redrawing of urban boundaries. This transformation has reinforced the global role of cities, requiring the coordination of economic, political, and spatial dynamics. In this direction, strategic planning approaches have been developed, urban design has focused on process design or fragmented applications rather than aesthetics, and private capital and image-oriented designs have been adopted. One of the most important emphasis of the postmodern approach has been the prioritization of participation and the demands of local communities in the creation of urban life and space. In contrast to modernist projects, this understanding suggests that a civil society in which different communities are in negotiation is the most effective spatial form. The social space in the city, where various demands are reconciled and where everyone can enjoy being a part of it by adding what belongs to them, can be formed spontaneously in a bottom-up participatory approach away from external interventions (Scott, 1998). In this context, the postmodern planning perspective takes into account the different interests and identities in society, listens to them and enables negotiation processes (Watson and Gibson, 1995; Şengül, 2012). Thus, the postmodern era encourages more flexible organization instead of a uniform planning approach by adopting an approach that supports cultural diversity (Karakurt, 2006).

However, it is seen that the postmodernist perspective has not sufficiently developed its own understanding of planning. Baudrillard, one of the leading figures of postmodernism, stated that the most fundamental characteristic of postmodern society is that

it talks about simulations instead of reality. In this case, he states that we are faced with a world where the distinction between reality and simulation becomes difficult and subjects are fragmented and dispersed (Baudrillard, 1983). In such a hyper-reality environment, urban planning processes take place in a world where subjects and the problems they face are constantly redefined and constantly reinterpreted. At this point, it becomes difficult to plan the future (Şengül, 2012). In this regard, it has become an important issue to explore and discuss different urban planning concepts/paradigms for future cities in the light of postmodernist criticisms.

It is obvious that urban planning concepts, urban design practices, and policies developed since the modern era have consistently aimed to create the most livable or ideal city. Therefore, a sustainable environment and a resilient city, designed with a human-centered perspective and providing maximum benefit to all segments of society and increasing the quality of life in every aspect, will constitute an important dimension of future cities. For such an approach, learning lessons from past paradigms is of great importance for future cities to “approach the ideal”.

Through the evaluation of past urban planning paradigms and contemporary challenges, this study seeks to define the core principles of a human-centered urban planning approach which ensures resilience and sustainability in the 21st century. The study is based on an in-depth literature review and conceptual analysis.

Keywords:

Modernism, post-modernism, planning paradigms, human-centered urban planning, urban resilience.

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T_10 THEORIES (O) / 1225

Different rental housing policies models and the ongoing difficulty of overcoming the housing crisis

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This paper aims to analyse how the current housing and rental crisis unfolds in Brazilian and Latin American cities in a context of both (i) the rising role of rental housing as a new frontier for the accumulation of financial real estate capital, and (ii) the limitations of overcoming the housing crisis through planning.

The global cases discussion at the Rental Housing Policies Seminar (2024) brought examples from the Americas, Europe, Africa, and Asia, with the Brazilian experience as

a reference, highlighting the wide scope and diversity of rental policies worldwide. This panorama showed three distinct models of rental policies, although neither of them has been able to respond to the main issues of access to housing.

One model is based on the Public-Private Partnership strategy proposed on pilot cases that grant private entities the right to build new units and manage housing services for decades.

Another model seeks to scale up pilot experiences of social rentals on public-owned units, maintaining public management and seeking to improve them. There are very few cases, because in Latin America, unlike countries in the Global North that have had a Welfare State and have a public rental housing stock, rental housing policy has always been residual compared to home ownership agenda.

The most widely implemented rental policies are “precarious” ones –transferring a monthly amount as rental assistance in response to the need to remove residents from areas of public interventions, disaster-prone sites, or in response to cases of violence against women, for homeless people and/or drug users, among others. These policies have limits in terms of housing response: they are temporary and have to be frequently renewed, because government is unable to offer permanent and adequate housing; the properties are not inspected by specialists, and families may be living in precarious places; they stimulate a real estate market as a consequence, which may be formal and expensive, or informal and precarious; the amounts paid are insufficient to access the housing market; and they are understood as social benefit policies, and may not be used for housing; among others.

The cases in which civil society or social movements are responsible for the housing management are limited to a few buildings or units, usually aimed at a specific target audience, which is also evident in the international experiences presented.

In short, different conceptions of the State seem to coexist with different arrangements in national and international experiences, while in Brazil the various cases presented appear to be guided by three models of public policy for social rental in progress. One, which resists the dismantling of the public housing stock and strives to overcome the challenges of the current social rental programs, admitting that it is only subsidized rental that effectively serves the most vulnerable families on a permanent basis. The second seeks to outsource public management, in pilot projects that are of interest to the market but do not serve those most in need. The third has the politics of urgency as the main concern, offering precarious and constant benefits without any control by public policy as to whether these benefits are being used for effective access to housing. All models, despite being structurally distinct, form parts of the same housing policy agenda without revealing their ambiguities. The challenge seems to lie in structuring a more socially diverse model, involving civil society and social movements in the constitution of non-speculative policies aimed at testing the decommodification of housing. This democratic alternative has to be supported by public authorities and correspond to the scale of the housing demand.

Keywords:

Rental housing; housing policy; affordable housing; Latin America; Brazil

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T_10 THEORIES (O) / 1458

Socio-spatial transformations of social housing: A Case Study of the Lisbon Metropolitan Area

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The convergence of global crises—e.g. climate change, socio-economic inequities—has highlighted the urgent need for transformative spatial planning that addresses deep-seated inequalities. In this context, social housing offers a critical lens through which to analyse the interplay between space, society, and policy. This paper examines the socio-spatial transformations of social housing in the Lisbon Metropolitan Area (LMA), focusing on the interaction between housing typo-morphologies, social dynamics, and political-economic trends.

The LMA has long been a site of significant socio-spatial transformations, shaped by waves of urban expansion, migration, and housing policies. Social housing for rehousing, often implemented as a response to displacement caused by urban renewal, informal settlements, and socio-economic crises, reflects the complex relationship between architectural and urban typologies, social stratification, and political agendas. This study situates these interventions within the broader dynamics of metropolitan Lisbon, exploring how housing policies and practices influence and are influenced by social and spatial configurations.

A central focus of this analysis is the examination of housing typo-morphologies—urban and architectural forms that embody specific socio-economic and political ideologies. In the LMA, social housing typologies range from large-scale peripheral estates to infill developments in central neighbourhoods. These typologies do not only reflect but also reinforce spatial hierarchies and social divides. Peripheral estates, for instance, often isolate residents from employment opportunities and urban amenities, perpetuating cycles of socio-economic exclusion. Conversely, centrally located developments can trigger gentrification dynamics, displacing vulnerable populations and undermining the very goals of equitable rehousing policies.

The paper also considers the role of social dynamics in shaping and being shaped by these housing interventions. In the LMA, diverse demographic groups—immigrants, low-income families, and displaced communities—navigate the socio-spatial constraints imposed by housing policies. Their experiences reveal how social housing, while addressing immediate needs, often fails to foster long-term integration and resilience. The persistence of social inequalities underscores the limitations of current planning paradigms that prioritize economic efficiency over inclusivity and care.

In addition to examining spatial and social dimensions, this paper interrogates the political-economic trends that underpin social housing policies in the LMA. Portugal's shift towards neoliberal urban policies, characterized by privatization and market-oriented development, has reshaped the landscape of social housing. While public housing programs have sought to address housing precarity, they have often been constrained by limited funding and competing priorities, resulting in fragmented and uneven interventions. These trends highlight the need for a more comprehensive and equitable approach to housing policy, one that integrates spatial, social, and ecological considerations.

Through the case study of the Lisbon Metropolitan Area, this paper argues for a reimagining of social housing as a transformative tool for socio-spatial justice. It emphasizes the importance of integrating housing typo-morphologies, social dynamics, and political-economic trends into planning practices. Ultimately, the socio-spatial transformations of social housing in the Lisbon Metropolitan Area underscores the transformative potential of planning to address the interconnected challenges of

inequality, displacement, and environmental degradation.

This study seeks to inspire innovative approaches to social housing while prioritizing care, equity, and resilience, to foster a metropolitan region that is more inclusive, sustainable, and capable for addressing the complexities of a rapidly changing world.

Keywords:

Social Housing; Socio-spatial justice; spatial planning

Track 11 | EMERGING TECHNOLOGIES

T_11 EMERGING TECHNOLOGIES / 672

Towards Drone-Based 3D City Information Modeling for Urban Analysis and Planning

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This research addresses the challenges of 3D City Information Modelling using UAVs for data collection and processing. It presents an appropriate cost-efficient and scalable approach for generating high-resolution 3D urban models by integrating advanced photogrammetry and data-driven methods. The primary goal is to overcome barriers in data collection, processing, and model implementation, providing an adaptable approach for urban studies and related disciplines.

The research integrates a systematic review and bibliometric analysis using BSMS (Bibliometric Analysis, Systematic Review, Meta-Analysis, and Storytelling) techniques. These methods were employed to identify critical gaps in CIM-related urban planning studies, provide a deeper understanding of trends, and synthesize insights from the existing body of work. By combining these findings with the practical UAV-based workflow, the research seeks to bridge theoretical and practical knowledge in CIM.

Using Istanbul's Emniyetstepe Neighborhood as a case study, the research demonstrates UAV-based imaging techniques to capture detailed aerial and structural data. These data were processed to generate outputs such as Digital Surface Models (DSM), Digital Terrain Models (DTM), orthomosaics, and point cloud datasets, all of which offer precise spatial and structural information. These outputs form the basis of a comprehensive digital CIM model, which incorporates 3D mesh models and other datasets to support future analysis and applications. This model is envisioned to address urban challenges by offering an enhanced representation of built environments.

The study highlights the potential applications of UAV-based CIM in urban planning, particularly in improving data-driven decision-making and enhancing urban visualization. It underscores the transformative potential of CIM in fostering innovative, technology-driven urban planning methodologies.

The outputs of this study provide a foundation for researchers, planners, and policy-makers to explore novel applications of CIM, driving advancements in sustainable urban development and evidence-based planning processes. The combination of systematic analysis, UAV-based data acquisition, and advanced processing methods offers valuable insights for both academic and practical advancements in the field.

Keywords:

3D City Information Modeling; UAV Technology; Urban Analysis; Photogrammetry

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T.11 EMERGING TECHNOLOGIES / 1842

Smart City Imaginaries: A Theoretical Framework for Socio-Technical-Spatial Analysis

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In recent years, the concept and vision of Smart Cities have been widely embraced in policymaking and urban planning worldwide, projecting ambitious urban futures for contemporary cities. The aim of this study is to explore the nature of the socio-technical-spatial imaginaries surrounding smart city initiatives by critically examining the historical trajectories of information and communication technology (ICT), and urban development, shaped by distinct socio-, cultural and political contexts. By integrating the theoretical frameworks of socio-technical imaginaries (STIs) and socio-spatial imaginaries (SSIs), this work proposes a powerful theoretical framework for Smart City imaginaries (SCIs). I argue that this framework offers a holistic lens to explore the complex interrelations between technology, society, and space in shaping Smart Cities.

Despite its semantic ambiguity and conceptual plurality, the Smart City paradigm has emerged as one of the predominant models of urban development. A substantial body of literature contends that the visions and concepts underlying Smart City initiatives are largely driven by a global corporate discourse (Söderström et al., 2014; Sadowski and Bendor, 2018; Joss et al., 2019) and the prevailing technological hype surrounding artificial intelligence, big data, and digital infrastructure. Moreover, over the past decade, the Smart City concept has been strategically intertwined with other urban visions, such as sustainable urban development, resilient cities, inclusive cities, and circular cities, reflecting its adaptability across diverse socio-political and economic contexts. This integration has reinforced its legitimacy and entrenched Smart City discourse as a dominant urban development rationale. Consequently, the Smart City has evolved into a complex strategic instrument, repackaging traditional urban planning and land development through the rhetoric of "smartness" while subsuming and replacing other policy domains, such as housing policies and economic strategies (Sepehr and Felt, 2023). As a result, Smart Cities serve as tangible manifestations of political agendas and technological aspirations projected onto the city as whole.

The socio-technical imaginaries (STIs) framework provides a robust analytical approach to interrogate Smart City initiatives as co-produced outcomes of science, technology, and national identity within specific socio-political contexts. However, SCIs extend beyond technological transformation; they actively shape socio-spatial practices, social orders, and spatial identities. Despite the growing discourse on Smart Cities, limited scholarly attention has been paid to integrating socio-spatial dimensions with the socio-technical imaginaries of Smart City initiatives. Arguing that space is a fundamental com-

ponent of SCIs, this study advocates for a deeper recognition of the mutually constitutive relationships between society, technology, and space. To capture the multidimensional nature of SCIs, this research proposes a triadic analytical framework encompassing socio-technical-spatial entities, thereby offering a powerful operational tool for empirical investigations. Using Smart City initiatives in the Netherlands and the Republic of Korea as comparative case studies, this study highlights the limitations and potentials of prevailing SCIs in both national contexts and calls for a reimagining of “smartness” through alternative narratives that foster diverse values and inclusive urban futures.

Keywords:

Smart Cities; Socio-technical-spatial imaginaries; Theoretical Framework; Urban imaginaries

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Information science, digital modelling and the legacy of the engineering mindset in planning thought

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The last three decades have witnessed two parallel and possibly divergent developments. This season can indeed be described as the spring of post-positivist approaches to planning theory (Allmendinger, 2002) as well as of digital modelling applications intended as decision support systems in planning practice (Geertman and Stillwell, 2004). While these support systems faced the so-called implementation gap (Jiang et al., 2020), the latest experiments in artificial intelligence (AI) have revived expectations that information science may ultimately be trusted to deliver expert-driven technocratic solutions for planning problems. This expectation raises either anxieties or enthusiasm depending on whether one endorses the post-positivist critique of expert knowledge, or whether one assumes that the proven limitations of human expert knowledge were just a matter of inadequate computing abilities. This paper draws on John Friedmann’s classic understanding of scientific based planning, the engineering mindset and of system engineering’s influence on planning thought (Friedmann, 1987), to refresh its insights. As Friedman’s understanding dates to the eve of the above-mentioned season, refreshing encompasses both revival and update. It highlights both its contemporary relevance to question enthusiastic expectations about AI applications in planning practice, as well as the need to integrate it with new insights that may reduce a number of anxieties. The new insights derive from the observation that the above-mentioned spring season raised post-positivist concerns across domains, encompassing information science and urban

and regional digital modelling, and establishing the ground for post-positivist pluralism from within. Examples of this pluralism can be found in philosophical and semantic-cognitive approaches to information science (Couclelis, 1983; Guarino, 1998; Borgo et al. 2022), as well as in shifts in system theory on the closure of systems in the light of complexity science (Batty and Torrens, 2001; Portugali, 2021). In this light the paper concludes that engaging with scholarship in information science and system theory akin to post-positivist perspectives is pivotal for planners to confront both anxieties and enthusiasms regarding the adoption of AI or other digital technologies in planning practice.

Keywords:

positivism; pluralism; ontology; urban systems; planning support systems;

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Integrating Mixed Reality and Large Vision Models to Measure Multi-Dimensional Urban Green Perception

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Green perception, as a crucial indicator for measuring urban greening levels and the visibility of neighborhood green spaces, is widely applied in research on built environment quality, resident satisfaction, social equity, attention restoration, and more. It holds significant importance in urban planning and public policy. With the rapid development of big data, machine learning, and artificial intelligence, utilizing Street View Imagery (SVI) and computer vision to measure green perception has become an important approach. However, existing methods have three limitations: (1) They predominantly rely on a single Green View Index (GVI) metric, overlooking the multidimensionality and complexity of green perception; (2) They focus on extracting 2D features from SVI, neglecting the 3D spatial characteristics of urban landscapes, thus failing to accurately capture the impact of green landscapes at different distances on subjective perception; (3) In subjective perception assessments, participants typically use computer screens for simulated experiences, lacking immersion and realism.

To address these gaps, this study proposes a green perception measurement method that employs mixed reality (MR) and large visual models (LVMs) to collect and integrate multidimensional information. Specifically: (1) Based on an in-depth exploration of landscape perception mechanisms, this study establishes a multidimensional green perception indicator system integrating both objective and subjective perceptions. The objective perception indicators encompass 3 dimensions—color features, landscape elements, and spatial forms—totaling 30 indicators. Subjective perception includes 6 indicators: green coverage, vegetation diversity, natural ambiance, relaxation, attractiveness, and environmental quality. (2) Utilizing SVI from Baidu Map and state-of-the-art LVMs including SAM, DINOv2, Depth Anything, this study measures the objective perception of green landscapes. These models not only extract semantic information of green landscapes from SVI but also estimate the spatial depth of landscape scenes, achieving the integration of color features, landscape elements, and spatial forms. Furthermore, pre-trained models are employed to perform computer vision tasks under zero-shot conditions, significantly reducing computational complexity and training time. (3) Volunteers were recruited to measure subjective perception data using both computer screens and MR devices. The relationship between objective and subjective perceptions was established through 3 machine learning algorithms: Random Forest (RF), Support Vector Machine (SVM), and Extreme Gradient Boosting (XGBoost).

In an empirical study conducted in Shenzhen, China, experimental results indicate that: (1) the proposed method achieved higher prediction accuracy for greening degree, vegetation diversity, and natural ambiance compared to relaxation, attractiveness, and environmental quality; (2) RF consistently outperformed SVM and XGBoost in predictive performance across different perception dimensions; and (3) models trained using the MR-based perception method exhibited significantly higher accuracy than those based on computer screens. This verifies that MR devices offer greater advantages over computer screens in terms of immersion, realism, and user experience in urban built environment audits. These findings validate that the green perception measurement method integrating mixed reality and large vision models outperforms traditional methods in terms of perception dimensions and accuracy. Specifically, in urban built environment audits, MR devices offer significant advantages over computer screens in immersion, realism, and experiential quality. Furthermore, the study generated green perception distribution maps, analyzed the spatial characteristics of Shenzhen's green landscapes, and identified key factors influencing green perception.

This study proposes an innovative approach to measuring urban green perception by integrating mixed reality and large vision models, effectively overcoming the limitations of traditional methods. The approach not only enriches the theoretical dimensions of urban green perception measurement but also enhances measurement accuracy from a technical standpoint. It holds significant application value in urban built environment auditing, assessment, and planning, contributing to the development of greener, healthier, and more livable cities.

Keywords:

Urban Green Perception; Mixed Reality; Large Vision Models; Machine Learning; Street View Imagery

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“Love the Specific Scene of Life”: A Visual Analysis of User-Generated Narratives on Walkable City Spaces

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In recent decades, urban China has witnessed a significant shift in leisure patterns, marked by increased free time and disposable income among city dwellers. Within this context, walking has emerged as a universally appealing leisure pursuit, transcending age barriers and offering an accessible, cost-effective, and flexible form of physical activity. This rise in urban walking not only reflects changing lifestyle preferences but also represents a unique form of engagement with the city itself.

Urban walking tours have long provided an immersive way for people to experience urban spaces and their complex spatial relationships. The rise of geo-media has revolutionised how individuals interact with their urban environments, merging personal imagination with real space and enabling both information sharers and receivers to reconnect with particular places. Users actively participate in shaping urban narratives by creating and sharing diverse representations of specific places across multiple platforms. This digital place-making process blends virtual and physical aspects of urban life, leading to a reimagining of city spaces. The phenomenon of “Wang Hong urbanism” represents a cyclical process where digital representations inspire physical changes, which in turn generate new digital content, raising important questions about authenticity and the future direction of urban development.

This study explores urban glamour in the digital age, focusing on city walking as a significant cultural phenomenon in Chinese urban life that embodies the concept of exploring the nearby as a scope of seeing the world. We analysed photographs posted on the social media platform Douban under the hashtag #CityWalk using Class Activation Mapping (CAM), an advanced technique for interpreting Convolutional Neural Network (CNN) predictions. The study employs a scene classification model trained with the Places365 dataset to perform scene recognition on self-collected image samples. We propose a hierarchical classification framework that consolidates the 365 fine-grained scene categories identified by the model into 10 high-level semantic categories, aiming to determine which elements of urban design and landscape attract significant user attention when describing cities through social media content. The analysis categorised the visual content into three main elements: natural landscapes (e.g., vegetation), urban man-made structures (e.g., buildings and monuments), and the presence of people in these spaces.

The analysis results indicate a clear preference for human-made structures and unique urban locations over natural ones, with artificial outdoor environments, including common urban features such as streets, parking garages, and crosswalks, dominating the photographs. A more granular examination of the specific urban elements most frequently captured in city walk photography reveals that urban explorers are drawn to a wide spectrum of urban characteristics, from natural environments to cultural spaces, encompassing both large-scale elements (like sky and streets) and localized features (such as alleys and beauty salons). This diversity suggests an appreciation for

both macro and micro aspects of city landscapes, extending beyond traditional tourist attractions. There is a marked preference for scenes that capture the interplay of light and shadow on urban surfaces, as well as moments of serendipity in daily urban life. Notably, people give new meanings to these spaces by socialising and actively participating in their creation. Enchanting the mundane - rendering everyday urban scenes into captivating experiences - is at the heart of the digitally engaged city. The findings provide insights into how city-walkers reconfigure their perceptions and experiences of walkable urban spaces through social media, as well as an understanding of the urban character of urban tourism in the context of Wang Hong urbanism. By aligning urban design with the aesthetic preferences revealed through City Walk practices, cities can create more engaging, livable environments that resonate with residents' everyday experiences and foster a stronger sense of place and community.

Keywords:

city walk; visual content analysis; social media; urban design; geomedial

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Supporting collaborative scenario-building in land use and transport planning: An evaluation of the SIM4PLAN tool.

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Existing planning support systems (PSS) have yet to fully address the challenge of integrating land use and transport (LUT) planning through collaborative scenario-building (te Brömmelstroet & Bertolini, 2008, 2010). Despite their potential, most PSS suffer from critical limitations, including insufficient LUT integration, lack of collaborative features, reliance on technical expertise, and an inability to capture essential spatial patterns (te Brömmelstroet, 2013; Champlin et al., 2019; Pelzer, 2017; Russo et al., 2018). These

shortcomings reduce their effectiveness in early-stage planning, where strategic alignment, stakeholder engagement, and scenario development are most impactful.

This study introduces and evaluates SIM4PLAN, a PSS prototype designed to enhance scenario simulation and analysis in the early phases of LUT planning. The tool features an intuitive, multi-user platform that enables diverse stakeholders to collaborate at different usability levels, ranging from predefined scenarios to fully customisable simulations. It also employs a Vectorial Cellular Automata (VCA) model at the cadastral parcel level, improving the realism and interpretability of spatial impacts on LUT interactions. The prototype was empirically assessed through two experimental workshops—one engaging the public and the other involving policymakers and practitioners. Using a combination of questionnaires and observational analysis, the study evaluated SIM4PLAN's user interface, usability, and practical value in a real case study of the Henares Corridor region (Madrid, Spain).

Results highlight the tool's accessibility and collaborative potential as key strengths. Unlike conventional PSS, which are often designed for technical experts, SIM4PLAN's modular structure accommodates varying levels of user experience, making it accessible to both professionals and non-experts. This approach fosters greater public awareness and engagement while facilitating dialogue and consensus-building among policymakers and practitioners, thereby improving LUT integration in strategic planning. However, opportunities for improvement remain. Workshop feedback identified three key areas for further development: (1) Transparency, where enhanced documentation and visual aids could improve user confidence in simulation outputs; (2) Scenario Interpretation, where additional evaluation methods could help balance competing priorities, such as economic growth versus environmental sustainability; and (3) Adaptability, where customisation features would allow integration of local policies and regulations to reflect real-world planning constraints more accurately.

In conclusion, this study highlights SIM4PLAN's potential to enhance collaborative and scenario-driven LUT planning by making complex spatial simulations more accessible and inclusive. While its user-centric design fosters engagement among diverse stakeholders, ongoing refinement is necessary to address key challenges related to transparency, scenario interpretation, and adaptability. Future efforts should focus on scaling its application and expanding its evaluation framework through iterative testing and real-world case studies to fully realise its impact. By doing so, SIM4PLAN can evolve into a robust and widely applicable strategic resource for integrated LUT planning.

Keywords:

cellular automata; disruptive scenarios; participatory planning; urban land use; simulation

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Urban Digital Twins for Cities in Transition: A Literature Review on Current Applications and Future Perspectives

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Cities in transition are urban environments undergoing profound transformations to address some of the most pressing global challenges, including climate change, socio-economic inequality, rapid urbanization, and the urgent need for sustainable development. These cities aim to become more resilient, inclusive, and environmentally conscious by reconfiguring their systems, structures, and governance.

Central to this process is the adoption of innovative technologies, such as Urban Digital Twins (UDTs), which enable more effective management, monitoring, and planning of urban systems.

The concept of Urban Digital Twins (UDTs) has emerged as a transformative tool for spatial planning and urban management, offering dynamic, real-time virtual representations of physical urban environments.

UDTs are dynamic, data-driven virtual replicas of physical urban environments, continuously updated with real-time data and capable of advanced simulations. By bridging physical and digital spaces, UDTs enhance urban planning through three primary functions: management, monitoring, and facilitation of planning processes.

In fact, UDTs enable the development of comprehensive reference frameworks, exploration of “what-if” scenarios to evaluate the potential impacts of policies or projects, and implementation of data-driven decision-making processes that account for socio-economic, environmental, and spatial dimensions.

Despite the numerous benefits, the deployment of UDTs faces several challenges, such as the high costs of implementation, data standardization issues, and also raises ethical concerns related to privacy and algorithmic bias. Data privacy is a significant issue, as the extensive data collection required for UDTs can lead to potential breaches of personal information. Addressing this requires robust data governance frameworks that ensure the protection of individual privacy while enabling data-driven urban innovation. These limitations are particularly pertinent for cities in transition, where resource constraints and the need for equitable access to technological solutions must be addressed.

The main purpose of this contribution is to investigate the thematic focus of UDTs applications in urban planning, identifying the fields currently addressed and those that could be tackled in the future. Additionally, the research explores the main criticisms and limitations of UDTs, including technical, ethical, and socio-economic challenges. By mapping these dimensions, the study seeks to provide a comprehensive understanding of the role UDTs play today and their potential for transformative urban planning in the context of the cities in transition.

This aim is pursued through a systematic literature review, leveraging academic databases and analyzing peer-reviewed studies published in recent years. Given the novelty of the topic, the literature review methodology ensures a thorough and critical examination of existing research, capturing the most up-to-date developments and insights, offering a robust foundation for understanding the state-of-the-art and future directions.

This research highlights opportunities for UDTs to support climate adaptation, foster social equity, and empower public participation. UDTs represent a promising technological advancement with the potential to transform spatial planning and urban management. By providing a comprehensive overview of their current applications and identifying future directions, this study contributes to the broader discourse on the role of digital innovation in transforming urban planning and fostering sustainable, resilient, and inclusive cities.

However, it is crucial to balance these opportunities with ethical considerations, ensuring that the deployment of UDTs fosters equitable and just urban development. As cities continue to navigate the complexities of urban transitions, the role of UDTs will undoubtedly become increasingly vital in shaping the future of urban planning.

Keywords:

Urban Digital Twins; Transition; Climate Adaptation; Urban Resilience; Innovation

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A Data-Driven Framework for Enhancing First-and-Last-Mile Connectivity in Bicycle-Metro Integration Systems: Based on Dockless Shared Bicycle Data in Shanghai, China

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As global urbanization accelerates and carbon neutrality targets are pursued, urban metro transit has become a key element of sustainable transportation due to its efficiency, low emissions, and affordability. Meanwhile, the quality of first-and-last-mile connections plays a crucial role in metro accessibility (Zuo et al., 2020). In China, the rapid expansion of dockless shared bicycle services has increasingly facilitated first-and-last-mile connections (Shen et al., 2022). However, challenges remain, including long connection distances, high detour rates, and inadequate cycling infrastructure, which limit metro service capacity and travel efficiency. Current methods for processing shared bike trip data face limitations, including low accuracy in extracting connecting trips from the overall dataset, and insufficient rigor in reconstructing cycling routes from origin-destination (OD) data, which fail to align with the actual road conditions (Wei et al., 2023). Meanwhile, existing studies predominantly focus on the isolated connection feature analyses, the impact of the built environment on trips (Tong et al., 2023), or preferences for connecting transport modes (van Kuijk et al., 2022), lacking a comprehensive framework to identify connection features and directly guide improvements in the first-and-last-mile connection environment. This gap significantly hinders the advancements in metro transit accessibility and its equity.

The research aims to develop a big-data-driven connecting trip identification algorithm and analyze the built environment features in bike-sharing catchment areas through a multi-dimensional approach, thereby establishing a systematic evaluation framework for the bicycle-metro integration system and providing quantitative guidance for optimizing first-and-last-mile connection environments. To achieve these objectives, the study utilizes dockless shared bicycle data collected from all metro stations in Shanghai's Jing'an District, an administrative area featuring diverse urban functions and station types, during a typical workday. An innovative identification approach is proposed, integrating a stepping method, sliding window detection, and DBSCAN clustering to more accurately identify connecting trips and delineate bike-sharing catchment areas for each station. In addition, the Baidu Maps cycling route planning API is employed to simulate the cycling routes under real-world urban conditions. Based on these identified trips and routes, multi-dimensional analyses are conducted at both the station catchment area and connecting road segment levels. At the bike-sharing catchment area level, key indicators, such as the dominance of cycling connections, road detour rates, and tidal balance indices, are measured to characterize the overall features of every individual station. At the connecting road segment level, thirteen assessment indicators are established across four dimensions, including infrastructure, road connectivity, function and vitality, and environment. Both the Analytic Hierarchy Process (AHP) and the entropy weight method are applied to assign weights, thereby evaluating the bikeability of each road segment. The usage frequency of road segments, calculated from identified routes, serves as another feature.

Regarding the results, the classification of each station's bike-sharing catchment area and connecting road segments is achieved based on these features through hierarchical clustering and a two-dimensional evaluation matrix. Drawing upon these clusters, differentiated optimization strategies are proposed for the connection environment, with specific case examples illustrating how the strategies are tailored. In conclusion, this research introduces an operational diagnostic and optimization framework for first-and-

last-mile connection environments of bicycle-metro integration systems. It highlights how big data and emerging technologies can drive the transformation of urban transportation, aligning with global goals of carbon neutrality and sustainable development. The findings provide actionable insights for policymakers and urban managers to implement targeted interventions, fostering an efficient, eco-friendly, and inclusive urban transport system.

Keywords:

Transportation Big Data; First-and-Last-Mile Connectivity; Shared Bike; Bicycle-Metro Integration

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Harnessing Smart Technologies in Real Estate: A New Paradigm for Spatial Planning and Urban Development

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This research aims to explore the integration of smart city technologies within real estate development by integrating cutting-edge innovations such as the Internet of Things (IoT), artificial intelligence (AI), and geographic information systems (GIS). Building on the insights from two pivotal papers (Al-Rimawi and Nadler, 2025) and (Al-Rimawi and Nadler, 2023), this research offers a novel approach to evaluating and enhancing city and real estate smartness levels.

The primary objective is to explore how smart technologies can be leveraged to optimize real estate development and urban planning. The research identifies key technological advancements that contribute to the smartness of urban environments and proposes methodologies for their effective integration. Additionally, it investigates in what makes a city smart and which role each stakeholder is responsible for in order to activate the smartness of cities and buildings.

The study highlights the significance of leveraging several technologies to optimize real estate development and urban planning. Key findings include the identification of essential smart city components that directly impact real estate value and functionality, provide an overall highlight of smart cities and smart real estate evaluation

framework, as well as case studies demonstrating successful implementations in various cities.

The research concludes that integrating smart technologies is essential for the evolution of real estate and city development. The proposed evaluation framework provides urban planners and policymakers with practical tools to assess and enhance the smartness of their cities and buildings, fostering more intelligent, equitable, and sustainable urban growth.

Keywords:

smart city, smart real estate, smart technologies, urban planning

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T.11 EMERGING TECHNOLOGIES / 568

Using Social Media Big Data and ChatGPT for Identifying Counter-Urbanisation Hot Spots in China

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While urban areas remain home to most of the global population, the countryside is increasingly becoming a preferred place of residence, even in some developing nations such as China. The potential benefits and challenges for rural development posed by this counter-urbanisation trend make it essential to monitor its extent and progression. However, In China, statistical data on this phenomenon remains scarce due to the restrictions on rural property ownership by outsiders, who can only rent properties from individual rural resident, leaving no formal record. This research uses the data from the Chinese social media platform Xiaohongshu (or REDnote, similar to Instagram), where specific users share their experience renting second homes in or returning to countryside. A web crawler was developed to collect all these 'big data', which was subsequently cleaned and processed by ChatGPT AI model. To ensure credibility, partial human validation was also applied to the AI-processed results. Despite certain limitations, the findings provide insights into counterurbanisation trend in China, highlighting its widespread fact and identifying several hot spots area. This study demonstrates that combining social media big data with AI processing offers an effective and timely way to identify human migration flows between urban and rural areas, enabling valuable reference for policymakers and the real estate sector.

Keywords:

Big data; ChatGPT; counterurbanisation; China

T.11 EMERGING TECHNOLOGIES / 1727**“UBT SMART City” Model as a Testbed for Emerging Digital Technologies and Transformative Urban Planning****Author:** Edmond Hajrizi¹**Co-authors:** Shqiprim Ahmeti¹; Skender Kosumi¹; Binak Beqaj¹¹ UBT - University for Business and Technology**Corresponding Authors:** shqiprim.ahmeti@ubt-uni.net, ehajrizi@ubt-uni.net, binak.beqaj@ubt-uni.net

Humankind is currently living in a hyper-dynamic and constant transforming environment- in the so called convergence era and 4rth industrial revolution. This level of development requires a complexity-led approach and transformations of our political, societal, economic and technological framework: the way we are living and being educated, creating new jobs and generating sustainable growth, providing security, managing hyper mobility, as well as other development aspects related with our living quality and human values.

“SMART Cities” and its applications represent a high level of complexity, including the skills required for urban solutions based on new models of education, research and policy framework design.

This paper elaborates a specific model named UBT “SMART City” (Small Scale Smart Sustain System) which represents a concept of Entrepreneurial Innovation Ecosystem which could also be used as a TESTBAD for Future and Innovative Urban Planning with a particular focus in education, future planning concepts and emerging technologies.

UBT “SMART City” is the state-of-art Development Program, designed and developed by Prof. Dr. Edmond Hajrizi in Kosovo at University for Business and Technology (UBT), with the aim to modernize and integrate the sustainable and SMART planning, community living standards, advanced technologies, education, innovation and economic and social impact.

UBT Smart “SMART City” is located in an Area of 30.000 m2 and is part of “UBT Innovation Campus” made from different SMART Buildings, Laboratories, Spin Offs, HUBs, Institutes, Research Centers, Clinics, Factories, Schools, Libraries, University and Further Education Structures, Advanced Technologies (5G, ISP, AI, XR, Cyber Technology, Robotics, IoT, Cloud, Laser Technology, Drones, Multimedia, 3D Printing, Super Computer, Big Data Center) etc. The model aims to demonstrate how the essential services related to education, healthcare, infrastructure (energy, water, green-garden, ICT, parking), food, research, trade, community living, administration, sport, mobility, business, media, art and culture can co-live and co-generate in a small and compact area, similar to “15 minutes cities”.

It is to emphasize that “UBT Smart City” incorporates and exemplifies specific key elements that align with SMART sustainable and forward-thinking concepts through urban panning principles while it also serves as a testbed for integrating education, securing development of future and emerging urban practices, including smart Infrastructure, integrated advanced technologies, sustainability practices, Education and Experimentation HUB, Community-Centric Design, Future Urban Planning (Scalability, Resilience, Public Private Partnership, Place-based Innovation Ecosystem, Adaptive urbanism) and Emerging Urban Planning (Digital Twins, Dynamic Land use, Circular Economy, Mobility innovation).

In this model, different methods have been used, including the “Life Cycle based Design” approach which was used to develop the framework of a Small-Scale- Smart and Self-Sustained Systems that guides to the design and evaluation of the UBT SMART City, ensuring it aligns with established system design principles and best practices.

Additionally, the “Design Based Methodology” was used in cases of developing different applications. Though creating/developing the prototypes one can visualize, test and experience different functional systems before their full implementation. UBT “SMART City” also allows making a real time and regular feedback from users and stakeholders. This system also provides possibility to collaborate with users (user-centered design) to ensure that the system meets their needs and expectations. For defining each problem statements, mixed (quantitative and qualitative) methodology approach was applied.

The paper presents the UBT “SMART City” as an advanced model integrating emerging

digital technologies, transformative planning, and spatial systems to develop a sustainable, innovation-driven urban ecosystem that serves as a testbed for future urban solutions, incorporating AI, smart infrastructure, and community-centric design.

Keywords:

Smart Cities; Emerging Technologies; Transformative Urban Planning; Sustainability; Innovation Ecosystem

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T.11 EMERGING TECHNOLOGIES / 1223

Towards a Domain specific LLM for Sustainable Urban Development: Extracting Research trends and topics from Text Data

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The German Federal Ministry for Education and Research (BMBF) funding priority Sustainable Development of Urban Regions, (SURE) is an application-oriented research that supports ten collaborative research projects focused on urban sustainability. The ten collaborative projects aim to develop practical solutions for more sustainable and resilient cities and regions in Southeast Asia and China. The SURE Facilitation and Synthesis Project has one of the main aims to research and employ state-of-the-art technologies and develop digital tools that help to uncover dormant knowledge, identify open questions and problems, and outline solutions and trends for future research on sustainable urban development. This research is a part of a series of experiments aimed at creating a benchmark methodology for identifying Topic clusters and monitoring Research trends in the rapidly growing corpus of texts under the SURE funding initiative.

Topic modeling and extraction is not a new field in synthesis-research, but with the current advancements in LLMs, such processes can as well be advanced with better accuracy and efficiency. Machine based topic/trend extraction has traditionally focused on variations of LSI (Latent Semantic Indexing), LDA (Latent Dirichlet Allocation) (Churchill and Singh 2022) or a simpler keyword evaluation of research papers (Nguyen et al. 2022). During the past decade, however, with the emergence of the word embeddings-based methods, the field of LLMs (Large Language Models) has taken a center stage, and the continuous improvements in these models make them ever more accurate for analysis of texts. In this paper, we explore the application of an LLM based methodology, firstly to validate the domain experts based manual identification of topics and secondly, to create a benchmark method for machine-based extraction of Topics related to sustainable urban development, based on our case studies. The research uses a corpus of documents, including field reports and grant application documents, from the ten SURE-projects, and hence it provides a window into the often-ignored part of applied research like activity reports and other forms of knowledge transfers. The process builds upon established methodology by (Thompson and Mimno 2020) whereby the tokenized text is used to create embeddings with BERT (Bidirectional Encoder Representations from Transformers) (Devlin et al. 2018) to create a vector space. The embeddings are then clustered and labeled according to their semantic similarity (cosine) with domain expert input, which allows a comprehensive view of themes/topics and sub-topics. The results of the approach aim to take a step towards building a domain specific Language Model to synthesize Sustainable Urban Development practices and approaches which can further support decision making and knowledge transfer in applied research projects.

Keywords:

Sustainable Urban Development; Topic Modeling; Large Language Models; Semantic Similarity

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T_11 EMERGING TECHNOLOGIES / 1686

Testing Virtual Reality to communicate long-term scenarios in participatory planning processes

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Collaborative scenario-building is a well-established methodological approach that is particularly effective for anticipating and analysing unexpected long-term futures. It enhances the legitimacy of contemporary decision-making processes by engaging the public and facilitating interactions with other stakeholders (Goodspeed, 2020). Traditionally, future scenarios are communicated through narratives, descriptions, projections, 2D maps, sketches, and spatial simulations. However, these visualisation methods present certain limitations that hinder public engagement. For instance, the visual language of 2D cartography reduces the public's ability to immerse themselves in future scenarios; quantitative projections and diagrams are often too complex for a broader audience; and future-oriented narratives can be too abstract to communicate long-term changes effectively.

To address these challenges, this research integrates Virtual Reality (VR) as an innovative tool for scenario communication, enhancing the public understanding of future scenarios. An experiment was conducted with 60 randomly selected participants to examine public perceptions of VR future scenarios and identify key factors influencing immersive experiences and scenario interpretation. A future scenario called "Urban Dystopia" was 3D-modelled and projected using VR devices. The scenario is shaped by a distressing increase in insecurity in urban areas. High crime and robbery rates have led to a drastic shift in the modal split, with private cars becoming the prevailing choice for daily trips, including commuting, shopping, and leisure activities. Participants engaged with the immersive VR scenario for approximately 15 minutes and then completed a questionnaire covering various thematic sections: (i) socio-economic characteristics & personality statements, (ii) Individuals' VR experience, (iii) scenario design factors, and (iv) scenario perception statements. A total of nine logistic regression models were conducted, each corresponding to a scenario perception statement (dependent variable) included in the questionnaire. Each model used explanatory variables related to socio-economic characteristics, personality statements, scenario design factors, and individuals' VR experience.

The results suggest that certain variables, mainly related to scenario design factors, individuals' VR experience, and socioeconomic characteristics, facilitate a better understanding of the 'Urban Dystopia' scenario. In particular, women and car owners demonstrated a stronger ability to interpret the scenario's characteristics. Similarly, individuals who perceived social problems and insecurity within the 3D scene also exhibited a better understanding of the 'Urban Dystopia' scenario. Additionally, scenario design factors such as the presence of vegetation, building characteristics, and the inclusion of vehicles and people in the scene contributed to higher interpretation scores. Conversely, personality-related variables were not found to significantly enhance scenario interpretation. Overall, VR is recognised as a promising tool for scenario-building applications. The findings provide valuable insights for researchers and policymakers, helping them refine the translation of scenario narratives and 2D maps into 3D scenes. This, in turn, can lead to a more effective interpretation of scenarios by the public, ultimately fostering more efficient collaborative planning processes.

Keywords:

Scenario-planning; virtual reality; collaborative planning; participation

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T_11 EMERGING TECHNOLOGIES / 1655

A Digitalised Tourism Sector: Impact on Occupations and Geographies

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Large cities such as Berlin, Munich and Hamburg are the top German tourist destinations in absolute numbers, with over 26, 16 and 14 million overnight stays respectively in 2022 (INKAR, 2024). However, in terms of relative numbers, the sector of tourism plays a more significant role in less densely populated regions along the country's coastline, in the Alps and in the southwest. In these districts, overnight stays exceed the number of inhabitants up to 40 to 50 times (INKAR, 2024).

This strong representation of the tourism sector is a main driver for economic performance. Coastal districts, for instance, tend to show better economic indicators than their inland neighbours (INKAR, 2024). At the same time, an over-reliance on this sector also creates vulnerabilities (Sarrión-Gavilán et al., 2015, Bei & Celata, 2024). Understanding the spatial implications of labour market trends in tourism is interesting because occupations in this sector are highly susceptible to digitalisation. Research indicates that occupations such as waiters and waitresses, check-in clerks at accommodations, but also tour guides and hosts perform tasks that can easily be automated (Frey & Osborne, 2017).

While digitalisation trends are difficult to translate into simple (one- or two-dimensional) indicators, we can already perceive certain transformation effects in the tourism sector, impacting the labour market. Examples include check-in machines at accommodations or app-based tour guides used by tourists during their visits. Additional indicators related to digitalisation show among others a higher potential exposure of occupations in the tourism sector towards Artificial Intelligence (Felten et al., 2021) and a relatively high share of digital skills needed to conduct their usual tasks (Lennon et al., 2023), even though such exposures are rather moderate when compared to their computerisation potentials.

Our research provides a replicable approach to integrating outputs in the field of research in digitalisation trends with spatial labor market analysis. This is done through a harmonisation of (official) labour market taxonomies and information on digitalisation queried from different sources. The approach is presented on the example of Germany on the district (Kreise) level, with a focus on (rural) touristic regions, where we develop a multi-dimensional measure to describe regional tourism susceptibility to digitalisation. Outputs can be used to interpret the regional vulnerability towards potential job losses, possible needs for further training in the sector (e.g. due to changes in the nature of how tasks are being conducted) and the impact of local economic geographies, aligned with ancillary industries and sectors.

Keywords:

tourism; artificial intelligence; digitalisation; labour market

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T.11 EMERGING TECHNOLOGIES / 1611

Geodesign as a Framework for the Green Transition of University Campuses: Case Studies from University College Dublin and Aarhus University

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The transition toward sustainable, climate-resilient urban environments is one of the critical challenges of the 21st century. University campuses, as microcosms of urban systems, present unique opportunities to prototype and evaluate innovative approaches for the green transition. As hubs of education, research, and community engagement, university campuses are ideally positioned to explore integrative solutions that align with global climate action goals and promote environmental stewardship. This paper investigates the potential of Geodesign as a participatory, data-driven framework for transforming campus spaces to align with sustainability and climate goals.

This study, framed within the EU Horizon 2020 PROBONO project, explores the implementation of Geodesign methods at two university campuses—University College Dublin (UCD) in Ireland and Aarhus University (AU) in Denmark—highlighting the critical role of stakeholder engagement and innovative tools in collaborative design. Both workshops utilised tools such as Cartspot.com, ArcGIS StoryMap, and Geodesignhub.com to support participatory surveys, collaborative mapping, geospatial analysis, and stakeholder negotiations. At UCD, the geodesign workshop titled “Common Ground: Campus, Community, and Climate” focused on campus edge transformations by engaging local community members, city officials, and architecture students. Although an academic exercise, the Geodesign activities served as a reflective passage, enabling participants to rethink and refine design visions for the campus, aligning with the new UCD strategy to 2030 “Breaking Boundaries”. Workshop outcomes informed the design studio work, where undergraduate students were tasked with designing climate pavilions addressing challenges such as campus permeability, housing, and climate resilience.

At AU, the one-day Geodesign workshop titled “AU Viborg Campus Transformation” aimed to support local PROBONO partners in the transformation of the Research Centre Foulum into the AU Viborg Campus. The workshop involved researchers, educators, and community representatives in collaboratively mapping stories and values of the current research centre and strategy development for the new campus. The workshop produced actionable strategies to enhance biodiversity, transportation, and energy efficiency while preserving heritage inside the research centre.

Together, these workshops demonstrated the effectiveness of digital tools and stakeholder engagement in delivering impactful design solutions, with UCD’s process providing a reflective framework to reimagine the campus and AU’s offering a structured, intensive approach for sustainable transition. By comparing these case studies, this paper identifies best practices and transferable insights for deploying Geodesign in campus contexts. The findings underscore the efficacy of participatory frameworks in aligning academic institutions with global climate action objectives, positioning university campuses as exemplars of the green transition. Through the synthesis of pedagogical innovation, stakeholder collaboration, and technological tools, Geodesign emerges as a transformative methodology for addressing spatial, social, and environmental challenges in academia and beyond.

Keywords:

geodesign; green transition; university campuses; participatory frameworks; climate resilience

T.11 EMERGING TECHNOLOGIES / 636

3D Simulations of Urban Planning Regulations: Assessing Regulatory Impacts on Densification and Urban Expansion

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Urban planning regulations are critical policy instruments for managing urban areas, influencing their sustainability, resilience, and equity. In the face of urban crises, such as expansion, housing shortages, and environmental degradation, these regulations can either promote compact, efficient development or contribute to unsustainable growth patterns. While emerging digital technologies, including 3D simulations and scenario-based analysis, present transformative opportunities for urban planning, many urban plans still rely on static 2D maps and PDF documents, which fail to capture the complexity and dynamism of urban systems.

This study develops a dynamic 3D simulation model to analyze the interplay of urban land-use planning regulations, focusing on their roles in densification and urban expansion. Using zoning maps and regulatory texts as input data, first, building regulations are extracted and classified from regulatory documents to simulate 3D buildings at Level of Detail 1 (LOD1). Developable zones are then subdivided into smaller parcels for future development. The classified regulations are applied to each parcel according to its specific zone. Recognizing that building regulations vary in the level of flexibility, multiple regulatory scenarios are simulated to model variations in building form. Finally, these scenarios will be assessed and discussed based on their impacts on densification of built volume and urban expansion.

Sisslerfeld, the largest contiguous development reserve in northwestern Switzerland, is selected as the case study due to its diverse zoning areas and development potential. This site includes diverse zones, including mixed-residential, residential, mixed-business, commercial, and industrial, each regulated by specific building parameters such as plot size, setbacks, Building Coverage Ratio (BCR), Floor Area Ratio (FAR), and building height. To analyze the impact of these regulations on urban form, three scenarios are defined: (1) Current trend of building, which follows existing practices by applying observed BCR and FAR patterns in similar zones. (2) Maximizing FAR and BCR, which evaluates vertical development potential by setting FAR and BCR to their maximum permissible levels and computing the corresponding building height. (3) Maximum volume, which explores the highest development potential by applying maximum values for BCR and building height, regardless of FAR constraints.

Scenario simulations and visualizations are performed at the building level within a 3D environment using ArcGIS Pro. The results of the first scenario reveal how current development preferences influence building dimension and urban form. The second scenario shows how prioritizing horizontal expansion affects building form and urban density. The third scenario demonstrates the potential for urban densification while highlighting possible conflicts with FAR limitations in real-world settings. In addition, comparisons between the scenarios will offer insights into how different regulations and their flexibility influence density of built volume and urban expansion.

This research highlights the transformative potential of computational tools and digital innovations in tackling urban management challenges. By integrating urban planning regulations, 3D modelling and scenario-based analysis, it demonstrates how planners can evaluate the effects of planning policies and navigate trade-offs between densification and urban expansion. These findings emphasize the potential of dynamic,

technology-enabled decision-making frameworks to manage the complexities of urban planning and to develop pathways for adaptive and resilient cities in the face of planetary crises.

Keywords:

3D urban modelling; Planning policies; Building regulations; Scenario analysis.

T_11 EMERGING TECHNOLOGIES / 1553

A Preliminary Research on Innovative Communication Mediums of Design in Participatory Planning and Community Design

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The concept of participatory planning and community design emerged during the 1970s, responding to the growing public awareness of residents' rights and environmental justice issues. Prior to this shift, traditional planning systems, which focused primarily on professional expertise, often excluded non-expert citizens from decision-making processes, leading to suboptimal planning outcomes. In response to the highly technical and institutionalized nature of city planning, scholars, professionals, and citizens advocated for more inclusive planning practices that prioritized public participation. These new approaches aimed to engage a broader range of community members—particularly those without professional training—in shaping urban spaces. By the 2000s, participatory planning and community design had become widely accepted as mainstream approaches in city planning, adopted by both top-down and bottom-up methodologies. However, scholars and professionals have become increasingly aware of certain challenges in the implementation of these practices, particularly in terms of the problematic and often superficial nature of public hearings conducted by governments, as well as the frequent use of two-dimensional maps in participatory workshops, which are often too abstract for non-professionals to fully understand or discuss key concepts like “design” and “planning” (Howard, 2007).

In recent years, rapid technological advancements have led to the growing use of innovative techniques based on mixed reality (XR) and geographic information systems (GIS) in design communication and construction management. These emerging technologies, as communication mediums in design, have prompted scholars and professionals to explore their potential in the context of participatory planning and community design. This exploration aims to address the challenges faced by non-professional individuals in understanding abstract design and planning concepts, especially when conveyed through traditional tools like maps (Rohil et al., 2022; Boos et al., 2023).

Against this backdrop, this research seeks to preliminarily assess the effectiveness of utilizing both innovative design communication mediums—such as XR techniques and GIS—and traditional ones—such as maps and physical models—in participatory planning workshops. Specifically, the study adapts an under-testing system, “torinome,” to facilitate the public discussion process regarding a renovation plan for a block in Keelung, Taiwan, which includes a traditional market and 4- to 5-story apartment buildings. Developed by Prof. Shin Aiba of Tokyo Metropolitan University in collaboration with HoloLab, the “torinome” system enables both professional and non-professional users to effectively communicate their planning ideas through a card game platform. This platform integrates various communication mediums of design, including physical maps, virtual

3D urban models, and virtual 3D models of buildings and facilities that are presented on individual cards embedded with QR codes.

In the participatory planning workshops, participants use the “torinome” application on iPads to view virtual 3D models of the surrounding blocks, projected from a physical map. These 3D models are generated using GIS data from Taiwan’s government database. To emphasize the presence of the traditional market and apartment buildings on the site, tangible 3D printed models of these structures are placed on the map. Participants can discuss their vision for the block by moving the 3D printed building models and adding cards representing new buildings and facilities they prefer. The “torinome” application reads the QR codes on the cards to project the corresponding virtual models. After several rounds of negotiation and repositioning the cards, participants can finalize the renovation plan for the site and save it within the “torinome” system.

Through analyzing participants’ interactions with different communication mediums of design during the workshops, as well as conducting follow-up focus group interviews to gather feedback, this research provides early-stage insights into the potential for integrating innovative communication mediums of design into participatory planning and community design practices.

Keywords:

Communication mediums, map, XR technique, 3D GIS model, participatory planning

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T.11 EMERGING TECHNOLOGIES / 1461

AI-Empowered Research on Healthy Streets: An Iterative Path of Streetscape Perception, Evaluation, and Optimization

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“Healthy Streets” have emerged as a key strategy for enhancing street quality and promoting public health. Within the broad framework of Healthy Streets, this study focuses on their healing qualities and emphasizes healing environments that support attention restoration and emotional recovery. The environments shall improve users’ physical, cognitive, and behavioral health. By utilizing streetscape images and deep-learning-based semantic segmentation models, multiple spatial elements are efficiently extracted and quantified for evaluation metrics. However, existing research primarily focuses on the correlation between spatial elements and healing effects, lacking a systematic exploration of the entire process from perception and evaluation to optimization. Therefore, this study employs LoRA fine-tuning technology in AIGC to develop an iterative path for street quality improvement, aiming to explore how AI technologies can facilitate intelligent and dynamic optimization in Healthy Streets studies.

This study was conducted in the research area of the central region of Haining City, Zhejiang Province, China, covering 52.4 square kilometers. The study area includes diverse

street types and historical and cultural blocks with favorable walking conditions. AI empowerment was reflected in the whole research design and tested in the study area. Streetscape images were collected at 100-meter intervals along the road network. After semantic segmentation of the images with a CNN model, eight metrics—facade diversity, color richness, building enclosure, street height/width ratio, sky openness, green view index, road width, and relative walking width—were calculated across four dimensions regarding user perception (vitality, comfort, nature, and safety). All images were clustered based on index scores and a stratified sample of representative images was selected for the Elo rating system (ELO) scoring to determine the healing scores. An artificial neural network (ANN) model was trained to assess the overall street healing quality, complemented by multiple linear regression (MLR) to analyze the correlation between healing quality and each spatial element. Subsequently, a LoRA fine-tuning model was trained to identify and generate high-healing-level streetscape images. Leveraging the Stable Diffusion model, streetscape images of historical and cultural blocks were optimally redesigned based on the MLR results, and the ANN model was re-applied to evaluate the enhancements in street healing quality across the four user-perception dimensions.

We completed the acquisition and semantic segmentation of 1,851 streetscape images from the observation points throughout central Haining City. A subsequent cluster analysis resulted in four distinct street types based on their characteristics. To ensure robust scoring validity, 200 representative images as training data underwent over 2,500 rounds of ELO scoring by professionals and students. The ANN model predicted the healing quality score with a reasonable accuracy of 76%. The model was then applied to rank the healing qualities of the remaining 1,651 images, with spatial distribution visualized and analyzed using ArcGIS software. Our MLR analysis revealed that 'nature' had the most significant positive impact on healing qualities. Excessive building enclosure in the 'comfort' dimension weakened the healing effect. 'Vitality' had a limited but positive contribution, and higher motorization levels in the 'safety' dimension were linked to noticeable reductions in healing qualities.

This paper innovatively integrates AI technologies into a study of Healthy Streets, establishing an iterative path of "intelligent perception—spatial quality evaluation—rapid response optimization". In the perception stage, visual elements were automatically extracted using CNN-based semantic segmentation. During the evaluation stage, a trained ANN model outperformed traditional machine learning models in both accuracy and efficiency. In the optimization stage, AIGC tools (a LoRA and a Stable Diffusion model) were employed for local redrawing of streetscapes, enabling rapid design iterations and dynamic optimization. The preliminary results demonstrate that AI technologies hold substantial potential for improving street healing quality, particularly regarding visual aesthetics and emotional restoration.

Keywords:

Healthy Streets; Healing Environment; Streetscape Analysis; Deep Learning; AIGC

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T_11 EMERGING TECHNOLOGIES / 1476**Mobility Digital Twin for Public Transportation Planning: Addressing the Challenges of Depopulation and Aging****Author:** Jue Ma¹**Co-authors:** Yanbo Pang¹; Yoshihide Sekimoto¹¹ *The University of Tokyo***Corresponding Authors:** sekimoto@csis.u-tokyo.ac.jp, majue@csis.u-tokyo.ac.jp, pybdtc@csis.u-tokyo.ac.jp

In the era of depopulation and aging, public transportation demand is undergoing profound changes. Urban planning strategies, such as the compact city model, have been proposed to address these challenges by concentrating population and services into denser urban areas (OECD, 2012). While these strategies aim to enhance sustainability and livability, they also alter the spatial distribution of residents, leading to shifts in public transportation demand. These dynamic changes underscore the need for more efficient and intelligent tools to support transportation planning. To address this need, this study develops a digital simulation tool that integrates high-precision mobility data with extensive open spatial datasets, enabling planners to evaluate and predict the costs and impacts of public transportation strategies quickly and affordably.

The tool addresses transportation challenges under depopulation and aging trends through two scenarios. The first scenario evaluates public transportation demand in compact urban centers, where population density is increasing due to compact city policies. We hypothesize that increasing bus service frequency encourages sustainable travel behavior and improves public transportation efficiency. Using GTFS data accessed via API, the tool enables users to edit bus timetables to simulate additional services. To estimate passenger demand, the tool integrates a Pseudo People Flow model (Kashiyama et al., 2024), particularly the activity generation and transportation mode choice module. This approach provides actionable insights into the effectiveness of increasing bus frequency in urban centers.

The second scenario addresses transportation challenges in local areas experiencing population decline and aging. In such areas, traditional bus services may become inefficient, and flexible on-demand transportation solutions offer a practical alternative (Fielbaum, Tirachini and Alonso-Mora, 2024). This scenario assumes that certain bus services can be reduced and replaced with on-demand transport options to better meet passenger demand, particularly benefiting older adults with limited mobility. Using the synthetic human mobility dataset, the tool identifies affected passengers and reallocates demand to the proposed on-demand system. Simulations compare revenue and cost outcomes between the current bus system and on-demand services, while customizable parameters allow for refined calculations tailored to local conditions.

Implemented as a web application, the tool can be used nationwide across Japan. Preliminary user tests demonstrate its potential to support public transportation planning by providing actionable insights into the financial and operational impacts. This research represents an innovative application of digital technologies in spatial planning, addressing the dual challenges of depopulation and aging populations. By combining high-precision mobility data with customizable simulation tools, the study contributes to the development of efficient, sustainable, and inclusive urban mobility systems. Future work will focus on expanding the tool's capabilities and incorporating additional scenarios to enhance its applicability to diverse urban and regional contexts.

Keywords:

Mobility digital twin; Public transportation planning; Urban simulation; Depopulation

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T_11 EMERGING TECHNOLOGIES / 1358

Emerging Tools for Urban Climate Governance: Decoding Public Participation in Serious Games

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In an era of planetary crises, urban planning and design face immense challenges as cities become both contributors to and victims of climate change. Addressing these challenges requires innovative tools and frameworks, particularly within urban climate governance—a multi-level system engaging local governments, civil society, private sectors, and residents (Sarzynski, 2015; Hügel & Davies 2020). Public participation (PP) is critical to urban climate governance, fostering inclusive decision-making, enhancing social awareness, and encouraging community-driven action (Sousa et al., 2022; Schalbetter et al., 2023). Recently, serious games, designed for purposes beyond entertainment such as education and problem-solving, have emerged as promising tools for engaging the public in urban climate initiatives. These gamified systems offer interactive platforms that enhance awareness and support collaborative decision-making, aligning with urban climate governance objectives.

This study investigates the potential of climate-focused serious games as emerging tools within urban planning and design processes, specifically decoding their role in engaging public participation and improving decision-making. By analyzing serious games that simulate urban climate scenarios, the research examines how these platforms empower communities, influence policymaking, and bridge the gap between technical climate science and public understanding. It raises critical questions about the effectiveness, inclusivity, and policy relevance of serious games as participatory tools.

The research employed a four-step methodological framework combining qualitative and quantitative approaches: (1) Filtering and Sampling: From an initial pool of 170 games identified via Scopus and Games4Sustainability, 10 serious games (board and digital) were selected, including Plan It Green: Big Switch, Riskland, Landopoly, About that Forest, Play the City, Cultural Memory Game, City Council, Cities Skylines, SimCity, and Urban Climate Architect (Haahtela et al., 2015; Sharma & Pandey, 2022; Paredes & Gómez, 2023; URL). (2) Defining PP Evaluation Criteria: Using Arnstein's Ladder of Citizen Participation (1969) as a foundation, four criteria were established for evaluating PP: Collaborative decision-making, environmental awareness, decision-making consequences, and community impact feedback. (3) Scoring System: An analytical hierarchy process (AHP) was applied to assign weightings to each criterion, guiding the evaluation of the selected games. (4) Evaluation: The games were assessed against these criteria to determine their capacity to engage diverse stakeholders.

Key findings highlighted that multiplayer serious games promoted collaborative problem-solving and encouraged dialogue among the stakeholders. Multiplayer board games like Landopoly, City Council, and Play the City, excelled in fostering collaborative decision-making, encouraging dialogue among diverse stakeholders. However, single-player digital games generally fell short in this area, offering limited opportunities for meaningful collaboration. Informative content within games significantly enhanced environmental awareness, engaging players in understanding climate challenges and

solutions. Digital games with feedback mechanisms—simulating the societal impact of player decisions—proved effective in engaging participants and enhancing PP. Nevertheless, the simplification of complex socio-environmental dynamics in many game designs raised concerns about translating game-based insights into real-world decision-making.

In conclusion, this study contributes to the growing field of climate gamification by proposing a structured evaluation system for assessing public participation in serious games and highlighting their potential within urban planning and design. While serious games offer valuable opportunities for experiential learning and interactive engagement, optimising their design for greater inclusivity and real-world applicability is essential.

Keywords:

Climate governance; Public participation; Serious games; Urban climate; Urban design.

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T.11 EMERGING TECHNOLOGIES / 140

Using artificial intelligence to analyse the role of multi-level strategic spatial planning in the development of operational landscapes

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Worldwide, there is an unprecedented rise in demand for space dedicated to production, transportation, and storage of goods. Urban theorist Neil Brenner (2019) proposed the overarching term operational landscapes to capture the dynamic nature of these spaces and their increasing role in defining urban and peri-urban areas. Studies on the spatial (land) transformation entailed by operational landscapes is a part of a broader 'turn' of

urban studies which go beyond the distinction between urban and non-urban. Development of operational landscapes has been described as a result of coalitions of governmental and nongovernmental actors with a common interest in economic growth (Nefs and Daamen, 2022). These actors work together across multiple scales, creating 'soft spaces' by using various planning instruments and governance mechanisms (Allmendinger and Haughton, 2009). This study contributes to debates on how governments, particularly embedded in multi-level governance systems, influence the development of operational landscapes.

Using Romania as a study area, we determine if and how the development of operational landscapes is driven by planning at local, county and regional level. Our focus is on 32 cases of operational landscapes developed after 2009. Generative artificial intelligence, specifically ChatGPT, is used to analyse strategic planning documents adopted at the three up mentioned planning levels. Recent developments in generative artificial intelligence (AI) have simplified its use for a range of users, including document analysis. We developed a two-steps procedure to a) analyse the documents using a combined use of ChatGPT and coding of the prompts by the authors and b) validate the results to ensure reliability. Considering the size of the 81 analysed documents, i.e., each having between 100 and 500 pages of text, tables and visualizations, the procedure allows for a fast analysis of large amounts of data.

Results reveal broadly two approaches used by governments in development of operational landscapes. First, which we call "strategic approach", includes cases where governments, alone or in coalitions with private actors, proactively develop operational landscapes, setting planning goals in this regard and collaborating across levels from local to regional. Second, titled the "opportunistic approach", refers to situations where governments react to initiatives of private investors.

The contribution of our study is twofold: it provides empirical evidence on the role of governments in development of operational landscapes, and it illustrates how generative artificial intelligence can be used to enhance our understanding of spatial processes.

Keywords:

logistics, strategic planning, ChatGPT, artificial intelligence

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T_11 EMERGING TECHNOLOGIES / 1799

Reframing Urban Narratives: AI, Digital Innovation, and the Role of Intelligent Adaptation in Just and Equitable Planning

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Spatial government and planning are tools for implementing and safeguarding increasingly complex and globally interconnected systems. These processes use new systems for mapping, monitoring, and communicating spatial information, which can integrate territories, cities, and societies based on scaling processes and digital innovation flows.

The increasing complexity of global emergencies invites urbanism to explicitly re-evaluate its methodological and applicative contribution to urban and territorial transformation processes. Moreover, the intertwining of climate crisis and social inequalities increasingly calls for innovative and flexible interventions capable of dialoguing with the most advanced systems of cognitive automation and computational capacity. Hence, the need for a new urban paradigm emerges, capable of anchoring spatial models and settlement strategies to technologically advanced and/or emerging solutions. This new paradigm inevitably recalls the concept of 'intelligent adaptation', promoting design actions built based on natural languages typical of artificial intelligence (AI).

This contribution aims to deepen and discuss the relationship between spatial planning and new technologies, with a particular focus on the use of information and digital technologies in sustainable land management and development processes.

The contribution will address these issues from two distinct but integrated perspectives.

The first perspective will be mainly related to collecting and processing large information flows derived from the increasing use of physical and virtual components. The paper will explore the importance of adapting cities to increasing climate risks, which are considered more frequent and intense due to ongoing climate change. As central nodes of economic and social life, cities are particularly vulnerable and require a proactive and adaptive planning approach. The need to expand urban knowledge frameworks with greater detail, which helps manage risks and design resilient adaptation strategies, is explored. Specifically, this first part considers the application of digital technologies at the service of smart cities and territories. These are particularly useful in analysis and monitoring, especially in adaptation processes at different scales.

The second perspective will attempt to understand the analytical and organisational advantages that generative models bring to spatial planning and governance activities. To this end, some contemporary spatial planning issues will be examined where AI is already making relevant contributions.

This proposal offers a focal point to build an interdisciplinary debate on semantic and technical interoperability between AI and spatial planning. In the face of this growing complexity, modern computer algorithms could be fundamental in responding to emerging management needs. Today, the planning horizon of AI enables the analysis of complex data in real-time, optimising the management of local resources and improving the resilience of cities in the face of catastrophic events. As proof of this, the use of predictive models powered by machine learning techniques is accelerating the adaptive capacity of settlement systems, making decision-making processes more responsive and customised to the specific needs of each territory. MV is not limited to the restitution of a diagnostic or decision-support process but can become an accurate operational tool for implementing design solutions. MV can help identify opportunities for intervention, directing design action towards strategies that can at least mitigate vulnerabilities.

Keywords:

Intelligent Adaptation; Digital Innovation; Resilient Cities;

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T_11 EMERGING TECHNOLOGIES / 445

PC-GAN: A Hybrid Pix2pix-CycleGAN Framework for Low-Carbon Urban Morphology Optimization

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Optimizing urban morphology is a pivotal strategy for reducing carbon emissions, thereby fostering sustainable urban development (Gurney et al., 2015). In this context, human-machine collaboration significantly enhances the efficiency and scientific rigor of urban morphological design. However, traditional methods often rely on post-evaluation processes, which are inefficient and fail to support goal-oriented, creative design solutions directly (Yuan et al., 2021). The advent of generative algorithms presents a transformative opportunity to advance these workflows (Zhou et al., 2023), thereby integrating technological innovation into the optimization of urban morphology.

To this end, this study develops an automated block design tool based on deep generative methods, termed the PC-GAN model, aimed at providing precise and efficient design schemes for carbon emission reduction in urban development. The PC-GAN model builds upon the single-step Pix2pix network architecture by integrating a two-step generative adversarial network (GAN) mechanism that incorporates the CycleGAN framework. This hybrid approach leverages the strengths of both models: Pix2pix effectively captures the nonlinear regression relationships between input conditions and output urban morphology, while CycleGAN enhances clarity restoration and optimizes the morphology of specific elements. By generating high-resolution, three-dimensional urban morphology schemes that establish a direct correspondence between urban morphology and carbon emissions, the model facilitates automated optimization tailored to specific climatic conditions, architectural styles, and carbon emission reduction targets. The PC-GAN model enables the rapid generation of carbon-efficient urban designs in the initial stages of planning while offering creative flexibility, allowing urban planners to explore diverse configurations aligned with carbon reduction goals (see Fig. 1 for the detailed technical workflow).

To further investigate the relationship between urban morphology and carbon emissions, this study utilizes the Local Climate Zone (LCZ) classification system to analyze urban blocks in Guangzhou. The LCZ system, which categorizes urban areas based on land use, morphology, and climatic factors, provides a framework for identifying carbon emission differences across zones. This classification facilitates the precise identification of differences in carbon emission optimization across zones, providing scientific support for targeted carbon emission reduction strategies. The study focuses on three representative LCZ types—LCZ4, LCZ5, and LCZ6—and develops iterative urban morphology optimization schemes with a 1% stepwise reduction in baseline carbon emissions.

Experimental results demonstrate that the PC-GAN model exhibits exceptional performance in both generation accuracy and carbon emission prediction. Specifically, the structural similarity index (SSIM) of the generated images reaches 0.87, and the coefficient of determination (R^2) for carbon emission prediction achieves 0.90. In comparison, the traditional Pix2pix model attained an SSIM of 0.82 and an R^2 of 0.86. The PC-GAN model significantly enhances generation accuracy and adaptability in complex urban environments, particularly in generating key elements such as building layouts, green spaces, and impervious surfaces. Furthermore, the stepwise 1% iterative optimization method reveals distinct carbon emission optimization characteristics across different LCZ types, thereby providing robust support for developing region-specific carbon emission reduction strategies.

In conclusion, the PC-GAN-driven automated block design tool demonstrates high efficiency, precision, and superior texture generation capabilities, thereby significantly enhancing the quality of urban planning and design. This tool offers an innovative technological solution for carbon emission optimization and reduction, advancing the implementation of carbon emission reduction urban design concepts and providing new directions and frameworks for future urban morphology optimization. Furthermore,

it provides methodological and technical framework references for optimizing other urban objectives, such as urban cooling.

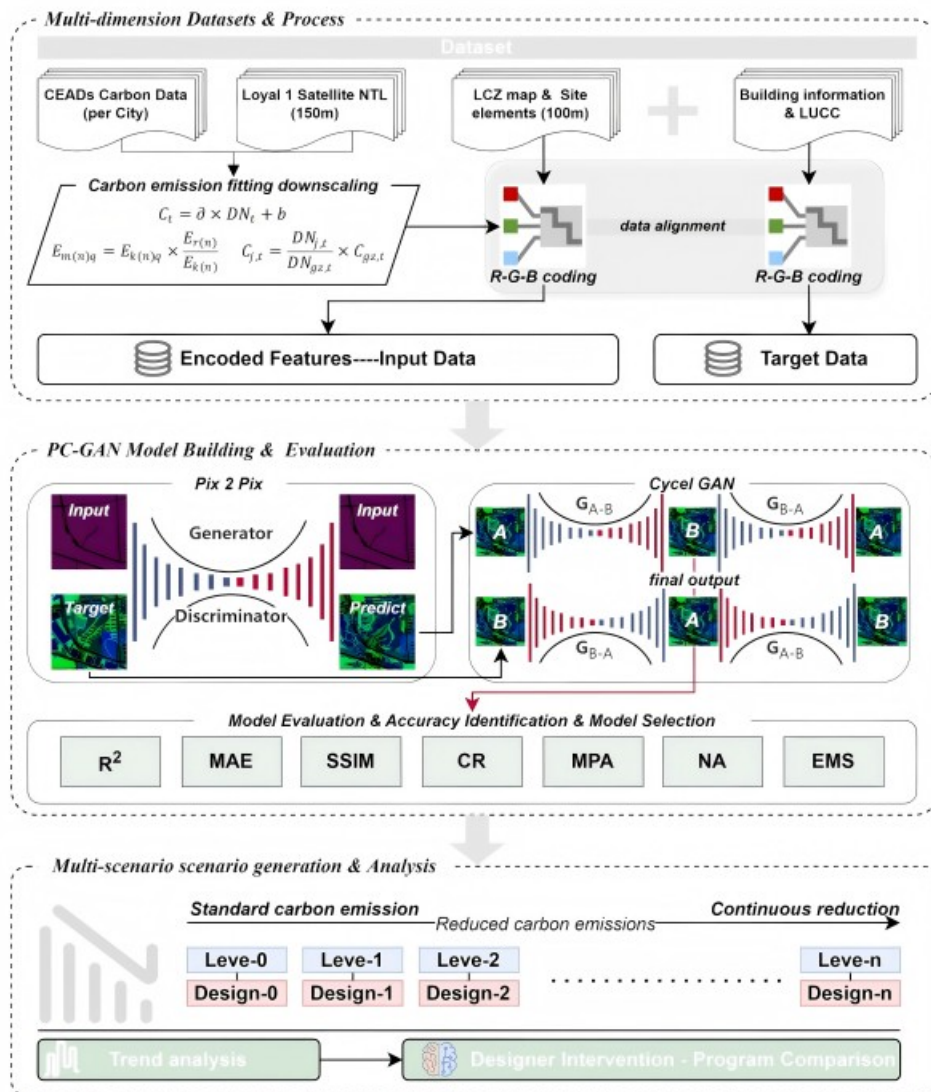


Figure 2: Fig 1. Technological process

Keywords:

Carbon emission; Urban morphology; GAN; Human-Machine collaboration; Guangzhou

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Unraveling the Complexity of Urban Functional Organization Based on Explainable GeoAI

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With the expansion of urban scales and the increasing intricacy of urban population composition, the organization of urban functions and the formation of sub-markets have become increasingly diverse and complex, driven by the growing diversity of urban living demands. Traditional land use strategies are increasingly challenged, and the interplay effects among multiple-function combinations are deemed to play a crucial role. The emergence of Geo AI and explainable AI has provided promising approaches to deciphering the underlying patterns and emergent phenomena in complex urban functional organizations. This study employs an explainable graph neural networks model to uncover the interactions among urban functions along the spatial structure. It conducts a spatially explicit analysis of the importance differences of various functional elements based on the connectivity of the road street network, revealing to urban planners which functional combinations are essential and which can be substituted. Additionally, this study proposes a working framework for integrating the expertise of urban professionals with machine intelligence, playing a key role in the future intelligent development of cities.

Keywords:

Explainable Neural Network; GeoAI; functional organization;

T_11 EMERGING TECHNOLOGIES / 1252

Geodesign for climate neutrality: contributing to Regional Climate Adaptation Strategies in Italy.

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Global mainstream policies on climate change mitigation and adaptation identify local green transition as a key component for achieving global objectives. The success of adaptation strategies depends on the active and continuous involvement of stakeholders, including national, regional, international organizations, private sectors, and civil society (Howarth et al. 2024). These stakeholders, who operate within a territorial context, influence decisions and are influenced by them (Hemmati et al. 2012). In practice, climate adaptation is not the primary objective of regional planning (Ford et al. 2011). Developing adaptation plans is a complex task both in terms of information processing and the process itself. The consequences of climate change are uncertain, multi-scale, multi-sectoral, and controversial (Howe et al. 2019). Although the adaptation process involves stakeholders with diverse expertise to build robust knowledge frameworks, spatial information plays a role in the strategic design (Wilson 2006). This research, funded in the GD_CURE Italian National Research Project, contributes methodologically and operationally to the development of a Regional Climate Change

Adaptation Strategy, focusing on the Basilicata Region case study. The study contextualizes global climate objectives at the local scale, in alignment with the governance frameworks defined by the Italian National Climate Adaptation Strategy (SNAC). Through a participatory process that enhances territorial governance in a co-design perspective, the research defines tools to support the decision-making process and the operational implementation of adaptation and climate mitigation measures at the regional scale. The workshop applies the Geodesign method, using a structured and iterative process to support decision-making. Geodesign adopts a systems-based approach to analyze inter-systemic interactions across different spatial and temporal scales (Steinitz 2012). This multidisciplinary approach is crucial for overcoming silo-mentality traditionally found between government, industry, academia, and communities (Campagna et al. 2016) (Pettit et al. 2019). Furthermore, the iterative framework of Geodesign provides a flexible tool to address the challenges posed by climate change (Steinitz et al. 2023).

The study presents a preliminary selection and evaluation of actions compatible with the territorial characteristics of Basilicata, referring to the eight systems defined by the IGC Global challenge (Steinitz et al. 2023). These actions were analyzed by identifying climate benefits, performance indicators, implementation cost, and the scale of implementation. Moreover, the importance of defining the budget and allocating resources, promoted by structural funds used to finance projects and interventions in European regions, was emphasized focusing on effective resource allocation criteria (Casas and Scorza 2016).

The goal of the workshop was to provide an open platform to policymakers, public authorities, academics, and territorial professionals, promoting strategic innovations in the green transition of urban and regional areas. This approach facilitated the construction of a shared strategic framework, useful for mapping and consolidating resource allocation toward concrete, targeted actions for climate adaptation and mitigation (Barr 2010). The workshop involved young researchers in climate governance, master's students in environmental engineering, technical representatives from major administrations, professionals in territorial disciplines, and nonprofit organizations active in the regional context. Participants highlighted the usefulness of innovative tools developed, emphasizing the effectiveness of the "learning by doing" approach.

This research highlights how Geodesign, is an useful decision support tool in climate adaptation at the regional level. Integrating spatial analysis, participatory governance, and strategic vision enables the contextualization of global climate objectives at the local scale. Geodesign offers policymakers a robust operational framework for developing resilient and sustainable plans, addressing climate challenges in an integrated and coherent manner. Moreover, the study emphasizes the importance of open platforms and the adoption of local policies, creating a scalable model for other regions aligning their climate actions with international commitments.

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T_11 EMERGING TECHNOLOGIES / 1131**Digitalization, Culture, and Urban Space Interaction: A Design Fiction Approach****Author:** Zeynep Gülce Aydın¹**Co-author:** Fatih Terzi ¹¹ *Istanbul Technical University***Corresponding Authors:** gulceaydinb@gmail.com, terzifati@itu.edu.tr

Digital environments, which entered our lives in the 1990s and have become increasingly widespread, have profoundly affected social norms and the relationship between people and the artificial products of digital integration. Digitalization has radically changed our communication habits, with face-to-face interactions gradually being replaced by digital platforms. E-mail, online chat rooms, and social media have slowly diminished the importance of physical space, gradually shifting relationships to a virtual ground in specific contexts. In addition, the rise of e-commerce platforms, the emergence of virtual galleries and museums, and the proliferation of online education platforms have transformed traditional experiences, replacing physical activities with digital ones.

This process has blurred the boundaries between the virtual and physical worlds, transforming individuals' perceptions of identity and modes of social interaction. Digitalization is not only restructuring individual lives but also redefining the use of public spaces and the organization of urban environments. The digital age is fundamentally transforming the relationship between urban spaces, cultural practices, and social interactions. Technological advancements are blurring the boundaries between physical and digital environments and reshaping urban spaces.

The aim of this study is to analyze the impact of digital technologies on the reconfiguration of urban and public spaces as well as cultural practices. It examines the hybridization of physical and digital environments in shaping urban dynamics and evaluates their potential to address future urban challenges. The research will employ a mixed-methods approach, including the "design fiction scenario-based survey" technique, to model the potential impacts of digitalization on urban spaces. Advanced analytical tools such as Multiple Correspondence Analysis (MCA) and Maxqda will be used to uncover trends in the intersection of digital and physical environments. The methodology will provide a speculative yet grounded urban transition perspective, allowing for an understanding of the transformative effects of digital technologies on urban life and the exploration of possible future scenarios. These findings aim to offer insights for urban planners, policymakers, and urban researchers to foster a sustainable and inclusive urban future.

Keywords:

Digitalization; Urban Space; Culture; Design Fiction; Virtual/Hybrid Space; Scenario-Based Research

T_11 EMERGING TECHNOLOGIES / 618**Unraveling the relationship between the digital platforms and gentrification: Evidence from Nanjing, China**

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Driven by information technology, digital platforms are increasingly integrated into urban life through navigation services, social connections, and consumer services, leading to profound transformations in urban and social spaces. These changes are also closely linked to the gentrification process.

Taking Weibo, one of China's most popular social media platforms, this study aims to explore the relationship between digital platforms and physical spaces, and their connection to gentrification. Using Nanjing's main urban area as a case study, this research analyzes transaction data from second-hand housing platforms (Beike) and Weibo check-in data from 2019 to 2024. The study first measures the stages of gentrification in different communities, then employs spatial autocorrelation, cluster analysis, and regression analysis to examine the relationship between Weibo check-in activities and gentrification. The study further illustrates the role of digital platforms in the gentrification process in the information era and proposes strategies for addressing its challenges.

The results show a significant correlation between gentrification levels and the intensity of social media check-in activities. Communities near commercial centers, business hubs, tourist attractions, and university districts exhibit "high-high" clusters of gentrification, characterized by both high gentrification levels and active check-in behavior. In contrast, peripheral urban areas display "low-low" clusters, reflecting low levels of both gentrification and digital activity. Regression analysis further demonstrates that, in addition to traditional factors influencing gentrification, community gentrification stages are strongly associated with check-in activity intensity within residential, commercial, and public service areas. Notably, the activities of non-local users, KOLs (Key Opinion Leaders), and KOCs (Key Opinion Consumers) have a greater impact on gentrification than those of local users or other groups. The findings suggest that informational capital transcends spatial and temporal boundaries, commodifying potential urban spaces. Through algorithmic mechanisms, platforms guide users to link textual and visual content to specific physical locations. Through 'discursive investing', this process attracts individuals or investors with similar tastes to certain communities, accelerating gentrification in these areas.

This study provides a new perspective on gentrification research in the Global South in the digital age, offering sight into how activities in digital platforms reshape the communities and highlight their role as potential amplifiers of inequality. It emphasizes the need for urban governance policies to consider the impact of digital platform activities on community changes, especially regarding population structure and the potential for gentrification. Furthermore, effective measures should be implemented to regulate digital platform algorithms and content to prevent widening inequality among communities and to promote spatial justice in the digital age.

Keywords:

gentrification; digital platforms; social media; Spatial Justice

T_11 EMERGING TECHNOLOGIES / 767

The digital transformation of planning: how data and algorithms are changing spatial planning practice

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The field of spatial planning is currently experiencing a profound shift driven by technological advancements, known as the digital transformation of planning. This transformative process has the potential to reshape the very essence of planning practice and the way it delivers fundamental values, including equity, social justice, transparency, and efficiency (Hersperger et al., 2022). Despite documented awareness of digital transformation in the planning community, there is a lack of knowledge that could support practitioners in navigating this transformative journey and guide researchers in analyzing the digitalization of planning. Eminent scholars point out that the digital transformation is largely technology-driven (Kitchin et al., 2021; Boland et al., 2021). This raises questions about the nature of digital planning and the extent to which planning should become computationally codified and automated and ultimately develop into a post-political practice. These questions will become more pressing as the political pressure to adopt digital technologies intensifies. The necessary foundations for approaching them are lacking, as most research to date has focused on the development of new technological tools and digital data including planning support systems, digital-co-production platforms, digital plan data and methods in urban analytics. The restructuring of relationships within planning practice resulting from the complex interplay between digital technology and people has however been neglected. With this research we are contributing towards closing this gap.

To understand the digital transformation of planning, a focus on what happens in planning practice –what planners do –is warranted. Only a close look at individual actions in practice can reveal the distinct changes associated with the gradual, slow, and ongoing digitalization that planning is experiencing (Christmann and Schinagl, 2023). However, planning practice is poorly understood, mostly because of a lack of theories as well as a paucity of empirical research, leaving the daily routines and practices of planners largely unexplored (Forester, 2023). There are many ways to break down the complexity of planning practice for analysis. Since it is expected that the effects of digitalization will be particularly prominent in the technologically mediated interaction between public officials and citizens and in evidence-based decision-making, we pursue a breakdown toward this. Thus, and drawing from literature on the planning-technology nexus, on digital technologies and data, and on spatial planning practice, we propose four inter-related core concepts of planning practice in which digitalization manifests itself, i.e., encounter, discretion, representation and domain integration. Encounters relate to the interaction between citizens and public officials that are increasingly mediated through digital portals. Discretion denotes the degrees of freedom planners experience in micro-level decision-making that can be affected using digital tools and algorithms in decision support. The representation of plans and environments refers to means that change from analog forms to increasingly complex digital ones, including city information models and virtual reality experiences, with issues regarding standardization and data analytics, among others. Domain integration highlights the increasing emphasis on integrating different environmental and social policy concerns within coherent spatial frameworks and domain specific data, involving technology-supported evidence-based planning, often in planning support systems and data analytics. We outline an interdisciplinary research approach currently conducted with the support of an SNSF Advanced Grant to understand how digitalization changes planning practice in these core concepts. The aim is to develop a theoretical model that will explain how the use of digital technologies in daily practice alter actor's relationships, planning processes and outcomes. We expect that this will contribute towards effectively and critically supporting the digital transformation of spatial planning.

Keywords:

land-use planning; digitalization; theoretical model; planning values

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T.11 EMERGING TECHNOLOGIES / 1054

Effective Monitoring and Evaluation for Digital Twins

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With any innovative technological development and application, the “monitoring and evaluation” of impact is essential. Regarding the emerging area of urban “Digital Twins”, this is even more critical as citizens should and are at the centre of this innovation, and their collaborative engagement and “buy in” will ensure the successfully delivery. It is widely accepted in all fields of study that to understand and assess impact, a framework approach is preferable, and no more so that with monitoring and evaluation.

In recent years, significant advancements in the development of an applied Monitoring and Evaluation (M&E) Framework to assess impact within the context of Digital Twins, have been achieved, and through ongoing applied projects, this is moving at pace to deliver success. This framework can provide a crucial assessment mechanism for innovative technological specially against the aims and objectives of the initiative, project, etc. An robust and evidence-based M&E Framework will ensure the outcomes remain relevant and impactful to the stakeholders, end-users and the community as a whole, allowing for the equipping of all with relevant information cultivated through the continuous M&E of real-time progress. This places stakeholders, end-users and community in the advantaged position of being able to make informed decisions and implement timely interventions. Additionally, M&E works as a vital mechanism in the assessment of risk which ensures any project’s success is adequately safeguarded against unforeseen challenges. This highlights the role of M&E in navigating the inherently complex nature of urban development and ensures project resilience.

A robust M&E framework requires a distinct understanding among all regarding the purpose and objectives of the project at hand. It is paramount to a project’s success that all key actors hold a clear understanding of the goals they wish to achieve throughout a project’s duration and beyond. Such goals should be clear, defined and measurable whilst also in alignment with the central vision of a project. In this way, communication should be a priority during both the framework’s development and application phases. An M&E Framework should maintain a form that allows for flexibility and adaptability to accommodate contextual changes that may arise throughout the project’s lifespan. In this way, M&E is seen to facilitate the continuous improvement and refinement of the project whilst also showing a commitment to an approach characterised by integrity.

To allow for any type of M&E to determine impact, the establishment of “Key Performance Indicators” (KPIs), both quantitative and qualitative in type, are needed. The use of a Multi-Criteria Analysis approach can significant enhance and prioritise development of these KPIs.

This presentation will set out the components and workings of an applied M&E Framework, particularly through the lens of the applied research three-year (2024-2026) project titled Building Intelligent Positive Energy Districts (BIPED) (<https://www.bi-ped.eu/>), funded under the European Union Horizon Europe Research and Innovation Programme. The project is focused on a new solution to “fast-track” energy transition. Within BIPED, Positive Energy Districts (PEDs) are urban areas where energy produced is the same as, or greater than, energy consumed. The BIPED project is building intelligent PEDs to assist urban area/cities with decarbonisation efforts aimed at reaching net zero by 2030 through the development and application of a “Digital Twin” for the city of Aarhus, Denmark. PEDs are a key building block in the future energy paradigm for carbon-neutral cities and communities. With the rise of modern technology, PED

development is set to evolve towards a more agile arrangement in which decisions are first tested and fine-tuned in virtual environments before they are deployed on the ground.

Keywords:

Digital Twins, Monitoring, Evaluation, Impact, Urban Planning, Key Performance Indicators,

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T.11 EMERGING TECHNOLOGIES / 790

Advanced Quantification of Urban Complexity and Adaptive Capacity: Sub-Fractal Analysis and Spatial Statistics in İzmir

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This study focuses on urban complexity and adaptive capacity, employing sub-fractal analysis, Geographic Information Systems (GIS), and spatial statistical tools to investigate interactions between urban expansion and planning strategies. By examining the

case of İzmir, the research traces the temporal evolution of urban complexity and evaluates the influence of major planning interventions enacted between 1955 and 2012. Fractal analysis serves as the core methodological approach, adept at quantifying the irregular and fragmented morphologies characteristic of urban systems. This study utilized digitized historical topographic maps of İzmir to reconstruct the city's transportation networks and assess their hierarchical organization. These findings, combined with GIS-based spatial statistical methods like hot-spot analysis, provide a detailed perspective on the spatial variability of urban growth. The results illuminate how specific planning interventions, such as the establishment of transportation corridors and the promotion of mixed-use developments, have significantly shaped urban complexity. The study extends these analytical approaches by conducting a longitudinal comparison of urban dynamics over several decades. This expanded temporal lens reveals not only the immediate impacts of planning interventions but also their cascading effects on urban form and function. By employing advanced fractal metrics, the research elucidates how the morphology of urban systems evolves in response to policy-driven structural changes, highlighting critical thresholds where adaptive capacity is either bolstered or compromised.

Pivotal contribution of this research is the conceptualization of the Adaptation Capacity Range (ACR), an innovative metric designed to measure an urban system's resilience and its ability to maintain essential functions while adapting to disruptive changes. The ACR framework provides planners with actionable insights by linking measures of complexity to systemic resilience, offering a data-driven foundation for formulating sustainable planning strategies. This metric also identifies critical thresholds, beyond which urban systems face heightened risks of functional collapse, underscoring the necessity for strategic, evidence-based interventions to enhance adaptability.

In addition to ACR metric, study develops a suite of complementary indicators that quantify key dimensions of urban resilience, including network connectivity, land-use diversity, and spatial equity. These indicators collectively offer a nuanced understanding of the factors that underpin adaptive capacity, enabling a more granular analysis of how planning decisions influence urban systems. For instance, the research examines the spatial distribution of critical infrastructure and its relationship to both local and systemic resilience, providing new insights into the interplay between urban form and function.

The study addresses the unintended consequences of planning decisions, revealing instances where interventions constrained complexity or diminished adaptability. By identifying these challenges, the research emphasizes the importance of adopting holistic, forward-thinking approaches to urban planning that mitigate potential vulnerabilities. For example, the research demonstrates how certain land-use allocations, while optimizing for short-term growth, inadvertently create rigidity in the urban fabric that undermines long-term resilience.

This work situates itself within the broader discourse on urban studies, advancing theoretical and methodological frameworks for assessing urban complexity and resilience. The insights derived from İzmir's case study contribute to a replicable model for other urban contexts, highlighting the interplay between strategic planning and the dynamic evolution of urban systems. Moreover, the findings align with global imperatives to design sustainable and resilient urban environments.

In conclusion, the case of İzmir demonstrates how advanced analytical methods can be harnessed to reveal nuanced insights into urban complexity and resilience. By combining fractal analysis with spatial statistics and GIS technologies, the research presents a comprehensive methodology for evaluating the adaptive capacity of urban systems. This integrative approach positions the study as a significant contribution to the field of urban studies, offering both theoretical advancements and practical implications for shaping sustainable, resilient, and adaptive cities in the face of rapid global change.

Keywords:

Complexity, fractal analysis, adaptive capacity, sub-fractal analysis, GIS, urban development.

A multiscale spatial approach to Climate Planning

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Climate planning is commonly understood as consisting in two main components: adaptation and mitigation. Adaptation deals with anticipating adverse climate effects and plan actions for minimising adverse impacts. Mitigation focuses on minimising climate change impacts by reducing the balance of Green House Gases (GHG) in the atmosphere, either by reducing emissions and by enhancing the capacity of natural systems of sequestering carbon. While climate adaptation is mostly local and urgent for enhancing urban systems resilience in the short term, mitigation addresses a global phenomenon and accordingly should be treated based on globally and locally coordinated efforts. The spatial dimension of planning is of utmost relevance in both cases, and the two type of planning should be coordinated (Howarth and Robinson, 2024). Nevertheless, while local short-term adaptation is better understood (UN-Habitat, 2014) and applied, climate mitigation planning is less understood and practiced and local endeavours may have little effect without global coordination. In this sense, this contribution proposes the application of geodesign methods and tools to address multi-scale collaborative climate spatial planning. Results of on-going research include the construction of a global-local spatial database, the creation of web-based interactive planning support tools and impact models, and the experimentation of multi-stakeholder's strategic collaborative climate planning workshops at the regional (i.e. Sardinia, Italy), national (i.e. Italy), supra-national (i.e. the Mediterranean) level. The results of the research shed light on the relationships among multi-scale climate planning aiming at understanding to what extent the methodology and relevant enabling technologies can provide support for a global governance for climate mitigation planning.

Keywords:

climate planning; geodesign; spatial governance; co-design; planning support systems;

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Intelligent Urban Design: Self-organized Block Form Generation Using Reinforcement Learning—An Empirical Study from Nanjing, China

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With the rapid development of artificial intelligence technologies, intelligent design has become a popular research approach in recent years, enhancing design diversity, flexibility, and efficiency through intelligent algorithms. The self-organized design of block forms is a key component of intelligent urban design, aiming to optimize urban spatial layouts through adaptive mechanisms and algorithmic optimization. Based on the theory of spatial self-organization, this paper proposes a reinforcement learning-based method for the self-organized generation of block forms, enabling the system to learn optimal strategies through interaction with the environment.

This study consists of three parts. First, using Nanjing, China, as a case study, geometric calculations are applied to extract the spatial topological relationships of block forms, which are stored in a design prototype database. Building upon this, a reinforcement learning algorithm is introduced with a reward mechanism during the design process, considering various design constraints in urban space, such as development intensity, building density, building height, and green space ratio, to establish a self-organized design framework for block forms. Finally, three representative urban blocks in Nanjing are selected for generative design experiments. Based on real-time feedback from the reward function, dynamic adjustments and optimizations are made to the block forms, achieving a comprehensive optimization of economic, ecological, and social benefits while meeting design constraints. Unlike traditional rule-driven design methods, the approach used in this study involves the iterative testing and optimization process of the reinforcement learning model, allowing block form generation to not only adapt to the current environment but also evolve over time to address potential future demand changes. The effectiveness of this method is validated through a specific case study in Nanjing, providing new technical support for future intelligent urban design.

Keywords:

Block form; self-organized generation; reinforcement learning; intelligent optimization; urban design

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AI-Driven Multimodal Data Fusion for Automated Ontology Construction: Methods and Smart Manufacturing Case Study

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Ontology technology plays a vital role in information management within the fields of architecture, engineering, and construction. AI-driven automated and semi-automated ontology construction has emerged as a key research direction, significantly improving the efficiency and scalability of ontology construction while addressing the limitations of traditional methods that rely heavily on domain expert knowledge and manual input. Urban data formats have evolved from single-text sources to multimodal data, demonstrating rapid growth. However, current research on automated ontology construction predominantly focuses on single-source data, particularly text-based data, with limited studies on the fusion and automatic construction of ontologies from multimodal data. To address this gap, this study investigates AI-based methods and technical pathways for automated ontology construction driven by multimodal data. First, a systematic literature review was conducted to summarize typical technical methods used at key stages of the ontology automation process, including concept extraction, relation identification, and hierarchical structure construction. The study further analyzes the performance of machine learning algorithms, such as large language models, reinforcement learning, and graph neural networks, at these stages. Second, knowledge extraction and multimodal data fusion strategies are explored for various data types, such as text, images, audio, and structured tables. Finally, this study proposes an AI-driven automated ontology construction method leveraging multimodal data, using a smart factory as a case

study to demonstrate the use of various data types, including sensor readings, images, video streams, and operation logs, and to evaluate its practical feasibility. The proposed method improves the efficiency of knowledge representation and the accuracy of semantic expression, contributing to the theoretical advancement of ontology construction. Moreover, its practical feasibility and scalability highlight its potential for broad application in intelligent systems, such as smart cities and smart buildings, thereby supporting enhanced ontology-based knowledge management and informed decision-making.

Keywords:

Automated Ontology Construction; Multimodal Data; AI-Driven Approach; Smart Manufacturing; Knowledge Representation

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Geographically weighted machine learning for modeling spatial heterogeneity in off-campus student housing rents

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The rapid increase in property transactions and rental prices in Taiwan has created serious challenges for housing equity, especially for college students without access to on-campus housing. Rising rents, combined with a lack of transparency and market information asymmetry, have exacerbated financial burdens and made the rental process increasingly stressful. The factors and spatial patterns that influence rental prices in college neighborhood are complex, and current research methods have shown limited capacity to explore the complexities. This study aims at geographic weighted machine learning (GW-ML) models to analyze rental price spatial patterns and their influencing factors for off-campus housing for college students.

The study begins by applying global Moran's I and local LISA to identify high- and low-rent clustering areas. Subsequently, the K-means machine learning algorithm is used to classify rental prices into distinct tiers, capturing renter preferences and facilitating effective market segmentation. To account for spatial heterogeneity in off-campus rentals, the study employs GW-ML, a framework that integrates Geographic Weighted Regression (GWR) principles with advanced machine learning techniques.

Nine models are tested to evaluate their predictive performance, including linear regression models (Linear Regression, Bayesian Ridge, and Lasso Regression) and cutting-edge machine learning models such as Random Forest, XGBoost, Gradient Boosting Decision Tree (GBDT), LightGBM, Support Vector Regression (SVR), and k-Nearest Neighbors (KNN). Model performance is assessed using root mean squared error (RMSE). By incorporating spatial weights derived from kernel density functions, GW-ML captures the spatial and non-linear characteristics of rental price data more effectively than traditional ordinary least squares (OLS) housing price models.

Among the tested models, LightGBM demonstrates the highest predictive accuracy, effectively identifying spatial patterns and predicting rental price variations. Statistical analysis reveals that proximity to colleges, housing age, and access to transportation

infrastructure (e.g., public bike systems and bus stops) are significant factors influencing off-campus rental prices. The findings highlight the potential of GW-ML to enhance understanding of spatial dynamics in rental markets and provide actionable insights for improving affordability and accessibility in college-area housing.

Future research could use graph neural networks and spatiotemporal analysis to better understand the dynamic interactions in rental preference. These approaches could help predict changes in rental prices over time and across locations, providing deeper insights into market trends and supporting better policy decisions.

Keywords:

geographically weighted machine learning; machine learning; housing rents

T_11 EMERGING TECHNOLOGIES / 578

Identification of potential regeneration areas in urban residential districts using multi-source big data and GeoAI

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Urban regeneration is crucial for fostering revitalization and sustainable development in cities. Accurate identification of regeneration areas in urban residential districts is essential for implementing effective regeneration strategies. However, existing studies struggle with the automatic large-scale spatial classification of regeneration areas due to their inherent complexity. Moreover, complete demolition and reconstruction are not always conducive to long-term sustainability. This study proposes an automated framework to identify potential regeneration areas in urban residential districts, using remote sensing data and GeoAI, with Shanghai as a case study. The framework began by establishing classification rules to identify different regeneration categories: retention, renovation, and demolition areas. The data labeling process was performed using the Segment Anything model, followed by a comprehensive identification of regeneration modes through deep learning models, specifically DeepLabv3+. The results show that (1) a total of 327.18 km² of retention areas, 130.76 km² of renewal areas, and 37.31 km² of demolition areas were automatically identified; (2) retention areas were evenly distributed across the city, while potential renewal areas were concentrated in the central urban districts, and demolition areas were primarily located in the outer suburban regions. This automatic identification framework significantly improves efficiency compared to traditional manual methods. The findings provide valuable insights for urban planners, highlighting priority regions for targeted regeneration efforts.

Keywords:

Urban regeneration Remote sensing Deep learning Semantic segmentation Multi-source data

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T_11 EMERGING TECHNOLOGIES / 896

Towards Ethical Implementation of Urban Digital Twins: Addressing Key Challenges and Recommending Best Practices

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Cities are at the forefront of transformative planning in the green and digital era, experimenting with innovative smart city narratives and technologies. This study emerges from embedded research conducted through a collaboration between the **ADAPT Research Ireland Centre**, a national government-funded multi-institutional and interdisciplinary research centre, and Dublin City Council's Smart City Unit under the **Smart Dublin** umbrella (Dhingra and Kerr, 2023). The project aims to trial, test and evaluate Urban (Local) Digital Twin (UDT), bearing **an ethical perspective to inform a digital twin implementation strategy at Ireland's largest local authority** (Dhingra, et.al, 2023).

Authors adopt the EU definition for UDTs as *virtual replicas of physical assets, places and processes –offering evidence-based decision-making capabilities by integrating cross-sectoral, historical, and near-real-time data* (Arriens, 2022). The growing relevance of UDTs is evidenced by the European Commission's report, which identifies 135 UDT platforms across Europe, predominantly at city-level and focussing on urban planning, environment and mobility use-cases (Arriens, 2022). Furthermore, an analysis of Scopus-indexed literature reveals an exponential increase in UDT research, with more than half of the publications emerging in the last two years.

While the role of UDTs is increasingly referred to as crucial for contemporary spatial planning, they may raise many ethical, social and legal issues (Helbing and Argota Sánchez-Vaquerizo, 2022; Wang et al., 2024). Technical barriers, such as achieving interoperable, open-data standards, are further compounded by non-technical hurdles, including capacity building and upskilling of local authority staff, privacy risks, cybersecurity threats, dataveillance, social discrimination, technological lock-ins, and potential democratic backsliding (Weil et al., 2023; Mazzetto, 2024).

This study delves into the ethical challenges associated with UDT implementation for urban decision-making using Dublin as a case study. An extensive literature review, complemented by directly engaging with Irish Local Authority Staff since 2022 through ADAPT collaboration and insights gathered from INTERREG North-West Europe co-funded **Twin4Resilience (T4R) project**, forms the foundation of this analysis. The findings emphasize several key principles to guide the adoption of UDTs by public authorities supporting effective data management, standardization, and operational guidelines for embedding UDTs within existing cultural and institutional frameworks.

Foremost, a **people-first approach** is recommended to ensure that UDTs align with societal goals and public needs. Institutional benefits/impacts must establish their long-term **organizational value**. To address privacy and cybersecurity concerns, **trust in safe data**

handling is paramount. UDTs should avoid any biases and support **non-discrimination and data equity**. Legal and ethical standards require **regulatory compliance** especially to resonate with the current European policy landscape, while user-friendly systems can ensure **accessibility and engagement at every step**. Finally, it is essential to foster **trust in UDTs for decision-making**. The paper concludes with actionable recommendations for facilitating ethical and inclusive UDTs and their potential to bridge socio-spatial inequalities in urban settings.

Keywords:

Urban Digital Twins; People-Centric; Smart Cities; Ethical Implementation

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T_11 EMERGING TECHNOLOGIES / 1144

Motivational Affordances of Gamified Participatory Experiences

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The rapid urbanization of cities brings struggling conditions for both people living in cities and the governments responsible for managing the complex issues of urban areas. Although the adoption of smart infrastructure in cities provides important opportunities for the management of particular systems, collaboration with citizens through these systems is not sufficiently supported. Citizens' concerns and expectations regarding urban issues are not fully understood and their potential contribution is often neglected. Considering the effectiveness of digital participatory tools and environments, it is debatable to what extent the technologies offered contribute to people's motivation to get

involved. Since the technology alone cannot ensure participation in the designed interaction, it is assumed that people need to be self-motivated or externally incentivized to interact with such systems. This study aims to understand citizens' perspectives on interactive participatory processes, and to evaluate the gamified qualities that either harm or empower the established interaction. Addressing these arguments, five case studies incorporating gamified mechanisms have been examined through their motivational affordances in fostering public engagement. The selection of these case studies has been made according to the forms of the game concepts adopted by the projects. As a full-fledged serious game, "B3-Design your marketplace" (Poplin, 2012) -which is also a web-based collaborative design platform, was chosen; an interactive public engagement project "SMSlinsight" (Fischer et al., 2013) was included due to its playful qualities; an urban mobility application "Viaggia Rovereto" (Kazhamiakin et al., 2015) and two different mobile participation applications "Täsä" (Thiel, Ertio and Baldauf, 2017) and "Game.UP" (Muehlhaus et al., 2022) were added as gamified alternatives. The studies were evaluated based on the intrinsic and extrinsic motivational determinants defined by Nicholson (2015) within the framework of meaningful gamification. Through the case studies, it has been observed that reward-based extrinsic motivational elements compared with intrinsic motivational elements like fun are less effective than expected, especially in the long term. Major conclusions of this research focus on the analysis of the motivational determinants of gamified participation and the experiential qualities of designed interactive processes. By understanding what motivates people to participate, this study can make a significant contribution to promoting collaborative efforts necessary for addressing the complex and multi-layered challenges faced by cities.

Keywords:

urban planning, gamified participation, motivational affordances

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T_11 EMERGING TECHNOLOGIES / 1125

Intersection of Digital and Physical: Phygital Urban Public Spaces

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Space and thus cities are dynamic organisms which tend to evolve according to their surroundings. With the incredible advancements of technology for the last half century, the perception of space has changed and gained importance in terms of digitalization. As public space is one of the most crucial parts of any type of settlement, it plays a big part in this shift of perception. Since urban public space is no longer limited to its physical dimensions and can be experienced in a hybrid way, there is a need of reconceptualizing public space, taking into consideration of the digital age. With public spaces, social life, leisure time activities and where these are experienced, should also be included in this consideration. Through this shift, there are possible “phygital” spaces that can act as both digital and physical within urban environment blurring certain boundaries and disadvantages of each other.

The aim of the thesis is to investigate and understand how public space changes with contemporary technological developments, the potential and power of phygital spaces may have in redefining and transforming public spaces by overcoming conventional limitations such as size, capacity, and location and their function for leisure activities while questioning how the inclusion of phygitality into urban spaces could bring additional values to underused public areas and add value to the vitality of the urban environment by emphasizing user experience. This study intends to help rethink public spaces in the digital age by investigating the interaction between digital and physical layers and providing insights into their changing function to reveal some of the opportunities and challenges related to the design of phygital public space.

The methodology is a descriptive and thematic analysis based on various experts’ opinions about the issue. Phygital spaces have a potential that can help contribute to a new perception of public space with today’s needs while creating solutions with a novel perspective to some of the problems of extreme growth in cities and ensuring a new and more interactive way to enjoy both leisure time and public space.

Keywords:

Spatial Digitalization; Phygital Space; Digital Transformation; Public Space; Underused Spaces

T.11 EMERGING TECHNOLOGIES / 759

Visual perception and preference analysis of riverfront mountain landscapes in mountainous cities: A study based on user-generated image data

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The combination of the two natural features of riverside coasts and mountain ranges is a relatively common geographic environment in urban settlements (Kim, Kim&Joo, 2024), and riverfront mountain landscapes have become one of the most important spatial vectors for highlighting the city’s distinctive style and image due to their unique geographic location advantages and morphological features. However, for cities with limited space, it is not feasible to increase the number of mountain green spaces to improve the spatial quality only by increasing the number of green spaces in the mountains, when the development of urban densification has become a common trend (Chen,Qiu&Gao,2019). An in-depth understanding of landscape perceptual preferences is essential for maintaining attractive mountain landscapes and promoting sustainable urban public space development, further providing a theoretical basis for decision-making on improving green

space quality (Jim and Chen, 2006). Meanwhile, with the rapid development of big data, user-generated image data provides a new research perspective for exploring landscape preferences due to its large sample size, high degree of public participation, and sufficient authenticity. However, most of the existing studies only reveal the degree of importance of landscape elements (Tieskens et al., 2018), confusing the two independent perceptual attributes of visual attention and aesthetic preference (Qiu et al., 2023), which makes it difficult to effectively identify the landscape content that truly attracts the public through social media, Crowdsourcing geo-information landscape content that really attracts the public. Therefore, this study takes Chongqing, the largest mountainous city in western China, as an example and constructs a set of mountain visual perception preference analysis system based on user-generated image data. The article combines the spatial aggregation distribution of user-generated pictures appearing in the elements of the riverside mountain landscape with the content analysis of the photographs, assesses the perceived preference of the riverside mountain landscape by analysing the geospatial distribution of the photographs and the comparison of the mountain visibility, and then combines the content analysis of the photographs with deep learning in order to determine the content in the mountain landscape that attracts people. The results of the study show that iconic point-scape structures rich in humanistic heritage, transport facilities such as bridges ropeways and rails with mountain characteristics, and the hierarchy of mountains and buildings are important factors influencing tourists' and residents' visual preferences for the riverside mountain landscape. The method successfully links visual concerns and aesthetic preferences, which is important for shaping urban landscape design decisions that appeal to the public.

Keywords:

visual perception; User-generated data; Mountain Cities

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T.11 EMERGING TECHNOLOGIES / 443

Unpacking the Black Box: How does the WeChat application reshape digitally enhanced collaborations between planning practitioners in China?

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Digital communications, driven by information and communication technologies, have brought new opportunities and challenges in the complexity of collaboration. Communication is at the heart of collaborative planning theory and practice, emphasising dialogue, network, equality, and consensus building among wider stakeholders in the planning arena (Susskind et al. 1999; Healey 1997; Forester 1999). However, achieving this ideal approach in practice is complex, as ineffective communications and conflicts can hinder the project outcome and future improvements. The issue can be more complicated in modern society, as ‘digital’ and ‘non-digital’ interactions are interlaced in planning practice.

With emerging digital technology, social media has emerged as a game-changer for enhancing communication widely and confronting organisational challenges caused by a hierarchical work culture. Recent studies recognise the role of social media in transforming traditional planning power dynamics by shaping (or reshaping) public debates through online platforms. Several scholars question the influence of digital communication on collaborative planning, for example, power relations in social media (He et al. 2024), digital planning participation (Cheng 2013), smart governance platforms (Milz 2019), and sociocultural processes (Chen et al. 2018). While significant academic discussions exist regarding the digital influence on collaborative planning, such approaches have focused on specific paths of collaborative process but have not necessarily shown holistic delivery mechanisms in planning practice. The empirical application of social media in various collaborative delivery operations in real-life planning contexts remains largely unexplored.

Leveraging the experience of planning practitioners in China, this research aims to deepen our understanding of the digitally enhanced collaboration process and generate a more robust collaboration mechanism facilitated through social media interactions. The two primary foci of this study are:

- (1) to establish a conceptual framework for digitally enhanced collaboration by integrating traditional collaborative planning theory with contemporary digitalisation debates; and,
- (2) to investigate how digital collaboration unfolds in practice by identifying both the barriers and opportunities generated by social media.

Planners have faced complex challenges in coordinating across government sectors while navigating digital and non-digital interactions. The importance and originality of this study are that it explores not only how WeChat is used in the planning practice but also its influence in transforming the collaborative work culture among planning practitioners. This study introduces the concept of ‘digitally enhanced collaboration’ by integrating two key frameworks:

- (1) collaborative planning delivery mechanism, which emphasises consensus building, facilitation, and open participation (Kim and Batey 2021); and,
- (2) role of social media in collaborative planning, particularly in information sharing, social networking, and communication (adapted from Lin 2022).

The research focuses on how planning practitioners use WeChat, China’s most widely used social media, to deal with the multi-sectoral complexity involved in spatial and territorial planning processes. The study employs a qualitative approach through semi-structured interviews and focus group discussions to capture empirical insights learned from Chinese planning practitioners, both from the public and private sectors.

Collaborative planning has traditionally been criticised because real-world politics is not about negotiation among equals but power-centred interaction. This study indicates that WeChat communication can effectively manage trust levels among participants using functionally designated group chats. This leads to richer and freer information sharing that is less influenced by hierarchy and power dynamics. WeChat has also emerged as a primary information resource for new planning policies and innovative practices that facilitate mutual learning among practitioners. Moreover, it has become a potential planning tool for gathering views of local communities and, therefore, leveraging public participation. While political influences often make it difficult to mediate power

relations neutrally, digitally enhanced collaboration may help lower information-sharing barriers, stimulate wider stakeholders' participation, and facilitate dialogue to resolve future conflicts.

Keywords:

collaborative planning; social media; planning practice; digital collaboration; China

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T.11 EMERGING TECHNOLOGIES / 381

Monitoring the Impact of Urban Regeneration on Green Infrastructure: Istanbul Case

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Urban regeneration projects as transformative operations that strengthen and restructure the built environment under the risk of natural disasters have become one of the prior urban policies. These disaster-responsive projects not only aim to support resilience but also contribute to sustainability and increase the quality of life by optimizing the green infrastructure. One of the main components of the urban ecosystem, green

infrastructure is a supportive unit for absorbing carbon emissions, sustaining cooling effects, and enhancing public health. Thus, green-driven urban regeneration projects have developed into effective tools for resilience-oriented climate change adaptation policy.

In Turkey, urban regeneration implementations are based on state law 6306 on the Transformation of Areas at Disaster Risk. The main objective of the law is to constitute healthy and safe urban settlements. Istanbul, as a metropolitan city that has vulnerable building stocks, faces great seismic risk. Therefore, within the aim of the law, urban regeneration projects are operated as comprehensive planning tools in the city. Despite the expectancy of contributing to life quality by escalating the green space in the city, preliminary findings indicate that implemented urban regeneration projects in declared risky regions create diminishing impacts on green spaces (Korkmaz & Balaban, 2020; Yazar et al., 2020). Mostly, those projects result in higher density, and green spaces per cap remain inadequate. Limited empirical research focuses on how urban regeneration projects influence the green infrastructure in Istanbul.

Addressing this issue, this study aims to investigate how urban regeneration projects under law numbered 6306 impact the changes in urban green space. The study sample was selected from regions declared risky by the Ministry of Environment, Urbanization, and Climate Change, whose urban regeneration was completed. The vegetation cover index (NDVI) obtained from Landsat-8 images for 2013 and 2024 will be used to detect changes in green spaces. The supervised machine learning technique Random Forest will be employed to execute the spatiotemporal analysis.

The study expects to reveal how urban regeneration initiatives affect the urban environment and reduce green space over time. Future findings in the study will provide tangible data for policymakers to review and improve urban regeneration projects within a sustainability context. Unlike traditional planning methods, employing machine learning techniques in this study allows for more optimized spatiotemporal analysis to address the complexity of urban space. Ultimately, this study will serve as an adaptable methodology to future empirical research to develop regeneration projects that minimize environmental effects by integrating remote sensing data and machine learning techniques.

Keywords:

urban regeneration; green infrastructure; vegetation index; random forest; change detection

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T_11 EMERGING TECHNOLOGIES / 1111

Teaching planning cultures? Planning games for intercultural learning across borders

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Despite strategy papers and guidelines such as the Territorial Agenda 2030 of the European Union (2020) that define common European objectives and orientations for territorial development, planning practice among EU member states remains rather variegated. These differences become particularly apparent in cross-border spatial planning contexts when attempting to navigate the “balancing act between two planning systems” (Jacobs, 2016) to steer the spatial development of a borderland.

In order to study planning practices and cultures along national borders, the UniGR-CBS Spatial Planning Working Group has developed an experimental planning game methodology –an innovative, intercultural tool based on Othengrafen and Knieling’s (2015) concept of planning culture, which manifests itself through the layers of planning artefacts, planning environment and societal environment. The game unfolds in several phases, involving both intra-team and inter-team negotiations to simulate the collaborative development of a planning concept for a fictional cross-border area. Through gameplay observations and reflexion rounds, researchers gain insights into players’ experiences, knowledge and interactions within a cross-border context.

Empirical evidence from recurring planning game sessions (2017, 2019 and 2022) with planning practitioners and students from the “Greater Region” (Rhineland-Palatinate, Saarland, Luxembourg, Wallonia and Grand-Est) shows that planners from neighbouring sub-regions often follow divergent approaches when in action: interpretations of the same planning paradigms differ significantly, thus causing diverging planning outputs. Furthermore, spatial planning approaches and concepts are often understood and implemented differently in the sub-regions which illuminates the geographically diverging character of planning cultures.

We conclude that the absence of a shared planning culture fosters conflicting planning practices at state borders, making the teaching of planning cultures crucial for effectively facilitating cross-border spatial planning. The ‘planning environmental layer’ of Knieling and Othengrafen’s planning culture concept – defining planners’ values and beliefs about spatial planning goals – is heavily influenced by national planning education systems.

Spatial planning educational programmes are typically nationally focused, following path-dependent curricula and syllabi rooted in distinct scientific disciplines. As a result, students primarily absorb domestic planning cultures unless they get study experiences from abroad, through student exchange programmes, dual degree programmes or internships abroad. The latter help them to gain exposure to other planning approaches. Furthermore, in cross-border regions such as the “Greater Region”, where transnational interdependencies frequently occur and a cross-border spatial development concept was recently introduced, planners need strong intercultural competencies to support cross-border cooperation.

Against this background, the Laboratory of Territorial Intelligence (LATI) project, funded by INTERREG VI A Greater Region, places particular focus not only on fostering cross-border cooperation in spatial planning, but also to develop planning games for students as a key educational tool designed to enhance intercultural cross-border planning competences. By simulating the development of a transnational planning concept, the new game encourages students (a) to familiarise themselves with other planning cultures, (b) to develop a deeper intercultural understanding and (c) to engage in collaborative problem solving by learning how to negotiate, collaborate and compromise – essential skills for navigating and managing planning cultures. The student planning game complements traditional educational approaches by incorporating participatory and experiential learning.

By equipping future planners with concrete experiences in collaborative cross-border spatial planning, the planning game could contribute to developing more cohesive and effective spatial development strategies. This not only strengthens cross-border cooperation but also contributes to achieving the objectives outlined in the Cross-border Spatial Development Concept of the Greater Region (2023).

Keywords:

cross-border spatial planning; planning cultures; Greater Region; experimental games

T.11 EMERGING TECHNOLOGIES / 921**The Impact of Environmental Design Elements on Corporate Site Selection for Information Industry Companies in the Metaverse****Author:** Yılma KARATUNA^{None}**Co-author:** Eren KÜRKÇÜOĞLU**Corresponding Authors:** ekurkcuoglu@itu.edu.tr, karatuna@itu.edu.tr

With advancements in information and communication technologies, the virtual world is becoming a broader expression of our personal and collective space, leading to a bidirectional formation. This situation underscores the uncertain distinction between an individual's physical presence and actions in the real world, and their digital identity (and behavior) in virtual networks. With the transition from the Web 2.0 era to Web 3.0, the Metaverse, which places the user at the center and provides a sense of reality in virtual environments, has gained significant popularity. The Metaverse platform, which was initially popularized by virtual games, played a key role in converting physical spaces into virtual environments, particularly with the onset of the COVID-19 pandemic. The hybrid work model and the goal of improving employee experience scores are driving companies in the information industry to invest in virtual offices particularly metaverse offices which need to be designed with specific environmental design elements to make them attractive. The Metaverse serves as a virtual environment that can meet this demand for virtual offices while providing both social and commercial benefits.

The study aims to identify the factors influencing corporate site selection decisions of information industry companies in Türkiye within metaverse platforms and to explore how urban/environmental design tools can create added value. The structure of the study is concentrated on the relationship between the “Metaverse and urban design” with also “real estate and urban design” through remarkable subtopics which have emerged as the key terms most frequently associated with environmental design elements such as *regional identity, mixed uses, open spaces, building heights and appearances, spatial relationships, sustainability, visual and morphological* concepts.

The method of this study involves an online survey application based on key elements encountered in literature review and other environmental design elements predicted in light of urban planning/urban design formation, in order to determine which environmental design factors influence corporate site selection decisions of information industry companies in the Metaverse. Based on the survey results, the relationships and importance evaluation of environmental design elements were conducted using regression analysis in the SPSS software. Based on the initial findings of the pilot survey, environmental elements within the accessibility cluster have a more significant impact on the corporate site selection decisions of companies or institutions operating in the information industry compared to the urban space design elements cluster and building design cluster. It can be said that the dominance of this result is largely due to the fact that the survey was conducted in Türkiye, particularly reflecting the responses of company representatives based in Istanbul. This is because Istanbul is a metropolitan city where traffic and accessibility issues are particularly pronounced. Therefore, environmental design elements within the accessibility cluster have become the most prominent criterion even when making site selection decisions in the Metaverse. In line with the final results of this stage, it is aimed to capture an intersection between theory and practice with the platform design in the Metaverse planned for the next stage with simulating the environmental design elements identified through the survey. Additionally, it seeks to contribute to literature by identifying new environmental design elements in the Metaverse that may overlap with or differ completely from those in the physical world.

Keywords:

Metaverse; Environmental Design; Site Selection; Information Industry

T.11 EMERGING TECHNOLOGIES / 1118**Augmented Reality for Community-based Collaborative Urban Design: A Case Study of RWTH Aachen University Campus Transformation****Author:** Liyuan Ma¹**Co-authors:** Ceren Sezer¹; Bige Tunçer²; Christa Reicher¹¹ *Chair of Urban Design and Institute for Urban Design and European Urbanism, RWTH Aachen University*² *Chair of Information Systems in the Built Environment, Eindhoven University of Technology***Corresponding Authors:** sezer@staedtebau.rwth-aachen.de, ma@staedtebau.rwth-aachen.de, reicher@staedtebau.rwth-aachen.de, b.tuncer@tue.nl

Augmented Reality (AR) demonstrates significant potential as a participatory tool in collaborative urban design by enabling real-time, 1:1 scale visualization of 3D design proposals through mobile devices. Given the challenge of fostering quality participation in urban design, this research investigates the effectiveness of mobile AR in enhancing understanding and motivation for collaborative urban transformation. University campuses serve as pilot areas, with university students as the focus group, aligning with universities' role in pioneering innovative solutions and engaging students as active participants in testing, implementing, and shaping these solutions. Taking RWTH Aachen University's campus in Germany as a case study, the research explores AR's ability to visualize campus spatial design proposals, communicate sustainability concepts, and stimulate student-driven initiatives, comparing it to conventional renderings.

The study adopted a theoretical framework based on Arnstein's Ladder of Participation to evaluate the participatory level facilitated by AR and employed the United Nations Sustainable Development Goals (SDGs) as criteria for sustainable campus transformation. A mobile AR app was developed using Unity, integrating a spatial transformation proposal for Annuntiatenbach Street—a key site on the RWTH Aachen campus. The app enabled participants to engage with site-specific design elements, such as mobility enhancements, climate comfort improvements, and social interaction spaces. During a two-day workshop in January 2025, 12 students explored and interacted with the AR app, while static renderings were also tested for comparison. Data collection included questionnaires and group interviews evaluating participants' impressions of AR and renderings, along with workshop documentation through video recordings, screen captures, and an interactive comment board. Findings indicate that AR significantly enhances user understanding and motivation. Participants demonstrated greater engagement, longer interaction times (6 minutes for AR; 3 minutes for images), and more physical exploration when using AR. Qualitative data further highlighted AR's immersive and dynamic qualities as key factors in improving spatial understanding and fostering a deeper perception of spatial quality.

Within the scope of the case study, both AR and renderings facilitated participation at the first level (informing and consultation), though AR proved more effective in fostering engagement and understanding. Despite AR's benefits, technical limitations—such as initial setup difficulties and tracking inaccuracies—impacted the participatory experience. Practical solutions, including refining the user interface and optimizing device tracking, are proposed to address these challenges. Critically, while the AR app excelled as a visualization tool, it lacked support for user-driven design modifications, highlighting the need for integrating co-creation features (e.g. replacing or moving tools) to further enhance design-based collaboration. These findings contribute to broader explorations of AR's role in collaborative urban planning, emphasising its potential to bridge communication gaps between experts and citizens and address interdisciplinary and socio-cultural barriers in urban development. The study envisions an AR-empowered approach, combining AR's visualization strengths with other digital tools to create more transparent, inclusive, and participatory processes. These insights provide actionable strategies for urban planners, universities, and municipalities seeking to implement AR in real-world planning frameworks to advance participatory urban design.

Keywords:

augmented reality; collaborative urban design; digital participation tool; sustainable campus

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A Novel Large Language Model Approach for Streetscape Perceptual Analysis in Shanghai

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Street perception encompassed multiple layers, from basic visual elements to complex cognitive interpretation. While traditional urban perception studies primarily focused on visual features, they often overlooked the deeper, multidimensional aspects of perception. This research introduced a novel unsupervised multi-feature integration framework for analyzing streetscape change perception, combining multimodal large language models with deep learning techniques. The framework enabled intelligent analysis of Shanghai's streetscape evolution patterns through an automated process of training data generation, model development, and model application. Our results demonstrated that ChatGPT's evaluation of streetscape transformation extended beyond simple visual changes to encompass complex urban dynamics. The model exhibited sophisticated analytical capabilities by incorporating both socioeconomic factors, such as commercial vitality, and physical transformations, including construction and renovation activities, in assessing environmental quality changes. The study made significant methodological contributions by establishing an intelligent, reproducible framework for dynamic streetscape evaluation. Furthermore, it uncovered fundamental patterns in metropolitan streetscape evolution, providing valuable insights for informed urban renewal policy-making.

Keywords:

Streetscape Change; Perception; ChatGPT; Deep Learning

T.11 EMERGING TECHNOLOGIES (0) / 196**Spatiotemporal perception of disasters based on social media data in the context of climate change: A case study of Shanghai****Author:** Yun Ling¹**Co-author:** Jing Gan¹¹ College of Architecture and Urban Planning, Tongji University**Corresponding Authors:** yun.ling@126.com, jinggan@tongji.edu.cn

The frequent occurrence of extreme weather events has brought serious impacts on cities under the background of climate change. For example, the increasingly frequent typhoon will cause strong wind disaster and extreme rainstorm disaster with the characteristics of rapid change and high uncertainty. These disasters cannot be responded quickly with the traditional methods of disaster prevention and mitigation planning such as improving defense standards and formulating disasters prevention plans. Therefore, it is urgent to explore more adaptive planning methods to meet climate change challenges and realize climate resilience. In recent years, urban residents publish real-time disaster information through social media, which can be identified and analyzed to provide timely information to support decision-making for disaster response.

Based on this situation, this paper selects Shanghai as the study area, takes Typhoon "Pulasan" and Typhoon "Bebinca" as an example (these typhoons consecutively influence Shanghai from September 14 2024 to September 22, 2024), and conducts disaster perception analysis based on the disaster information published on Sina microblog (one of the most famous social media in China). Firstly, this paper collects the text data of Sina microblog during the disaster, identifies the disaster information from the text, and analyzes disaster theme of public concern with the topic model of the Latent Dirichlet Allocation (LDA). Secondly, this paper calculates the public perception level, and evaluates the public emotion tendency and the public emotion intensity during the disaster based on the sentiment dictionary of China National Knowledge Infrastructure (HowNet). Thirdly, it analyzes the spatiotemporal distribution characteristics of the public perception level and the public emotion intensity.

The results are as follow: (1) 2734 pieces of disaster information are identified, and the disaster themes are mainly divided into three categories, including disaster disruption to daily activities, disaster-affected locations, and post-disaster public space; (2) In terms of time dimension, the distribution of the public perception and the emotional intensity presents obvious double peak characteristics. In detail, the public perception during Typhoon "Bebinca" is higher than that during Typhoon "Pulasan", while the negative emotional intensity during Typhoon "Bebinca" is lower than that during Typhoon "Pulasan". Meanwhile, the peak of the emotional intensity lags behind the peak of the public perception; (3) In terms of space dimension, the distribution of the public perception (Moran $I=0.053$, $z=7.769$, $p=0$) and the negative emotional intensity (Moran $I=0.045$, $z=3.842$, $p=0$) present obvious clustering characteristics, while the distribution of the positive emotional intensity (Moran $I=0.016$, $z=1.301$, $p=0.193$) presents random distribution characteristics. Furthermore, the public perception hotspots are distributed in the southern coastal area of Shanghai while the negative emotion hotspots are mainly concentrated within the middle ring road of Shanghai, which shows the spatial distribution differentiation between the public perception hotspots and the negative emotion hotspots.

To summarize, the public pays more attention to the disaster impact on public facilities and public spaces. Additionally, there is different disaster impact on urban residents in different areas, resulting in spatiotemporal differences between the public perception hotspots and emotion hotspots. Accordingly, corresponding planning strategies are proposed from three perspectives, including integrating disaster perception results into spatial risk assessment, optimizing emergency response based on the public perception analysis, and taking the distribution characteristics of the public emotion intensity as decision-making support for post-disaster recovery.

The significance of this paper is to explore the application of big data technology and social media in responding to climate change challenges, so as to provide a reference for the integration of new technologies into resilient urban planning.

Keywords:

climate change; resilient city; social media; spatiotemporal perception; typhoon

T_11 EMERGING TECHNOLOGIES (0) / 1494**Agent-Based Decision Support Platform for University Campus Dining Space Management: A Case Study from Tongji University, Shanghai, China**

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Introduction

In the era of smart campus development, emerging technologies such as AI and digital twins have revolutionized educational systems, yet public space management remains reliant on traditional, experience-driven approaches. This gap is evident in critical areas like campus dining spaces, where imbalanced utilization and inefficient resource allocation persist due to insufficient integration of big data and intelligent technologies. Focusing on Tongji University—a high-density urban campus in Shanghai—this study addresses these challenges by developing an agent-based simulation platform to optimize dining space management. Leveraging multi-source data, including 6.3 million campus smart card (CSC) records, geospatial information, and survey responses, we construct a decision-support framework that combines large language models (LLMs) with spatiotemporal behavior analysis to predict user behavior and evaluate management strategies.

Approach and Methodology

The research integrates heterogeneous datasets from May 2023, covering seven campus dining halls, CSC transaction logs (capturing spatiotemporal trajectories at restaurants, classrooms, and gates), class schedules, and individual attributes (e.g., gender, major). A novel LLM-driven agent framework is designed to simulate dining choices, comprising five modules:

1. Agent Attributes: Defines individual characteristics (e.g., academic role, schedule).
2. Long-Term Memory: Stores campus environmental data and personal dining history.
3. Pathfinding Tool: Employs Dijkstra's algorithm for route optimization.
4. Real-Time Context Inputs: Integrates dynamic variables (e.g., updated schedules, crowding alerts).
5. Decision Outputs: Generates dining choices and navigational paths.

The model is trained on 20 days of CSC data, validated against a one-day test set and traditional discrete choice models (DCM). Scenarios including staggered class dismissals, real-time crowding information provision, and comprehensive dining quality upgrades (e.g., improved meal variety, service efficiency, and ambient conditions) are simulated to assess spatial utilization efficiency.

Results

The LLM-based agent achieved an 85% accuracy in predicting dining choices, outperforming DCM (76%). Scenario analyses revealed that combining staggered class dismissals with real-time crowding information provision reduced peak-hour congestion by 28% and average wait times by 12 minutes. Meanwhile, comprehensive dining quality upgrades decreased the maximum disparity in space utilization across dining halls from 51% to 27%, promoting equitable spatial distribution. These results demonstrate

the framework's capacity to address both temporal crowding and spatial imbalance.

Discussion and Conclusion

This study advances urban spatial governance by embedding LLMs into agent-based modeling, enabling the simulation of complex human-environment interactions under multidimensional constraints (e.g., schedules, preferences, spatial layouts). Unlike static DCM approaches limited to linear variable relationships, the proposed framework dynamically adapts to contextual changes, incorporates memory-driven learning, and processes heterogeneous data streams—aligning closely with the nonlinear, adaptive nature of human decision-making. By translating granular behavioral predictions into actionable strategies, the platform bridges the gap between data-driven insights and spatial management, fostering resilient, user-centric campus environments.

The methodology offers scalable applications for urban public spaces, including commercial hubs and transit nodes, where balancing efficiency and equity remains a challenge. Future work will integrate real-time IoT data streams and participatory stakeholder feedback to enhance adaptability. This research underscores the transformative potential of AI-augmented decision-support systems in achieving evidence-based, inclusive urban governance—a critical step toward building smarter, more responsive cities.

Keywords:

spatiotemporal behavior; smart campus; decision support systems; agent-based modeling; LLMs

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T.11 EMERGING TECHNOLOGIES (0) / 485

Speaking as a river - Introducing multispecies role-playing games for urban sustainability planning

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Severe social-ecological crises on earth are intensifying, leading, among other things, to the destruction of biodiversity and habitats of all living beings. Behind these crises lies a deeply rooted anthropocentric world view, in which humans perceive themselves not only as separate from, but also as superior to the rest of nature (O'Brien et al., 2024). The same applies to urban and regional planning, which has traditionally been committed to designing cities for human needs. Increasingly, however, this imperative is being questioned and more-than-human approaches to spatial planning are being advocated in order to break away from anthropocentric thinking and open up new avenues for alternative imaginaries (Bush and Doyon, 2023).

Role-playing as a serious game is an established method in planning education, where students learn, practise and reflect on taking on roles and representing others (Olesen, 2018). Role-playing allows participants to consciously step out of their own perspective, take on other points of view and act as proxies in a fictional world of play. However, role-playing games mostly reflect anthropocentric planning practices, as the games mainly take human interests into account (Castellazzi, Hakkarainen and Raymond, 2024; Istrate and Hamel, 2023). In contrast, the voices of the more-than-human world are increasingly being staged at the interface between art, activism and education using playful

methods (Sachs Olsen, 2022). In this context, the question arises as to how role-playing can be used to develop and practise a more-than-human perspective and ways of thinking in the sense of a transformative skill (Chen and Martin, 2015). We therefore explore how role-playing as a method can create a safe and reflective space in which more-than-human voices are included in urban sustainability planning. Four different role-playing game designs were developed and tested based on the relational ethics of a human-nature partnership (Artmann, 2023). The participants were encouraged to question anthropocentrism in a what-if world in which more-than-human actors had their say in a planning scenario and a thriving life for all living beings in the city was sought.

Our paper will first illustrate and reflect on the overall game development process by describing the main features of the four role-play designs, and the possibilities for integrating more-than human voices and the intersections with urban planning. Second, we present the results of a directed content analysis of the role-play designs using multispecies justice as an analytical framework. Building on this, we share our insights on how aspects of recognition, participation, capabilities and distribution can be shaped for just urban planning in the scripted environment of a role-playing game. To further explore the potential of multispecies role-playing games, we discuss their future use in the education of planners, its use as a participatory planning practice and its role as a research method. In doing so, we consider the opportunities and challenges of using the method to better include more than human voices in urban sustainability planning.

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Keywords:

Serious games; Role-playing; More-than-human thinking; Multispecies Justice

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Gamifying Participatory Design: A Digital Platform for Urban Renewal in Gangxia Urban Village, Shenzhen

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The rapid industrialization and urbanization in China have transformed rural landscapes into urban areas, giving rise to urban villages. Shenzhen, with over 1,000 urban villages housing approximately 7 million permanent residents and migrants, presents a unique context for studying these transitional spaces. Gangxia, located in the heart of Shenzhen, serves as an exemplary case to explore the intersection of social complexity, policy shifts, and digital innovation in urban renewal.

This study focuses on the design and implementation of a gamified digital platform tailored for Gangxia Urban Village. The platform aims to engage diverse social groups, including migrant workers, landlords, and government stakeholders, in participatory urban planning. Through a gamification approach, residents are encouraged to contribute their insights, voice concerns, and collaborate on community development initiatives. The platform integrates elements such as interactive feedback systems, reward-based participation, and scenario simulations to foster active involvement and enhance communication among stakeholders.

The research adopts a qualitative methodology, incorporating a literature review, in-depth analysis of Gangxia's socio-economic and policy context, and semi-structured interviews with residents and policymakers. The findings highlight the pressing need for digital tools that address the unique challenges of informal urban areas while bridging the digital divide.

By proposing a gamified workflow for participatory planning, this study illustrates the potential of digital participatory design to enhance inclusivity and efficiency in urban renewal. It emphasizes the importance of tailoring technological solutions to local contexts and creating engagement strategies that resonate with diverse community groups. This research contributes to the broader discourse on the role of emerging technologies, such as gamification and artificial intelligence, in fostering resilient, inclusive, and sustainable urban environments.

Keywords:

Urban Villages, Gamification, Digital Participatory Design, Digital Platform—Urban Renewal, Shenzhen

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T_11 EMERGING TECHNOLOGIES (0) / 1601

The Study on the Measurement and Enhancement Strategies of Urban Street Space Quality Based on Street View Images: A Case Study of Streets in the Central Urban Area of Xi'an

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Identifying the spatial quality characteristics of urban streets is the key to realize scientific planning and effective management of urban streets. It provides the basis for the optimization of urban spatial layout and promotes the intelligent and sustainable development of cities. However, previous studies are mostly limited to some neighborhoods and lack a systematic analysis of street quality in large-scale urban areas. Therefore, this study integrates the spatial pattern data and streetscape image data of the main urban area of Xi'an, constructs a quantitative database of street spatial quality, and establishes a measurement system from the dual dimensions of objective physical space and subjective perception. The system covers eight indicators, including pavement feasibility, motorized traffic influence, road surveillance, sky visibility, green visibility, street interface transparency, street interface richness, and pedestrian accessibility, to achieve a large-scale assessment of the spatial quality of streets in the main urban area of Xi'an. The results of the study show that: (1) the spatial quality of streets in the main urban area of Xi'an is characterized by a "high in the center - low in the periphery" circle distribution, and high-quality streets and low-quality streets have significant clustering characteristics. (2) There are complex interactions and spatial spillover effects among various elements of street spatial quality. For example, the improvement of road surveillance can enhance walking safety, promote walking trips, reduce the dependence on motorized vehicles, and thus alleviate traffic congestion and environmental pollution. (3) The street quality assessment results based on the two-dimensional measurement system are more consistent with the field research perception evaluation ($Kappa=0.72$) and significantly better than the single objective indicator model ($Kappa=0.53$), indicating that the integration of subjective and objective dimensions can improve the accuracy of identification. (4) Optimizing the spatial quality of streets requires a multidimensional synergistic strategy, including enriching the functions of street interfaces, strengthening the design of road surveillance and lighting, and improving greening and pedestrian facilities.

By quantitatively analyzing the differences in street spatial quality in Xi'an, the research results can provide scientific references for urban street planning, functional positioning and management, and provide a reference for the development of spatial quality improvement strategies in other cities.

Keywords:

Urban Street Spatial Quality; Streetscape Images; Subjective and Objective Measurement Methods

T.11 EMERGING TECHNOLOGIES (0) / 737

The Role of Urban Diversity in Shaping Spatiotemporal Vitality: Evidence from Shanghai

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Urban vitality, as a key indicator of urban development, has long been a central concern in urban planning. Jacobs suggests that 24-hour human activity is the foundation of vitality, and urban diversity is the key factor in shaping this vitality (Jacobs, 1989). Understanding the spatiotemporal patterns of urban vitality and the role of diversity is crucial for enhancing vitality, fostering economic prosperity, and improving residents' well-being.

This study conducts an empirical analysis of Shanghai to explore the relationship between diversity across different dimensions and block-scale vitality. Existing research suggests that vitality distribution is influenced by urban morphology (Li et al., 2022). However, most studies focus on static urban vitality analysis, lacking an in-depth exploration of its spatiotemporal dynamics. This study aims to address the gap by exploring the temporal and spatial dimensions of vitality through a multi-faceted analysis. It specifically focuses on two key questions: how urban diversity relates to spatiotemporal vitality patterns, and to what extent different dimensions of diversity influence vitality.

This study employs multi-source data to measure urban diversity indicators and spatiotemporal vitality. Building upon an extension and scale adaptation of Jacobs' classical theory, the research dissects diversity into three dimensions: demographic, urban form, and functional diversity. To analyze the spatiotemporal patterns of vitality, Dynamic Time Warping (DTW) clustering is applied, effectively capturing temporal relationships and similarities in vitality (Petitjean, Ketterlin and Gançarski, 2011). Additionally, nonlinear machine learning methods are used to quantify the relationship between diversity indicators and vitality stability, identifying key indicators and their thresholds that influence vitality.

The results indicate a complex nonlinear relationship between diversity characteristics across different dimensions and spatiotemporal vitality. Overall, increased diversity contributes to maintaining high vitality, consistent with classical theory. The study also finds that functional diversity exhibits a threshold effect, with varying threshold characteristics observed across different urban zones in Shanghai.

This study validates Jacobs' classical theory, and incorporating the temporal dimension and providing a quantitative analysis of influence thresholds. It not only provides empirical support for the classical theory in the context of modern urban planning but also advances the theoretical understanding of the shift in urban planning from subjective design to scientific analysis. The findings lay a theoretical foundation for the balanced allocation of resources and the optimization of urban spatial structure, thereby contributing to the development of vibrant, diverse, and sustainable urban environments.

Keywords:

Urban Diversity ; Spatiotemporal Vitality ; Urban morphology

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Track 12 | DISASTER-RESILIENT PLANNING

T_12 DISASTER-RESILIENT PLANNING / 1644

Evaluating Urban Resilience Capacity for Transformative Spatial Planning

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Spatial planning today confronts urban and territorial contexts shaped by interconnected global shocks and risks, collectively described as a “polycrisis” (WEF, 2023). Rapid urbanization, climate change, escalating resource demands, and increasing uncertainty and complexity, affect urban and metropolitan settlements. Urban areas play a critical role in both adaptation and mitigation (IPCC, 2023), accounting for two-thirds of global greenhouse gas emissions and energy use, making them both drivers of and vulnerable to climate-related effects such as heatwaves, floods, and biodiversity loss (UCCRN, 2018; UN-Habitat, 2022).

While international agreements such as COP28 have emphasized a transition away from fossil fuels, climate adaptation also requires transformative changes in spatial planning. This involves integrating resilience into planning (Brunetta and Caldarice, 2019), along with a broader rethinking of growth-centric development models to promote multidimensional well-being frameworks.

Our research, developed within the framework of the RETURN Extended Partnership, explores the concepts of urban and transformative resilience (Meerow et al., 2016; Giovannini et al., 2020), emphasizing the ability of urban systems to maintain essential functions while continuously learning and evolving to enhance their capacity to respond to future shocks. To advance this vision while considering the absence of standardized frameworks for assessing urban resilience, this study aims to develop a comprehensive set of progress indicators to evaluate the resilience capacity of territories in an integrated and spatially explicit way.

Through a systematic literature review and empirical application, this research explores the multidimensional nature of urban resilience –encompassing built, environmental, social, economic, and institutional dimensions –and underscores the need for a holistic approach to inform urban design and planning in assessing and enhancing urban resilience. The study begins with analyzing existing literature on urban resilience measurement, utilizing a keyword-based search in the Scopus database. This process resulted in a catalogue of selected progress indicators, designed as a flexible tool to assess resilience at various scales –particularly from urban to district levels –and to support monitoring, scenario evaluation, and policy design.

Key findings highlight the challenge of measuring resilience due to the lack of universally accepted definitions and metrics. Traditional approaches often focus on specific risks or urban components, leading to incomplete assessments (Rus et al., 2018). To address these gaps, this research proposes a multidimensional framework that facilitates more comprehensive evaluations. The indicator set was significantly refined to produce a definitive version, addressing underrepresented topics and gaps. This refinement also considered criteria such as spatialisation (particularly in GIS environments), applicability at the district scale, and data availability to ensure its effectiveness across diverse territorial contexts.

The framework’s practical application, tested within the city of Turin (Italy), facilitated the evaluation of resilience capacity in response to risks such as flooding, air pollution, and urban heat island effects. This process involved interpreting the current state of resilience and identifying potential transformation scenarios to guide urban-scale policy

development.

The research findings emphasize the importance of tailoring resilience assessments to local contexts while ensuring transferability across different scales. This study advocates for a shift in the foundational assumptions of spatial planning –from reactive, recovery-based responses to proactive, resilience-oriented strategies. By bridging the gap between theoretical foundations and practical application, the research contributes to a deeper understanding of urban resilience and provides valuable tools for planning processes. Ultimately, the study underscores the necessity of aligning spatial planning with emerging paradigms, such as post-growth models, to achieve multidimensional well-being and equitable development.

This study was carried out within the RETURN Extended Partnership and received funding from the European Union Next-GenerationEU (National Recovery and Resilience Plan-NRRP, Mission 4, Component 2, Investment 1.3-D.D. 1243 2/8/2022, PE0000005) – SPOKE TS 1.

Keywords:

Urban resilience; adaptive capacity; progress indicators; transformative resilience; spatial planning

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T_12 DISASTER-RESILIENT PLANNING / 435

Planning for managed retreat : challenges and innovations to address long-term uncertainty in France and New Zealand

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Facilitating the adoption of innovative adaptation strategies by populations at risk is one of the major challenges that public authorities will be facing over the coming decades.

For example, rising sea levels and the recognition that millions of additional individuals will be exposed by 2100 underscore the growing relevance of managed retreat as a viable option (Haasnoot, Lawrence and Magnan, 2021). This transformative approach, which changes the way cities are designed (by prioritising the risk constraint in planning), plans are drafted (by creating specific zoning) and space is used (by encouraging prevention through signage), is leading to a rethinking of the relationship humans-environment. By moving built infrastructures out of harm's way in anticipation, it is also leading to a rethinking of planning processes. However, how can we plan the retreat, putting homes, businesses and people safe in the long-term ? How choices are made to deal with long-term uncertainty in planning can be questioned : are these choices made objectively or are they guided by political considerations, which may result in prioritising development needs in at-risk areas in order to meet short-term needs ?

It would seem, given the regular press articles denouncing new projects in risky areas, that the latter option tends to prevail. However, a closer look at the subject reveals the diversity of situations at different scales. Several approaches can be differentiated according to the vulnerability of the regions, the risk culture, or political context. Drawing on fieldwork and interviews conducted since 2023, this study compares national and local approaches to coastal adaptation by planning in France and New Zealand to understand how uncertainty is managed. France, with its centralized governance system, has historically relied on rigid regulatory instruments to manage risks. The implementation of managed retreat as part of the National Strategy for Integrated Coastline Management (Ministère de l'Écologie, du Développement durable, des Transports et du Logement, 2012) reflects a growing recognition of the need for proactive and preventive spatial planning. However, the rigidity of the regulatory framework prevents a degree of adaptability in planning documents : in fact, the regulatory mille-feuille is regularly criticised. Responses to this lack of flexibility were provided by the 2021 Climate and Resilience Act, but no results have yet been seen.

In contrast, New Zealand presents a more decentralized approach, characterized by strong local autonomy and a distinctive cultural dimension driven by Māori values. The introduction of dynamic adaptive policy pathways (Lawrence et al., 2019) into local strategy development processes signals a paradigm shift. The public authorities are relying on a method of decision making under deep uncertainty, derived from Dutch research. However, the non-binding nature of these tools is questionable given the long-term issues involved in adapting these vulnerable areas.

Today, planning is not a process of adaptation, but a means of development and land control. With climate change, regulatory processes such as spatial planning will have to be reinvented and transformed. On the coast, it is no longer possible to develop in the same way as at the beginning of the century because of the pressure of erosion and sea level rise, and sometimes retreat is already necessary. In order to cope with these dynamic forces, France and New Zealand will probably have to change the way they plan. This paper aims to illustrate the paradigm shifts occurring in coastal adaptation planning in both countries through specific case studies. It argues for an urgent reevaluation of planning models to better address the challenges of climate change and coastal vulnerability, emphasizing the necessity of adaptive and forward-looking approaches in spatial planning.

Keywords:

retreat ; uncertainty ; France ; New Zealand ; transformation

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Industry 5.0 as a Tool For Strengthening Urban Resilience Against Crises

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Cities, which host more than half of the world's population, play a significant role as centers of economic, social, and cultural activities. However, this density also turns cities into hubs of crises. Especially today, the changing climatic conditions further complicate the effects of current urban threats, increasing the vulnerability of components that make up the city, such as economic activities, public health, urban infrastructures, and the built environment, to urban crises (UNDP, 2021). In response to these crises, the concept of urban resilience has emerged since the 2000s. The concept is generally defined as "the capacity of people, particularly low-income, marginalized, and excluded groups living and working in cities, to survive and develop against urban risks" (ARUP & Rockefeller Foundation City Resilience Index, 2014).

When examining the development of today's cities, it can be seen that urban development and transformation have gone hand in hand with changes in production processes. Additionally, vulnerabilities in production activities, which are one of the fundamental functions of social life, have become one of the primary issues to be addressed in the context of urban resilience. Cities that experience the least loss in production organizations are generally those that have the capacity to return to normal operations in the shortest time (Balamir, 2012).

Global events such as the 2008 Economic Crisis and the 2020 COVID-19 Pandemic have made it mandatory to rethink production processes. Such crises typically highlight the need to reconsider current production and urbanization models. In this context, a new urban model has emerged in which deindustrialization is reversed and the integration of industry back into urban areas is achieved. Industry 5.0 can be defined as the power to create a resilient system that strengthens human living capacity by making production respectful of the planet's boundaries and placing the well-being of industrial workers at the center of production processes, beyond work and growth, with the aim of achieving social goals (European Commission, 2021).

This study will examine the role of Industry 5.0 focused production processes in enhancing resilience against urban crises. In today's world, where cities are prominent due to their intense consumption and waste production, how can Industry 5.0 production methods transform urban metabolic processes, and how can this transformation increase urban resilience to crises? A new model proposal will be presented regarding how Industry 5.0 can create changes in physical space and urban metabolism, and the role of this model in ensuring resilience against crises will be discussed.

The study will focus on how the changes brought by Industry 5.0 production processes will transform urban metabolism, which is generally defined as the assessment of the amount of resources produced and consumed by urban systems, and how this transformation will strengthen resilience against urban crises.

In this context, the study will investigate how the production methods of Industry 5.0 will create patterns of land use and urban fabric in cities, what types of planning and design actions will emerge regarding energy, water, and waste flows, which are the components that constitute urban metabolism, and how these transformations will hold potential

for crisis resilience. The study aims to discuss the potential of Industry 5.0 focused production processes to enhance urban resilience and contribute to the development of innovative strategies for crisis management.

Keywords:

Urban Resilience; Urban Crises; Industry 5.0; Urban Metabolism

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What Are the Obstacles in the Recovery Process Considering the Role of Actors? The Case of the Kahramanmaraş Earthquake in Turkey

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Turkey has been significantly affected by earthquakes throughout its history. However, awareness and institutional responses to disasters underwent a major turning point after the 1999 Marmara earthquake, particularly as the country's main economic hub was impacted. More recently, on February 6, 2023, the Kahramanmaraş earthquakes struck eleven provinces in southeastern Turkey, causing major disruptions to the socio-economic structure of the region. Each province and urban-rural area within the affected region displayed distinct characteristics, and therefore, the earthquake's impact has varied.

The earthquake-affected region has diverse socio-economic and spatial structures. Gaziantep, Adıyaman, and Kilis are strong in industry and trade, while Hatay, Kahramanmaraş, and Osmaniye are more focused on agriculture and energy. Malatya and Elazığ balance among the sectors of mining, agriculture, and industry, whereas Şanlıurfa and Diyarbakır are transitioning from agriculture to industry and services. Unemployment is lower in Gaziantep, but higher in Hatay and Kahramanmaraş. Migration is significant in Gaziantep, Hatay, and Şanlıurfa, while Gaziantep benefits from a strong transport network, and Hatay is strategically positioned for maritime trade. The earthquakes affected 13.9 million people, forcing 3.3 million to relocate (Sağıroğlu et al., 2023). Economic losses exceeded \$87 billion (TÜRKONFED, 2023), critical infrastructure suffered severe damage, and unemployment rose above 20% (Artantaş & Gürsoy, 2024). The destruction also disrupted regional supply chains and exacerbated socio-economic vulnerabilities.

The aim of this study is to evaluate the post-earthquake recovery process in the provinces impacted by the Kahramanmaraş-centered earthquakes, taking into account both short-term and long-term recovery perspectives. Through a systematic review of research articles, institutional reports, and local news sources, the study identifies actions, challenges, and impact levels, while examining the varying degrees of disaster-impact across provinces. Similarities and differences are highlighted using content

analysis.

In this context, the recovery processes of heavily affected provinces, such as Adıyaman, Hatay, and Kahramanmaraş, will be compared with those of less affected areas, assessing how regional differences influence policy-making. This approach will contribute to the development of region-specific strategies and a better understanding of lessons learned from previous experiences. Additionally, an analysis of stakeholders will be conducted to examine the roles of various actors in the recovery process. Government institutions play a key role in the recovery process, focusing primarily on reconstruction, economic recovery, and resource allocation. However, the involvement of local governments, the private sector, NGOs, and international organizations is also crucial. Non-governmental organizations (NGOs) provided both immediate and long-term assistance, organized community-based solidarity initiatives, and facilitated neighborhood outreach efforts. Whereas international organizations contributed significantly to the recovery process by providing both financial and technical support. However, the roles of these various stakeholders have not been fully analyzed. Therefore, the findings of this study aim to offer new insights into the actors involved and the power dynamics at play, providing a clearer understanding of the obstacles to recovery in the affected areas.

Keywords:

Recovery; earthquake; actors; power relations; Turkey

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Flood Risk Perception Under the Levee Effect: Adaptive Management Strategies for heterogeneous individuals

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Extreme phenomena caused by climate change have led to an increasing intensity and frequency of precipitation events, gradually becoming normalized. In light of these rising flood risk challenges, most urban area engineering structures remain the prevailing flood risk management strategies to reduce the impact of flooding. However, the short-term effectiveness of these structural measures in alleviating flooding may create a false sense of safety, which can lower people's risk perception, ultimately leading to an increase in risk over time. This paradoxical phenomenon is known as the "levee effect" (White, 1958; Burby, 2006; Ding et al., 2023). However, whether the change in risk perception caused by this levee effect is consistent across all groups or whether it varies due to heterogeneous individuals of the groups is worth further investigation.

The methods of risk analysis are usually based on objective measures, but subjective risk assessment, such as risk perception, is still currently considered a crucial aspect in the context of flood risk management (Kellens et al., 2011). Risk perception describes how an individual 'assesses a threat's probability and damage potential,' and its variation is influenced by individual conditions, including education, age, societies' views, knowledge,

and disaster experience (Babcicky & Seebauer, 2016). Research on the levee effect and risk perception shows that residents in the 'Floods continuing' group had higher levels of Flood awareness and risk threat assessment; on the contrary, residents in the 'Floods slowing' group had lower levels of flood awareness and risk threat assessment (Chang et al., 2022). However, within these groups, there may still be differences in risk perception due to heterogeneous individuals. Therefore, in flood risk management, risk perception should consider individual conditions and further classify the differences in risk perception across different groups to formulate appropriate strategies for specific local groups. The purpose of this research is to explore the impact of heterogeneous individuals on risk perception in the context of the levee effect and develop adaptive strategies suitable for different types of groups. The study focuses on Tainan City, Taiwan, as the empirical research area. First, the relevant literature is reviewed to summarize the evolution of urban flood control strategies, and the impact of engineering structures flood mitigation measures on risk perception. A questionnaire is designed based on past flood management approaches and risk perception measurement indicators. Spatial analysis is used to identify the concentration of flood-prone areas and the spatial distribution of flooding events, which serve as the potential spatial scope of the levee effect for the survey. Finally, through cross-tabulation analysis, groups with similar individual characteristics are classified and compared, identifying the factors most influential on risk perception and the differences in risk perception across different groups. This study aims to address the neglect of heterogeneous individuals in flood risk management. The focus is on areas affected by the levee effect, exploring the differences in risk perception among different groups when facing flood risks. It is hoped that by understanding the characteristics of other groups, driving policies suitable for their features can be designed, risk awareness can be enhanced, and effective flood risk mitigation measures can be taken to provide more precise adaptive management and planning policy references for future flood risk management.

Keywords:

Keywords, Levee Effect, Risk Perception, Adaptive Strategies, Flood Risk Management, Cross-tabulation Analysis

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Rebuilding Resilient Cities and Communities in Southeastern Türkiye: Relation Between Urban Planning and Data Governance

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The February 2023 earthquakes devastated southeastern Türkiye, with Adıyaman and Hatay provinces suffering extensive destruction. Beyond the immediate challenges of reconstruction, the disaster underscored the need for resilience-oriented urban and regional governance systems capable of addressing long-term vulnerabilities. This research presents the **Resilient Cities and Communities (RCC) Project**, initiated by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, as a governance-driven approach to post-disaster recovery. Anchored in the “*Build Back Better*” principles, the Project integrates digitalisation, inclusive stakeholder engagement, and evidence-based planning to strengthen local municipalities’ capacity for sustainable reconstruction and long-term resilience.

The purpose of this research is twofold: to demonstrate how governance innovations, grounded in institutional learning and multi-level collaboration, can transform post-disaster recovery into an opportunity for sustainable urban and regional development; and to explore the mechanisms through which cross-boundary governance enables resilience, inclusivity, and sustainability in complex post-disaster contexts. This study will also highlight the importance and the strong relationship between urban planning and urban data governance through experience sharing.

The principal results of the Project’s interventions in both Adıyaman and Hatay highlight the effectiveness of cross-boundary governance in addressing multi-scalar challenges during post-disaster recovery. A key outcome was the enhancement of technical capacity through the deployment of open-source urban information systems (UIS), tailored to the specific needs of the municipalities. These systems significantly improved data-driven decision-making, enabling local authorities to identify priority areas for reconstruction and implement sustainable solutions based on comprehensive data analysis. Additionally, the human capital development component of the project proved crucial, as targeted training initiatives equipped municipal staff and relevant stakeholders with the necessary skills to navigate the complexities of post-disaster recovery effectively. By fostering a culture of continuous learning and innovation, these programs not only enhanced the municipalities’ capacity to manage the immediate recovery efforts but also ensured they were better prepared to adapt to future challenges. The networking and cooperation aspect of the Project further strengthened these outcomes, facilitating active knowledge exchange among various stakeholders, including municipalities, communities, and international partners. This collaborative approach supported the resolution of generative conflicts and encouraged institutional learning, which, in turn, contributed to the development of more responsive governance structures, capable of adapting and evolving in response to ongoing challenges.

The Project underscores the transformative potential of governance innovations in post-disaster contexts, demonstrating how responsive and adaptive approaches can address complex challenges. A critical conclusion drawn from the project is the importance of responsive governance, which fosters institutional learning and cross-sectoral collaboration. By creating “soft spaces” that transcend traditional administrative boundaries, the project enabled flexible solutions tailored to the unique needs of affected regions. Additionally, the integration of digital transformation emerged as a powerful catalyst for resilience, with urban information systems bridging data gaps, optimizing resource allocation, and facilitating evidence-based decision-making in both Adıyaman and Hatay. The project also highlighted the centrality of sustainability as a guiding principle, ensuring that economic, social, and environmental considerations were embedded into all reconstruction efforts. This approach addressed immediate recovery needs while laying a foundation for long-term resilience. Furthermore, the emphasis on community engagement proved essential in aligning reconstruction initiatives with the needs and priorities of affected populations. By fostering inclusive participation, the project reinforced principles of equity and upheld the “*right to the city*” for all residents. Together, these findings contribute to the broader discourse on governance and planning by offering a replicable model for addressing the multi-dimensional challenges of post-disaster recovery. The Project illustrates the powerful interconnection of institutions, actors, and ideas, demonstrating how innovative governance practices can lead to resilient, inclusive, and sustainable urban and regional development.

Keywords:

Resilience; Urban Information Systems; Good Governance; Data Management; Post-Disaster Recovery

T_12 DISASTER-RESILIENT PLANNING / 71**Resilience in Public Utilities: Management Strategies to Mitigate the Impact of External Shocks****Author:** Eri Nakamura¹**Co-author:** Fumitoshi Mizutani ¹¹ *Kobe University***Corresponding Authors:** toshi@kobe-u.ac.jp, enakamura@person.kobe-u.ac.jp

We investigate effective management strategies for public utilities to mitigate the impact of various external shocks, including disasters, pandemics and financial crises. For public utilities such as transport, energy, water supply and telecommunications, ensuring the stability of their services during emergencies is a critical issue, as their services are essential infrastructure for society. While previous studies have examined resilience in general private enterprises (e.g. Dimitriadis, 2021; Iftikhar et al., 2021; Mao et al., 2023), there is a lack of research in public utilities. The management of public utilities differs from that of general private firms because, as providers of essential services, public utilities are subject to strong social pressure and government intervention to ensure stable service provision. In fact, in emergencies, the recovery of social infrastructure is necessary for the recovery of citizens and general businesses affected by the external shock. Therefore, the resilience of public utilities is critical to the stability of an entire community, and cooperation with government, communities and citizens is particularly important as possible strategies to respond to emergencies in public utilities.

As emergencies with different characteristics require different preparedness and response strategies, we compare three types of emergencies according to the degree of predictability of the recovery process: natural disasters, pandemics, and financial crises. For example, the recovery process for natural disasters is relatively predictable based on past experience, while pandemics are relatively difficult to predict. This means that preparedness plays a critical role in disasters, while ex-post response can be an important strategy in pandemics. While previous studies have focused on a single specific type of emergency, such as financial crises (e.g. Erkens et al., 2012) and COVID-19 (e.g. Mao et al., 2023), generalisation by comparing different types of external shocks has not been sufficiently explored.

Therefore, we construct an empirical model that considers different types of emergencies in the same framework. The empirical analysis is conducted using a dataset of 28 railway operators in Japan from 2005 to 2022, which includes the occurrence of significant events for each type of emergency: the Great East Japan Earthquake, the COVID-19 pandemic, and the 2008 financial crisis. According to Essuman et al. (2020), resilience can be defined as the ability to absorb shocks and recover from disruptions. Based on this, we assume that the preparedness for absorbing shocks can be addressed by proactive measures and the recovery by post-response measures. Therefore, our variables related to possible management strategies include managerial preparedness (e.g. slack resources, risk diversification, and diversified funding), managerial response (e.g. raising funds for recovery), stakeholder preparedness (e.g. governance through government intervention and mutual support mechanisms between operators) and stakeholder response (e.g. government support and social support). Our analysis examines the impact of these strategies on the resilience of operators, measured by the inverse of the deviation of output performance from that of the previous three years.

The preliminary analysis shows that organisational slack and diversification contribute to recovery from external shocks, while the use of short-term debt has a negative effect

on recovery. Shareholdings by managers, the state, banks and foreign companies generally have no significant impact on resilience. However, the concentrated structure of shareholdings has a negative impact on the recovery.

Our study identifies strategies that significantly contribute to the resilience of public utilities for three types of emergencies. We therefore provide practical implications for mitigating risks and recovering from shocks affecting social infrastructure. While we focus on the railway industry, our implications can be applied to other public utilities with similar characteristics that provide essential services. The details of the study will be discussed at the conference.

Keywords:

Resilience; Public Utilities; External Shock; Disaster Preparedness; Pandemics

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Heavy rainfall, critical consequences? - Risk analysis of the impact of flood related street blockades on emergency medical services coverage in Münster, Germany

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Heavy rainfall and resulting floods pose an imminent threat to critical infrastructure (CI) (Fekete, 2021). Roads are especially vulnerable, as they might become impassable for cars and emergency vehicles, leading to cascading effects that endanger the function of other critical services (Groenemeijer et al., 2015). Road disruptions present a major challenge for emergency medical service (EMS) Vehicles as they might lead to life-threatening delays in the provision of first aid (Benden, 2014).

This research presents a GIS-based methodology to examine the dependencies between flood-induced road disruptions and the emergency medical service coverage. The city of Münster, in which a heavy rainfall event in 2014 has led to the loss of lives and destruction of CI (Frerichs et al., 2015), was a cooperation partner for the study by providing data on flood levels in case of an extreme heavy rainfall event for the city area. The study determined the normal coverage areas of emergency medical services stations by using the ArcGIS Network Analyst and evaluated the flood exposure of critical roads

within the fire department's priority road network in case of an extreme heavy rainfall event. Within the fire department's priority road network 54 road sections in which the potential flood levels exceed the wading depth of EMS Vehicles were identified. Considering potential flood-induced blockades on all roads accessible to EMS Vehicles, coverage polygons of EMS Stations during extreme rainfall were again determined by using ArcGIS Network Analyst. Based on these polygons and considering municipally designated response time thresholds, the area of Münster was divided into adequately covered and underserved regions.

While under normal conditions about 63% of Münster's area is adequately covered, only 38% of the cities area is covered in case of an extreme rainfall. Considering population density at the city cell level, the amount of adequately covered population would decrease from circa 236.000 to 167.000 residents during an extreme heavy rainfall event. Under normal conditions suburban centers have lower emergency medical coverage, while the densely populated inner-city areas are generally adequately served. However, during heavy rainfall the coverage level in southern and eastern inner-city districts decrease significantly due to flood-induced road disruption, especially where EMS Stations connections to highly populated districts depend on railroad underpasses.

While further detailed flood simulations for identified neuralgic sections of the road network are recommended, the results can be useful for an evaluation of EMS station locations and future investments in measures that increase resilience. The presented methodology can be adapted for different flood scenarios or vehicle sensitivities, so that emergency infrastructure planning can better align with Münster's climate adaptation ambitions to ensure the continuity of critical services during extreme weather events.

Keywords:

Critical Infrastructure resilience, Flood Risks, Network Analyst, Emergency Medical Services

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Floods and Livelihoods: A Multi-dimensional Comparative Study of Territorial Space Planning Policies for Flood Detention Areas in China

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Flood detention areas (FDAs) in China, as unique geographical spatial units, serve the dual purpose of flood control and livelihood protection. These FDAs typically exhibit lower levels of socioeconomic development compared to their surrounding regions. In the context of escalating climate change and the increasing frequency of extreme weather events, the utilization of FDAs has become more frequent, intensifying competition for land between residents and floodwaters, thereby exacerbating the conflict between livelihood security and flood disaster management. Taking the Huaihe River Basin as a case in point, this region exhibits the highest population density and the most frequent use of FDAs among China's major river basins. Since 1950, these FDAs have been activated over 200 times, accounting for half of the national total. Presently, approximately 2.85 million people reside within these FDAs, with about 560,000 requiring relocation during flood events. The inherent contradiction between ensuring the safety of both upstream and downstream urban areas and improving the living conditions of residents within the FDAs presents a persistent challenge.

Developing systematic territorial space planning policies that encompass land use, population management, economic models, and other key factors is essential for addressing flood disaster challenges and ensuring sustainable socioeconomic development within these FDAs. This approach is both necessary and urgent. However, current policies in China predominantly focus on water conservancy project sectors, with limited attention given to the scientific planning of territorial space. Furthermore, these policies suffer from a lack of systematic structure, specificity, and consistency. Academic research on these policies is also fragmented, with a lack of comprehensive analysis and evaluation, which hampers evidence-based policy formulation and revision.

This study adopts a regional comparative perspective, focusing on all nine key FDAs within the Huaihe River Basin in China. It systematically collects and analyzes territorial space planning policies, as well as plans related to population control, infrastructure construction, safety construction, and relocation strategies for these FDAs. Using comparative methods, the study examines the commonalities, differences and distinctive features across multiple dimensions, including resident relocation, ecological restoration, infrastructure development, and economic growth. The analysis integrates both quantitative planning indicators and qualitative aspects of policy formulation and implementation. Additionally, an in-depth case study of the Mengwa FDAs is conducted to assess the outcomes of implemented policies and their interaction with local residents through surveys and interviews. This approach aims to provide a comprehensive understanding of policy impacts at the grassroots level.

This paper elucidates the prevailing issues and insights related to the current territorial space planning policies governing China's FDAs. **Issues:** While existing policies are relatively unified at the macro level, their implementation across various administrative levels exacerbates disparities. The current policy and regulatory system remain fragmented and underdeveloped. In practice, there are challenges related to inadequate alignment between government initiatives and resident needs, as well as significant difficulties in relocation processes. **Insights:** These include the establishment of unified planning standards, regional collaborative development, and post-planning evaluations, etc. In conclusion, this paper provides a solid empirical foundation for the formulation and revision of future policies, with the aim of enhancing the living standards of residents in FDAs and promoting sustainable development and social-spatial equity within these areas.

Keywords:

flood detention areas; Huaihe River Basin; territorial space planning; social-spatial equity; policies

T_12 DISASTER-RESILIENT PLANNING / 1450**Decentralisation as an Agent of Resilience? Evidence from Wartime Decision-Making and Planning in Ukraine****Author:** Yegor Vlasenko¹¹ *Laboratory of Urbanism (LAB-U), École Polytechnique Fédérale de Lausanne (EPFL)***Corresponding Author:** yegor.vlasenko@epfl.ch

The spatial notion of resilience has recently been extended into urban and territorial dimensions, reflecting the perspective on cities as complex and multi-level entities driven by constantly changing and evolving flows and relations (Krueger et al., 2022; Schröder, 2022). The recent bibliometric analysis showcases the accelerated proliferation of “territorial resilience” in the planning literature over the last decade (Pascariu et al., 2023). However, the scholars state a lack of clear and feasible tools to transpose resilient-based theories into concrete planning measures and policies. The growing interest in territorial resilience is explained by the increased demand to instrumentalise uncertainty and preparedness for unanticipated shocks in spatial planning (Balducci, 2023; Balducci, 2020; Armondi et al., 2023). The key to this is often embedded pre-existing governance models and the historical interaction of communities and risks (Brunetta et al., 2019).

Yet, the available methodologies often fail to address these components while defining resilient-oriented strategies and policies. A review of the recent studies of territorial resilience showcases their general reliance on quantitative modelling based on a pre-determined set of parameters describing both the factors of resilience and the specific social-ecological features of the territory (Assumma et al., 2024; Assumma et al., 2019; Pilone et al., 2019; Suarez et al., 2016). Despite being presented as a “decision support system,” such studies can be difficult to understand and appropriate for planners and local authorities.

Scholars also note the lack of a relational perspective on resilience, emphasising the need to expand the biophysical origin of the concept to include the socio-economic and institutional aspects (Davoudi 2012; Allen et al., 2020). Vale (2014) found that the resilience research agenda should not just assess the design products but also consider the general power dynamic that enables new forms of development. In particular, in cases of sudden destruction followed by a protracted recovery period, it is important to reflect on the dominant groups for whose benefit the recovery storyline is constructed. Long (2021) warns of the emergence of “crisis capitalism” based on exploiting post-disaster debt finance disguised as sustainable development.

Allen et al. (2020, 477-479) list the limitations of available operationalisations of resilience in spatial planning and policy, ranging from the reliance on theoretical discussion from developed countries and ignoring context-specific factors to treating different types of shocks equally regardless of their origin, not differentiating between unexpected events, such as natural disaster, and contentious and unwanted, such as social upheaval or war. Applied to public actors, operationalising resilience may undermine their accountability for disasters (ibid., 483).

The presentation addresses the context of war-related crises in Ukraine, viewed as a complex security, socio-economic, and environmental disaster. It derives from the consensus in the literature concerning the positive role of decentralised local governance and collectivity in addressing the early stage of the war-related crises in Ukraine (Romanova & Umland 2024; Keudel & Huss 2024; OECD 2022). Based on the interviews with expert informants in two Ukrainian municipalities of Lviv and Sumy, it aims to critically explore the role of local governance and decision-making in generating regulations for post-disaster recovery. Based on qualitative coding, it also traces the evidence of their transfer to land use and strategic plans adopted by these municipalities in 2022-2025. Obtained findings are discussed within the debate on operationalising urban and territorial resilience in spatial planning.

Keywords:

resilience; local governance; spatial planning; decentralisation

T_12 DISASTER-RESILIENT PLANNING / 1248**Sprawl on Flood Risk : Focusing on Land Use Planning and Fragmentation Index in Coastal City****Author:** Segyo Seo¹**Co-author:** Juchul Jung¹¹ *Department of Urban Planning and Engineering, Pusan National University***Corresponding Authors:** plan_ssg@pusan.ac.kr, jcjung@pusan.ac.kr**[Problems]**

People have a desires to own coastal landscapes. The purpose of zoning is for land to be used in a way that enables all people to access coastal spaces and be safe from the impacts of climate change. According to prior studies, coasts are structurally vulnerable to flooding, and it is important to secure disaster-preventive area by zoning.

However, in many coastal cities in South Korea, zoning is used to privatize coastal landscapes, and preserve personal property, which puts people at risk. As development progresses, residential buildings aggressively encroach on the coast. Every year, the government invests considerable amount of money in disaster prevention to protect residents'property. But what if zoning had been carried out correctly from the beginning?

Most previous research has focused on the choices and risk perceptions of people who decided to reside on the coast despite the risks. However, if land-use regulations had not been relaxed, demand would have been controlled. This study uses the landscape index to analyze how land-use deregulation affects sprawl and how much the risk increases.

[Research Methodology]

The study area of this paper covers highly developed coastal areas in Busan, South Korea. Busan is the second-largest city in South Korea and the most popular with coastal tourism. Additionally, high-rise building development is actively taking place adjacent to the Busan coast. In this study, we traced the zoning changes along the coast, which has been rapidly developing since the mid-2000s.

Based on the correlation between fragmented development and sprawl, we analyzed the impact of land use deregulation on sprawl and disaster exposure. The analysis used geo-coded data for 26,000 grids of 200m*200m. The impact of land use regulation relaxation on fragmentation index and disaster exposure index was analyzed through multiple regression, and the development spread pattern according to fragmentation type was presented. In addition, MANOVA was performed on variables that were found to be significant to analyze the differences according to coastal proximity.

[Findings]

As a result of the analysis, it was confirmed that deregulation was the cause of fragmented development in many aspects such as the area of development relaxation and the number of development relaxation cases, which had a direct effect on sprawl. And the degree of effect was different depending on coastal proximity. In addition, it was found that development due to the relaxation of land use regulations increased exposure to disasters.

[Conclusion and Discussion]

Three implications can be derived from the results of this study. First, the relaxation of zoning not only puts many people at risk but also encourages private use of public resources. Second, the coast satisfies both aesthetic preferences and economic interests. It is evident that if land use regulations are relaxed, people's demands will become concentrated at coast. Third, The results of this study suggest that the continuous deregulation has an impact on coastal development expansion and, furthermore, on development that could be a threat in the era of climate change. This result can be used as a basis for future urban planning decisions.

Keywords:

Flood, Sprawl, Fragmentation index, Land use planning

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T_12 DISASTER-RESILIENT PLANNING / 1319

When Buses Become Beacons: Rethinking Buses as Adaptive Responders in Crisis—A Chinese Perspective

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Modern urban transportation systems prioritize efficiency and precision, often overlooking resilience and adaptability under extreme events. While transit-priority policies have gained global recognition, their systemic value in emergency response remains under-explored. This study re-evaluates the role of urban public transit—particularly buses—in extreme scenarios, emphasizing their potential to enhance urban resilience.

Unlike metro systems, which dominate the discourse on urban transportation during crises, ground buses are an underappreciated yet critical component of urban mobility networks. Their inherent flexibility allows rapid resource deployment and service reconfiguration, making them indispensable in scenarios of constrained resources and dynamic, unpredictable demand. However, existing research rarely addresses the mechanisms by which buses adapt to emergencies or the policy and planning measures required to support such adaptations. This study aims to fill this gap by addressing two key questions: how do buses respond dynamically to extreme conditions, and how can their planning and governance frameworks be optimized to enhance resilience?

Using empirical data from China's emergency response cases—such as bus dispatching during the COVID-19 outbreak and service continuity during the catastrophic flooding—the study investigates the dynamic adaptation of buses. Grounded in theories of adaptive planning, resilient cities, and dynamic resource allocation, we propose a conceptual framework termed the **Crisis-Adaptive Transit System (CATS)**. This framework positions public transit not merely as an everyday service but as a strategic asset for crisis management. It identifies critical variables influencing bus system adaptability, including policy support, network flexibility, spatial distribution equity, and response time, extending the traditional focus on efficiency to encompass resilience and societal functions.

Key findings reveal that China's bus systems demonstrate unique strengths in crisis response:

1. **Network Density and Coverage:** Comprehensive spatial layouts provide a foundation for resilience.
2. **Public Ownership Model:** Facilitates rapid resource integration and redeployment.
3. **Digitalization:** Enhances real-time monitoring and effective scheduling.

During the COVID-19 pandemic, for example, urban bus systems across China implemented innovative service models and flexible strategies, ensuring essential mobility while supporting pandemic containment measures. These practices underscore the potential of ground buses as cost-effective, agile responders in extreme situations.

To translate these insights into actionable strategies, the study proposes a resilience-oriented planning framework for public transit under extreme conditions:

1. **Modular Network Design:** Develop hierarchical and redundant network structures to absorb disruptions.
2. **Intelligent Management Platforms:** Employ digital technologies to enhance real-time coordination and precise response.
3. **Community-Scale Micro-Networks:** Strengthen “last-mile” connectivity to bolster neighborhood resilience.
4. **Multi-Sectoral Collaboration:** Establish integrated governance mechanisms for crisis response.

These findings challenge conventional transit planning paradigms, which prioritize efficiency over resilience and equity. The study argues that adaptive planning and flexible operational mechanisms are essential for enhancing the emergency capacity of public transit. By integrating crisis response capabilities into the performance evaluation of transit systems, this research expands the theoretical and practical understanding of public transportation’s role in urban resilience. Furthermore, it highlights the global relevance of China’s practices, offering valuable lessons for the sustainable evolution of urban mobility systems amid growing climate challenges and increasing uncertainties.

In conclusion, this study advocates for a paradigm shift in urban transit planning—from efficiency-driven models to resilience-oriented frameworks. Ground buses, as cost-effective and flexible components of urban mobility networks, hold untapped potential to act as critical responders to extreme events, ensuring continuity and equity in urban transportation systems. Future research should explore pathways for integrating climate adaptation strategies into public transit planning, ensuring systems are robust, equitable, and responsive to diverse urban demands in the face of an increasingly uncertain world.

Keywords:

Buses; Extreme Events; Adaptive Planning; Emergency Response; Chinese Experience

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T_12 DISASTER-RESILIENT PLANNING / 1714

Agent-Based Modeling Applied to the Analysis of Landslide Risk Dynamics: A Virtual Laboratory to Explore the Underlying Mechanisms of Risk

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Climate change, driven by human activity, has intensified extreme weather events, causing significant losses, especially in vulnerable communities (IPCC, 2023). In Brazil, data from 2023 indicate that around 73% of the population lives in municipalities with high risk of flooding, flash floods, or landslides (Anjos, 2024). In this context, the integration between environmental risk management and urban management has gained more prominence nationally and internationally (Cabral; Cândido, 2019). However, its translation into effective public policies still faces limitations regarding the understanding of vulnerability or resilience states in cities.

Research has advanced to identify “risk,” and numerous quantitative and qualitative methods have been developed to model these processes. Background conditions leading to a “disaster” have been documented by frameworks like the Risk-Hazard and Pressure and Release models (Turner et al., 2003; Blaikie et al., 1994). Advances have also been made in mapping, measuring, and classifying areas of social vulnerability to risks (Cutter et al., 2003).

Insights into resilience in socio-ecological systems can contribute to a convergence of historically distinct research lines (Adgar, 2006). Resilience, from complex systems’ perspective, is defined as the ability to absorb disturbances before the system shifts to a different state and the capacity for self-(re)organization and adaptation (Mochizuki et al., 2018). Vulnerability refers to the degree a system is susceptible and unable to cope with adverse effects (Mochizuki et al., 2018). Traditional vulnerability analysis relies on static mapping and quantifying vulnerable areas, often ignoring the dynamic aspect of risk and the role of social actors in changing vulnerability states (Adger, 2006, Aerts et al., 2018).

Agent-based models (ABMs) provide insights into complex systems by modeling risk dynamics through environmental and social factors (Filatova et al., 2013). This research develops the Landslide Risk Simulation Model (LRSIM), aimed at contributing to public policies on urban management, exploring institutional actions through “what-if” scenarios. The research’s main goal is to understand landslide risk mechanisms in the emergence of vulnerability or resilience states, providing insights for urban and risk management. The model simulates landslides based on predisposing factors (environmental conditions such as slope, geology, geomorphology) and effective factors (land use, infrastructure, population density, precipitation). The empirical application area is Petrópolis, Rio de Janeiro, which has a history of large-scale landslides: 1967, 1979, 1988, 2012, 2014 and 2022. The February 2022 event resulted in 238 deaths.

The prototype was implemented in NetLogo and calibrated using two rainfall scenarios. Data comes from rain gauge records for the 2024 dates (no landslide occurrence) and 2022 rains (landslides occurrence). As expected, the model generated more landslides for the 2022 scenario. In the sensitivity analysis, the model shows sensitivity to the population density parameter, tending to locate landslides in areas with high population density and occupation typologies such as “favelas”(slums). The LRSIM is still in sensitivity analysis and validation process. The model will be validated by comparing the model outputs and landslide scars mapped in 2022 in Petrópolis. Once validated, scenarios will be created to test different urban management policies to minimize risks.

Keywords:

risk; landslide; agent-based models; urban management; socio-ecological systems.

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T_12 DISASTER-RESILIENT PLANNING / 1418

INVESTIGATION OF EARTHQUAKE DAMAGE IN TERMS OF DIFFERENT LAND COVERS: 2023 KAHRAMANMARAŞ EARTHQUAKES

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On February 6, 2023, Turkey experienced two major earthquakes, the first of 7.7 Mw and the second of 7.6 Mw, 8 hours apart. The epicenter of the earthquakes was Kahramanmaraş province. Along with this province, 10 other provinces were affected by these earthquakes, more than 50 thousand people lost their lives and approximately 40 thousand buildings collapsed.

Such a major disaster reveals the importance of studies on earthquakes and earthquake damage. Earthquakes and earthquake damage have been the subject of investigation by many fields of science. There are different studies such as examining ground characteristics, examining earthquake damage at the building scale, determining earthquake damage by remote sensing, and examining earthquake damage in terms of built environment and natural environment components.

However, within the framework of such a major natural disaster characterized as “the disaster of the century”, it is seen that studies on the damage caused by the earthquake in terms of different land covers such as built environment, forest area, agricultural area in the whole of the earthquake impact area are limited in the literature. In this respect, this study aims to analyze the damage caused by the Kahramanmaraş earthquake in terms of different land covers.

The question of the study is “does earthquake damage differ in different land cover types?”.

Two data sets were used in the study. The first data set is land cover. Land cover data for the year 2022 was taken from Esri Living Atlas application. This data created by the remote sensing method consists of water, forest, flooded vegetation, crops, built area, bare ground, snow/ice, and rangeland land covers.

The second data set is the regional damage proxy map. It was produced by the National Aeronautics and Space Administration (NASA). This map detects the change in the surface by comparing the satellite images before and after the earthquake and shows these areas as damaged areas. Damage proxy map is used in many studies for rapid damage assessment after disasters. The scope of the study was determined within the boundaries of the damage proxy map. This area is approximately 58 km².

These two data were superposed in geographic information system and earthquake damage rate was calculated for different land cover types.

According to the findings of the study, the damage rate is 3% in forest areas, 5% in agricultural areas and 14% in the built environment. In addition, the damage rate is 34% in bare ground, where there is no vegetation, and 29% in rangeland. It is thought that the higher damage rate in the built environment compared to agricultural and forest areas is due to human intervention and settlements that are not earthquake-resistant.

The high damage rate in the bare ground and rangeland is also related to landslides and erosion as secondary disasters after the earthquakes. In addition to the fact that earthquake damage is largely evaluated through the built environment and policies are developed accordingly, this study reveals that earthquake damage is also important outside the built area. Although it is important that the study addresses earthquake damage in a broad framework, it needs to be supported by lower-scale studies in land cover detail.

Keywords:

Earthquake; Damage Proxy map; Land cover; Disaster-resilient; Kahramanmaraş.

T_12 DISASTER-RESILIENT PLANNING / 775

Adaptive planning paradigms for resilient flood management: insights from Oslo and Copenhagen

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In recent years, climate change has exacerbated pluvial flooding, and consequently, flood risk management has become a key priority for our cities and society (Rosenzweig et al., 2018). A paradigm shift from resistance to resilience-focused strategies is emerging, emphasising the need for cities to 'bounce forward' to new equilibria rather than returning to pre-flood normality (Hegger et al., 2016). This requires a shift from modernist, blueprint-based planning, which views space as static, to adaptive approaches that recognise cities as dynamic, complex systems (Davoudi, 2021). Adaptive planning links flows of resources, people and knowledge, and searching for novel practices. It prepares cities for uncertainty by treating space as a relational, socially constructed entity.

The two concepts of resilience and adaptive planning have long been discussed in the literature (Kato & Ahern, 2008; McClymont et al., 2020), however, little is known on practical approaches. For this reason, the aim of this study is threefold: (i) analysing how spatial strategies and plans have promoted resilient flood management strategies; (ii) examining whether current planning practices still apply a blueprint form of planning or have moved towards updated forms of adaptive planning; (iii) analysing the outcomes of local planning approaches including planning tools, stakeholder involvement, knowledge production, as well as related contextual conditions that enable or constrain those approaches.

The study uses a comparative case study approach by analysing Oslo (Norway), and Copenhagen (Denmark). The two capital cities are chosen considering their vulnerability to cloudburst events and extensive experience in resilient flood management. Qualitative data are collected through the analysis of nine spatial planning documents (that include the municipal master plans, stormwater/cloudburst strategies, and action plans) and ten interviews with key stakeholders, including municipal officials, professionals and academics (that were conducted between March and November 2024). Thematic content analysis is applied, with analytical codes aligned with the study's objectives.

Results show that, in both cities, spatial strategies and plans provide a framework to support resilient flood management practices. Nonetheless, the two cities have two very different approaches to planning for flood management. Oslo model is based on a conceptual framework, the Stormwater 3-Step Strategy, which horizontally integrates all plan-

ning tools related to stormwater management. This horizontal integration is reflected in the strong cooperation between different municipal agencies and in the role assigned to private initiatives. For this reason, the knowledge produced has an important communicative role. On the contrary, Copenhagen model is based on a spatial framework, the Cloudburst Plan, which identifies the physical measures to mitigate flooding. This spatial framework has been able to specify a programme of interventions that provide a top-down control of urban transformations (e.g., green streets, retention areas). The Cloudburst Plan consists of an expert-driven process in which several scenarios have been evaluated through a cost-benefit analysis. The findings reveal that this process has been able to achieve its objectives and promote a change in the way rainwater is managed throughout the city.

Furthermore, the study highlights the crucial role of spatial planning in supporting resilient flood management and coordinating policies and stakeholders. Contextual conditions significantly shape local planning approaches. To specify, in Oslo, since 2016, financial, regulatory and organisational constraints have led the municipality to take a steering role that relies on private initiatives guided by local norms. In Copenhagen, since the 2011 flood and the consequent political pressure, local and national reforms have empowered the municipality to implement measures directly.

The study contributes to the discourse on resilience and adaptive planning by bridging theory and practice. Adaptive planning needs to integrate technical evidence to inform decision making with adaptive processes to pragmatically address and learn from emerging challenges.

Keywords:

Flood Management; Adaptive Planning; Urban Resilience; Spatial Planning; Case Study

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T_12 DISASTER-RESILIENT PLANNING / 1110

Balancing development and safety: spatial conflicts in Polish mountain region prone to flooding

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Managing flood-prone areas requires an effective integration of environmental protection, urban development, and community safety. Spatial conflicts, arising from differing social, economic, and environmental interests, present a significant challenge in spatial planning processes. This research focuses on analyzing public perceptions and assessing the effectiveness of local authorities' actions in high-risk areas, such as the Kłodzko Valley, which experienced severe flooding in September 2024.

Based on qualitative interviews with local residents, the study identifies key barriers and tensions in spatial management, including a lack of trust in institutions, limitations in crisis communication, and insufficient consideration of community needs in planning decisions. The findings also highlight the critical role of public education and participatory decision-making as tools for mitigating conflicts and fostering more sustainable adaptation strategies.

This research significantly enhances understanding how spatial conflicts influence the effectiveness of flood risk management and what measures can support the development of more resilient and sustainable spatial structures. The findings provide a basis for local authorities and spatial planners to develop strategies that integrate environmental protection, community needs, and economic development while minimizing flood risks.

Keywords:

Spatial conflicts; flood risk management; community participation

T_12 DISASTER-RESILIENT PLANNING / 668

Gaps and opportunities for integrating planning and disaster management in Australia

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Globally, natural hazards are becoming more frequent and intense due to climate change impacts, with the potential to trigger disasters. Planning plays a crucial role in disaster risk reduction, preparedness and recovery, as it influences locations of uses and building requirements. This role is influenced by wider policy and institutional frameworks for disaster prevention and response. Therefore, there is a need for integration of the work of planning and disaster management agencies.

This research aims to improve understanding of the role of planning in disaster management in Australia and how policy coordination and integration could be improved. It critically examines institutional arrangements and coordination mechanisms on the state government level and highlights gaps, barriers and opportunities for improved coordination and interaction.

The project uses a mixed methods approach. Firstly, we mapped current arrangements and frameworks for the coordination of planning and disaster management in Australia. Based on the mapping, case study research was undertaken across three Australian states, comprising document analysis and 27 stakeholder interviews.

Our analysis suggests that, while good practice and some regulations and frameworks exist, integration between planning and disaster management could be further

improved. Currently, disaster management agencies play coordinating roles on disaster preparedness, response and recovery, and to some extent disaster prevention, generally and also in relation to planning agencies. For planning, formal interaction occurs particularly through state emergency management planning and through fire agencies acting as referral agencies. However, the activities and knowledge of these lead agencies need to be better integrated with planning agencies on a day-to-day basis and there is a need to raise disaster risk awareness in planning agencies, i.e. how disaster risk impacts planning and vice versa.

Disaster risk reduction is embedded strongly regarding bushfire planning, but is less clearly regulated for other natural hazards. Planning processes and policies for moving away from risk areas (managed retreat) and compensation (buyback) schemes are used on an ad hoc basis but are not well coordinated or implemented. Furthermore, planners sometimes are not aware or do not understand the disaster risk, e.g. due to low data availability or because interactions with hazard agencies are not common – which leads to insufficient acknowledgement of this risk.

Barriers to the integration of planning and disaster management include differing work cultures and objectives and the loss of institutional knowledge that can result from frequent organisational restructuring and the prolific use of fixed-term contracts. In relation to local government, an absence of necessary resources often prevents sufficient disaster risk reduction activities and sufficient response in the disaster recovery phase. Enhanced institutional coordination to strengthen planning in disaster prevention, preparedness and recovery could include adding disaster themes to relevant planning legislation and policy frameworks and the development of clear policy priorities. Clearer policy positions and specific regulations about priority criteria for urban development decisions in relation to disaster risk and improved data availability and harmonisation can support planners in making firmer decisions about limiting urban development. Furthermore, a clearer assignment of planning agency's responsibilities in the different disaster phases and more formal and informal exchange between planning and disaster agencies would also support coordination.

Keywords:

policy integration; disaster management; planning; Australia

T_12 DISASTER-RESILIENT PLANNING / 1320

Post-Disaster Population Mobility: Considerations for the February 2023 Earthquakes in Türkiye

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The increasing frequency, intensity, and global impact of natural disasters in recent years has heightened the urgency for effective disaster management and recovery strategies. Among these disasters, earthquakes are particularly concerning due to their potentially devastating and unpredictable consequences, which can result in substantial loss of life and property on a global scale. Examining approximately 100 major earthquakes worldwide since 1900 reveals that 93% of global deaths from natural disasters are attributable to earthquakes, underscoring their profound global significance. Türkiye, situated in a seismically active region, faces elevated earthquake risk. This was tragically illustrated by two major earthquakes measuring 7.8 and 7.5 on the Richter scale that struck Kahramanmaraş on February 6, 2023, within a span of just nine hours. These unprecedented events claimed more than 50,000 lives and deeply affected 13.5 million people in 11 cities, including Kahramanmaraş, Hatay, Adana, Gaziantep, Kilis, Osmaniye, Adıyaman,

Şanlıurfa, Malatya, Diyarbakır, and Elazığ. Consequently, a significant portion of the affected population was forced to seek refuge in other regions, exacerbating the socio-economic and infrastructural challenges in the aftermath of the disaster. In this context, post-disaster population mobility emerges as a critical coping strategy to address the basic needs of affected communities. Such mobility encompasses different patterns, including temporary and permanent displacement, relocation, and return. A comprehensive understanding of the spatial and socio-economic factors driving these movements is crucial to accelerate recovery processes and inform resilience-oriented policies. Despite its importance, a significant knowledge gap exists regarding the relationship between mobility and social, economic, and environmental indicators, particularly in Türkiye, using post-earthquake human mobility data and analysis.

This study aims to analyze the spatial and socio-economic characteristics of population flows following the February 6, 2023, earthquakes. Its specific objectives are threefold: (1) to identify the attractive triggers influencing population movement, (2) to emphasize the importance of incorporating post-disaster mobility into recovery strategies, and (3) to provide a comprehensive understanding of the relationships between post-disaster mobility and social, economic, and environmental indicators. The analysis focuses on the cities receiving population flows from the earthquake-affected regions and examines economic (GDP per capita, house prices/rents, unemployment rates, sectoral employment distribution), demographic/social (education level, age groups, population density, urbanization rate), and environmental (earthquake risk level, distance to the earthquake zone, climate classification, average temperature, annual rainfall, and sunshine duration) characteristics. A Geographically Weighted Regression (GWR) model was employed to analyze the spatial distribution and attractive triggers of population flows.

The findings reveal significant empirical relationships between population mobility and specific socio-economic and environmental indicators, providing valuable insights into post-disaster mobility dynamics. Population flows were found to be concentrated in neighboring cities where the destruction was less severe, rather than in western cities. This highlights the need for targeted economic, social, and infrastructural interventions in these regions to guide recovery efforts and inform adaptive policies. The study further demonstrates that unplanned relocation to disaster-prone areas can exacerbate social inequalities, both within the affected regions and in the destination areas. Challenges related to employment, labor market integration, and social adaptation in these new environments contribute to deepening socio-economic disparities. The study's contribution to post-disaster process modeling emphasizes the importance of equitable and inclusive policies to mitigate rather than exacerbate these inequalities. Moreover, the study underscores the necessity of formulating policies that consider the long-term impacts of post-disaster mobility to ensure a more resilient and sustainable recovery process. By addressing these critical dimensions, the research provides a robust framework for developing adaptive strategies that promote resilience and inclusivity in the face of future disasters.

Keywords:

Post-disaster mobility; earthquakes; unplanned relocations; urban resilience; Türkiye

T_12 DISASTER-RESILIENT PLANNING / 1343

Social Vulnerability Mapping

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Almost every region faces some significant threats (natural hazards, like floods, fires, droughts, etc. or human-made risks, like poverty, unmanageable and/or unpredicted population changes, social unrest, wars, etc., just to name a few). Every one of them needs different strategies to address these challenges. Also, it is important to examine

if communities and people are able and capable of addressing these threats sufficiently. Earlier researchers established methods for evaluating the social vulnerability of communities. Yet these methods require contextual knowledge about the society –various criteria about population and predetermined vulnerable groups (like, poor people, people with special needs, etc.). In the end, social vulnerability is expressed as an index, which could help to identify the most vulnerable areas. It could also hint at suggestions for development policies and practices in order to minimise negative outcomes or implement adaptation and/or prevention measures. Here, we will present the social vulnerability mapping done for Lithuania at the administrative unit LAU3 level. It will be accompanied by a survey data investigation on public risk preparedness, which could help to propose more tailored strategies for future urban development.

Keywords:

social vulnerability; mapping; public risk preparedness; urban development

T_12 DISASTER-RESILIENT PLANNING / 175

Reevaluating Urban Resilience: Challenges and Opportunities in Villeneuve-Saint-Georges' ZAC Centre-Ville and Renaturation Projects

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This study evaluates the implementation of resilience strategies in two urban projects in Villeneuve-Saint-Georges: the ZAC Centre-Ville and the Renaturation de l'Yerres. Utilizing a mixed-methods approach, including document analysis, interviews, and qualitative assessment, the research uncovers important understandings regarding the effectiveness and limitations of these resilience measures.

The analysis reveals several critical findings: (1) The ZAC Centre-Ville project exhibits considerable gaps in resilience principles, particularly in flood risk management, failing to comply with established guidelines and increasing vulnerability. (2) The Renaturation de l'Yerres project, while aligned with ecological goals, faces challenges in community engagement and participation, underscoring the need for better integration of social dimensions. (3) Socio-economic factors, such as high poverty and informal housing, exacerbate vulnerability and impede resilience efforts. (4) Financial constraints and the lack of legal mandates for resilience investments pose significant barriers to effective implementation.

The study highlights the necessity for enhanced compliance with resilience standards, a more holistic and systemic planning approach, and greater consideration of socio-economic factors. Recommendations include advocating for stronger policy frameworks, securing investment through clearer communication of benefits, and fostering inclusive planning processes that involve all stakeholders. These findings provide a framework for improving urban resilience strategies, ensuring they are both effective and equitable in addressing the diverse challenges faced by cities.

This research contributes to a deeper understanding of urban resilience dynamics and offers actionable insights for policymakers, planners, and communities seeking to enhance their adaptive capacity in the face of evolving risks.

Keywords:

Resilience Policy Frameworks ; Urban Projects ; Flood Risk

T_12 DISASTER-RESILIENT PLANNING / 1321**Why should we bother about risk reduction at the urban scale? The Early Recovery System (ERS) framework to assess the impact of seismic prevention instruments on post-quake urban functionality****Author:** Cora Fontana¹**Co-authors:** Valentina Tomassoni ¹; Margherita Giuffrè ¹; massimiliano moscatelli ¹¹ *Consiglio Nazionale delle Ricerche - Istituto di Geologia Ambientale e Geoingegneria CNR-IGAG***Corresponding Authors:** valentina.tomassoni@igag.cnr.it, cora.fontana@igag.cnr.it, margherita.giuffre@cnr.it, massimiliano.moscatelli@cnr.it

Italy is highly vulnerable to seismic hazards, with historical earthquakes causing substantial casualties and economic losses. Despite this, Italian seismic risk management has traditionally prioritized post-disaster recovery instead of effective urban prevention strategies.

This approach carries significant costs, profoundly affecting territorial functionality and local communities through losses, service interruptions, population and business displacement, and socio-cultural imbalances. Therefore, the speed of recovery plays a critical role in determining whether communities choose to rebuild or relocate permanently. Effective disaster risk reduction policies centered on urban prevention strategies to safeguard territorial safety are needed to accelerate post-earthquake recovery and enhance urban resilience.

In this work, we introduced the Early Recovery System (ERS) framework that identifies essential urban elements such as emergency functions, healthcare facilities, schools, road networks, areas for temporary housing, and interfering buildings with the potential for seismic retrofitting. By calculating 18 indicators over different time intervals and across three hypothetical scenarios, we generated recovery curves that illustrate urban functionality loss and recovery trajectories, to establish the optimal prevention strategy to be adopted. Evaluation of the ERS framework in the case study of L'Aquila post-2009 earthquake demonstrates its potential to mitigate long-term urban functional disruptions and facilitate faster recovery.

ERS may represent a further step towards constructing an urban seismic prevention instrument for early recovery, that could support decision-makers in planning interventions and setting priorities based on common goals of territorial safety in earthquake-prone regions.

Keywords:

Seismic risk prevention; Early recovery; Urban functionality assessment;

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T_12 DISASTER-RESILIENT PLANNING / 40

Resilient Land Use Strategies in Urban Waterfront Development towards Flood Risk: A Case Study of Chongqing, China

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Global climate change has significantly increased the frequency of extreme weather events, with floods becoming an increasingly severe and unpredictable threat to urban areas. Consequently, flood control has emerged as a critical strategy to ensure public safety, particularly in transitional zones between urban areas and water bodies, such as waterfronts. In response, the city of Chongqing, China, has proposed raising the flood protection standards for its downtown waterfront areas. However, this proposal presents a conflict between meeting sustainable urban development needs and ensuring flood safety, as much of the surrounding land may fall within the newly designated floodplain, severely restricting its potential for development and regeneration. This research seeks to resolve this issue by presenting three key elements: (1) a flood resilience model based on resilience thinking and complex adaptive systems theory; (2) a risk distribution matrix developed from flood risk analysis under various scenarios and spatial vulnerability assessments; and (3) systematic solutions that integrate spatial planning and design, flood protection engineering, and risk management to determine the most suitable development intensity for different risk zones while ensuring flood safety and minimizing land resource consumption.

Keywords:

climate change, resilient urban development, land use strategies, flood resilience

T_12 DISASTER-RESILIENT PLANNING / 226

Exploring the Feasibility of Sponge City Solutions for Flood Resilience in Gangnam, Seoul

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Cities are increasingly vulnerable to the impacts of climate change, necessitating innovative approaches to mitigate environmental hazards and enhance resilience (IPCC, 2014).

Gangnam, a dense and economically vital district in Seoul, South Korea, faces escalating flood risks exacerbated by the combined pressures of climate change and rapid urbanization. Notably, the severe flooding in 2022 highlighted the district's vulnerability, which stems from its low-lying geography, insufficient green spaces, and aging drainage systems (Park et al., 2024; Lee, 2017). Despite governmental efforts to introduce temporary solutions, these reactive measures have proven limited in their long-term effectiveness, underscoring the need for comprehensive, preventative strategies for disaster risk management.

This research investigates the feasibility of adopting the "Sponge City" concept, a nature-based approach originally developed by Yu Kongjian (Yu, 2016), to address Gangnam's flood challenges. Central to this framework are green infrastructure solutions such as permeable pavements, bioswales, rain gardens, and artificial wetlands, designed to enhance stormwater management by absorbing, retaining, and filtering runoff at its source (Li et al., 2017). To complement these strategies, the study examines the integration of the planned Deep Tunnel Sewer System (DTSS), set to be completed in 2028, as part of a hybrid approach that balances engineered and nature-based solutions (Park et al., 2024).

A mixed-methods approach is employed, combining Geographic Information Systems (GIS) analysis and flood simulation modeling to identify high-risk areas, project future rainfall scenarios, and assess the effectiveness of proposed interventions. GIS-based spatial analysis incorporates data on land use, topography, and hydrology, providing a detailed understanding of Gangnam's flood vulnerabilities (Lee et al., 2023; Lei et al., 2021). Simulation modeling evaluates the impact of Sponge City interventions on reducing surface runoff, peak water flow, and flood extents, offering actionable insights for sustainable urban planning.

To ensure the feasibility and acceptance of these solutions, stakeholder engagement plays a central role in this research. Collaboration with municipal governments, environmental agencies, and local communities addresses land-use conflicts, regulatory challenges, and public perceptions (Reed, 2008). Policy recommendations include strategies to incentivize green infrastructure, enforce land-use regulations, and foster integrated governance frameworks that align technical solutions with social equity considerations.

By demonstrating the capacity of the Sponge City concept to mitigate flooding, enhance urban livability, and build resilience, this research contributes to a broader understanding of how nature-based solutions can complement conventional infrastructure in dense urban environments. The findings offer Gangnam actionable strategies for sustainable flood management while providing a replicable framework for other cities facing similar challenges. This study aligns with the conference's call for proactive disaster risk management and highlights the importance of shifting from short-term emergency responses to holistic, preventative resilience-building practices.

Keywords:

Sponge City; Flood Resilience; Green Infrastructure; Climate Adaptation

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T_12 DISASTER-RESILIENT PLANNING / 1090

How the coastal cities are transforming? The disaster as catalysts of change

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In the contemporary era, rapid demographic growth, widespread urbanization in vulnerable areas, and the escalating impacts of climate change have heightened the exposure of cities to natural disasters. Among the various forces of nature, water emerges as a pivotal factor in these catastrophes, manifesting both as scarcity and overabundance. Prolonged droughts and wildfires are direct consequences of insufficient water availability, while sudden and excessive precipitation often leads to devastating floods and hydrogeological instability. In addition to these acute and extreme events, slower and more progressive phenomena, such as rising sea levels, present equally significant threats to urban landscapes and coastal territories.

Coastal cities, particularly those situated along the U.S. East Coast (Rebuild by design, 2012), and in India, have been at the forefront of monitoring and addressing the risks posed by rising sea levels. Similarly, several northern European nations have proactively implemented national strategies aimed at enhancing urban resilience for several decades. In contrast, the Mediterranean region has emerged as one of the most vulnerable areas globally to the impacts of rising sea levels. According to projections by the European Environment Agency (EEA, 2024), sea levels in the Mediterranean are expected to rise by approximately 10 centimeters prior 2050. While early discussions on this issue began as early as the 1970s under the framework of the Barcelona Convention (UNEP/MAP, 1976). —highlighting the need for integrated coastal area management—many countries in the region still lack the necessary tools and frameworks to address these challenges effectively. The absence of adequate planning mechanisms significantly increases the likelihood of emergency scenarios, such as those witnessed along the Valencian coast in late October 2024.

Given these pressing challenges, a critical question arises: how can we effectively plan coastal territories using a resilient approach that prioritizes proactive management of change over reactive responses to emergencies? This research aims to address this question through an inductive methodology that bridges the domains of design and planning. By analyzing concrete case studies from diverse geographic and socio-economic contexts, the research seeks to develop a comprehensive strategy for guiding coastal planning practices. The ultimate goal is to formulate actionable guidelines that integrate the scales of urban planning and design, ensuring a holistic and resilient approach to managing coastal areas.

A central component of this research initiative is the development of an “Disasters Compendium” for coastal cities. This compendium serves as a repository of global case studies documenting disasters resulting from the dynamic interaction between land and sea. These disasters are conceptualized not merely as crises but as catalysts for innovation and transformation in urban and territorial planning. By systematically collecting, classifying, and analyzing these global experiences, the compendium aims to identify patterns,

strategies, and best practices that have emerged in response to such challenges. The insights derived from this analysis will form the basis for structuring comprehensive guidelines tailored to the Mediterranean region's unique vulnerabilities. By framing disasters as opportunities for learning and innovation, this research underscores the need for a paradigm shift in coastal planning—one that embraces resilience as a cornerstone for sustainable urban development in the face of climate change. This paper presents the progress of a key outcome from the PRIN COSTA|Med research project, currently being conducted at Università degli Studi Roma Tre.

Keywords:

Disaster; Coastal cities; Sea-level rise; Resilient planning

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T_12 DISASTER-RESILIENT PLANNING / 726**Assessment of community resilience to disaster at the local level in Korea**

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Disaster resilience is increasingly recognized as a critical capacity for communities to withstand and recover from hazardous events. Communities that demonstrate higher resilience typically experience reduced impacts from disasters and shorter recovery periods. Building a resilient community to disasters has become a primary objective of disaster management aimed at absorbing and mitigating the adverse effects of disaster. This study measures the level of community resilience to natural disasters in South Korea by providing a set of indicators assessing resilience in terms of human, social, economic, environmental, and physical capacity aspects. This study develops a methodology to aggregate constructed disaster resilience index for local communities and analyze data from 229 local municipalities to measure their resilience level. This study compares community disaster resilience level between 2010 and 2020, and employs the aggregated disaster resilience index to explore its relationship with disaster losses in the country. The findings reveal geographic variation in disaster resilience across South Korea. By identifying the extent of community resilience within this framework, this study offers disaster management officials or decision-makers with strategic insights for enhancing community resilience and minimizing the negative impacts of natural disasters.

Keywords:

Community disaster resilience; index; measurement; Korea

T_12 DISASTER-RESILIENT PLANNING / 336

Disaster Risk Reduction and Spatial Planning in Albania, practice vs theory? how to bridge the gap!

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Albania is one of the countries with a high level exposure and high level of vulnerability towards disasters. Over the years, several disasters (earthquake, flooding, wildfires) have had a great impact in lives and economic losses showing clear gaps in the system and the inability of the governance structures to be able to prevent or respond in time. Meanwhile, climate change is expected to exacerbate existing hazards making them more frequent and severe. In the last decade important reforms have occurred in spatial planning and disaster risk reduction, trying to bring a shift towards comprehensive and integrated planning and a shift focusing on risk rather than management of emergencies.

This paper focuses initially on a theoretical discussion in trying to understand the linkages and differences between spatial planning and planning for disaster risk reduction. The dimensions of complexity, wickedness and uncertainty are explored as key factors which affect theories of planning and planning practice. Afterwards the case study of Albania is discussed. The paper uses practical examples from projects developed in Albanian municipalities by the authors between 2019 (Lezha) and 2024 (Fier, Lushnje, Roskovec, Patos, Divjake and Mallakaster) to understand the limits of practice and legislation vis-a-vis theoretical discourse.

Keywords:

disaster risk reduction; spatial planning; complexity; uncertainty; wickedness

T_12 DISASTER-RESILIENT PLANNING / 1573

Relationship between Urbanization Policies and Seismic Vulnerability in Small-Scale Cities: 2023 Earthquakes in Turkey and the Case of İstanbul

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The main reasons for natural events turning into disasters in Turkey are that most cities are located in earthquake-prone areas, the building stock in those cities is constructed in a seismically unsafe manner, urban development occurs in geologically risky areas, and the production of non-resilient structures cannot be prevented. Researchers and practitioners focusing on resilience mostly concentrate on building quality, soil stability, and strategies for urban reconstruction and resilient redevelopment. In contrast, there are relatively fewer studies examining the extent to which the spatial development of cities increases risks and contributes to resilience. It can be argued that a multi-scale spatial perspective, considering construction conditions, could serve as a foundation for

enhancing the earthquake resilience of cities. In this context, the present study analytically discusses the impact of urbanization policies and urban development decisions on seismic vulnerability. The paper includes findings from an ongoing TÜBİTAK-supported research project.

The 2023 Kahramanmaraş Earthquakes caused widespread destruction in multiple settlements along the fault line. This situation provides a unique opportunity to examine the relationship between the destruction experienced in these settlements and urbanization policies and urban development decisions. Within the scope of the present study, the role of urban development processes in the destruction caused by the earthquake in İslahiye, which had an urban population of around 35,000 before the earthquake, is addressed. The historical development phases of İslahiye are documented through aerial photographs, and patterns of earthquake-induced destruction are mapped using GIS. The collected data, combined with development plans, geological reports, and field observations, aim to reveal the urbanization policies and practices underlying seismic vulnerability in small-scale cities through the example of İslahiye.

Keywords:

Vulnerability; Urbanization policies; disaster and urbanization; İslahiye; Kahramanmaraş Earthquakes

T_12 DISASTER-RESILIENT PLANNING / 1849

Dynamic Human-Centered Ontology for Urban Disaster Management: A Reinforcement Learning Approach to Adaptive Emergency Decision-Making

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As the complexity of urban disaster management increases, the construction of urban disaster-related ontologies becomes crucial. However, existing urban disaster-related ontologies do not sufficiently consider human factors, particularly in the knowledge modeling of dynamic interactions among humans, disasters, and the environment in disaster response, making it difficult to effectively support disaster prediction and emergency decision-making. Therefore, this study develops a human-centered ontology framework that integrates deep reinforcement learning (DRL) and multi-agent reinforcement learning (MARL) to model the evolving interactions among humans, disasters, and urban environments.

First, this study explores the dynamic updating method of the ontology when introducing real-time human interaction data, analyzing the applications, challenges, and limitations of deep reinforcement learning and multi-agent reinforcement learning in ontology updates. Then, the proposed ontology adopts a multi-layered structure, designed through expert validation and OWL 2 DL reasoning, ensuring logical consistency and adaptability. It incorporates task-specific roles (e.g., first responders, emergency managers, vulnerable populations), human physiological and psychological states (e.g., stress-induced decision biases, fatigue accumulation), and human-centric IoT data (e.g., biometric sensors, wearable devices, mobility traces), among others. By capturing these factors, the ontology enhances disaster situation awareness, enabling more accurate risk assessment and adaptive decision-making.

Finally, this study evaluates the applicability of the ontology using a typical open-source disaster database. Preliminary validation in disaster simulations demonstrates that the

ontology can dynamically adjust evacuation strategies based on smart city digital twins and multi-hazard scenarios.

This study constructs a human-centered urban disaster ontology, optimizing disaster information representation, knowledge reasoning, and emergency management, thereby enhancing the intelligence level of disaster management. The ontology can be integrated into a smart city disaster management system, supporting cross-hazard risk assessment and resource scheduling optimization, and promoting the transformation of disaster management from static knowledge bases to dynamic cognitive systems.

Keywords:

Human-centered ontology; Reinforcement learning; Dynamic adaptation; Urban disaster; Emergency decision-making

T_12 DISASTER-RESILIENT PLANNING / 1503

Beyond emergency: shaping long-term resilience after the Emilia-Romagna floods

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The Emilia-Romagna region in Italy has experienced multiple severe flood events in 2023 and 2024, caused by prolonged heavy rainfall. These events triggered widespread inundations and landslides, severely affecting local populations, economic activities, and territorial balance. The national and international media extensively covered the disasters due to their severity, sparking a public debate on the region's vulnerability and long-term solutions. While emergency responses focused on immediate life-saving operations, discussions on risk mitigation strategies highlighted both structural and non-structural measures, some of which proved politically sensitive—such as mandatory insurance for businesses.

In the aftermath of these events, extraordinary hydraulic and infrastructural interventions have been implemented, yet their completion is time-intensive and cannot address all vulnerabilities simultaneously. Emilia-Romagna's highly urbanized landscape, characterized by significant land consumption, exacerbates runoff formation and flood peaks, making water management increasingly complex. The affected communities remain deeply shaken by the disasters and skeptical about the adequacy of institutional responses, questioning whether regional and local authorities, as well as land management consortia, are taking sufficient action to enhance territorial safety.

In this evolving context, the AQUAGREEN project, funded under the European Urban Initiative, was launched in late 2024 as one of 22 selected projects in its call. It aims to test urban drainage solutions, monitoring systems, and early warning mechanisms to manage extreme rainfall events more effectively. Crucially, the project emphasizes stakeholder and citizen engagement, recognizing that post-disaster reconstruction extends over years and that true transformation requires a systemic, distributed risk management approach.

This contribution explores the case of Romagna Faentina, where AQUAGREEN is being implemented, and examines how this local experience aligns with broader international discussions on post-disaster planning. The aim is to identify key lessons and insights applicable to other territories grappling with the urgent need to shift from reactive disaster response to proactive, integrated territorial planning in the face of climate change.

Keywords:

Climate adaptation, Disaster resilience, Water management

T_12 DISASTER-RESILIENT PLANNING / 28**Innovative Urban Futures: Songdo's Smart City Strategies for Disaster Resilience****Authors:** Reazul Ahsan¹; Idil Ayrar¹¹ *University of Utah***Corresponding Authors:** idil.ayral@utah.edu, reazul.ahsan@utah.edu

This paper examines the potential of smart city design as a transformative strategy for natural disaster risk reduction (DRR), using Songdo, South Korea, as a key case study. Urban regions are increasingly confronted with climate change-related threats, including floods, typhoons, and heatwaves. The incorporation of smart technologies and sustainable infrastructure offers creative strategies to enhance urban resilience. Songdo, an internationally acknowledged exemplar of smart city development, demonstrates how sophisticated urban systems can improve disaster readiness and adaptive capability.

The research analyses essential components of Songdo's smart city framework, encompassing real-time sensor networks, advanced water management systems, energy-efficient architectural designs, and automated emergency response systems. These technologies facilitate proactive risk management, data-informed decision-making, and swift responses to natural disasters, therefore diminishing vulnerabilities and enhancing urban resilience. The study highlights the necessity of combining sustainable urban planning with technological advancements to successfully mitigate increasing climate hazards.

Notwithstanding these gains, considerable obstacles persist. Socio-economic inequalities in access to smart technology generate equity issues, whereas intersectoral collaboration and policy coherence are essential for the effective operation of smart city systems in times of crisis. This paper examines Songdo's triumphs and limits, offering critical insights into the function of smart cities in mitigating disaster risks and enhancing urban resilience.

This research enhances the current dialogue on urban futures by elucidating the advantages and constraints of smart city designs as mechanisms for climate adaptation. It provides practical insights for policymakers, urban planners, and researchers aiming to reduce vulnerabilities and promote sustainable, resilient urban populations in response to increasing natural disasters.

Keywords:

Smart city design, Disaster risk reduction, Urban resilience, Songdo

Track 13 | HOUSING AND SHELTER

T_13 HOUSING AND SHELTER / 1885

The Role of Community Land Trusts in Enhancing Affordability and Intergenerational Inclusivity in Urban Planning

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Housing affordability and accessibility remain critical challenges in Italian urban areas, particularly in Naples. The demand for affordable and inclusive housing necessitates innovative solutions that address shifting social, demographics and urban planning needs. A shift toward cooperative housing policies and 'housing commons' underscores the importance of accessibility and decommodification (Ferrerri & Vidal, 2022). The platformization of the housing market and touristification has significantly reduced housing availability in Naples' historic center. These trends exacerbate inequalities, allowing the private market to dictate prices. Short-term rentals further erode affordability, while ineffective urban planning perpetuates spatial inequalities and rising costs.

To address the pressing issues, the Community Land Trust (CLT) model is proposed as a transformative tool in urban planning (Davis, 2014; Meehan, 2014). The CLT emphasizes community ownership of land, which is essential for ensuring long-term affordability and stability for residents while effectively preventing displacement and gentrification driven by speculative real estate practices. By fostering a collaborative approach that includes intergenerational cohousing initiatives and participatory design processes, the CLT can significantly alleviate housing shortages and reinforce social ties within the community. This paper aims to explore the CLT as a novel urban policy instrument for enhancing access to social housing, focusing on critical issues such as the disposal of public assets and the establishment of effective governance mechanisms for the social utilization and decommodification of public properties (Balmer & Bernet, 2015). Positioned within the context of the Cities 4 Co-Housing Urbact programme by the Municipality of Naples in 2024, the CLT emerges as a pivotal model that offers an innovative perspective on urban planning.

To tackle the pressing issues of social housing access and intergenerational integration, this research proposes a theoretical and practical framework designed to create tools that facilitate these objectives. The CLT model is examined as an urban political vision capable of addressing the challenges posed by the disposal of public assets and the impacts of austerity measures, particularly under the Invimit Pact for Naples. The study will delve into case studies from Brussels and the CALICO Caring Community project (Dawance et al., 2019), which exemplifies successful intergenerational cohousing initiatives (Czischke, 2019). These cases provide valuable insights into how collaborative approaches can enhance social ties and alleviate housing shortages in urban settings like Naples. Furthermore, the research will explore how the CLT can serve as a catalyst for social inclusion, particularly for marginalized groups who often face barriers to accessing adequate housing. The integration of diverse generations within housing projects can promote community cohesion, thereby enhancing the overall quality of life for residents.

The methodology employs qualitative research and empirical analysis to assess the feasibility of adapting the CLT model to the context of Naples. This approach includes comprehensive case studies, with a particular focus on the CALICO project. Empirical research will incorporate qualitative methods, including direct observations, to capture nuanced local dynamics and contextual challenges.

Anticipated outcomes of this research include the definition of innovative and sustainable urban policies that transcend traditional welfare measures for housing. The focus will be on initiatives designed to reduce inequalities and housing instability, highlighting the benefits of proposed policies and demonstrating the value of strategies aimed at the social and sustainable use of public real estate to counteract speculation. This research endeavors to merge innovative strategies with practical approaches to establish a com-

prehensive framework of urban policies that effectively address inequalities and housing instability, ultimately contributing to a more equitable urban environment.

Keywords:

Community Land Trust; housing affordability; urban planning; intergenerational housing

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T_13 HOUSING AND SHELTER / 1290

Comparing the impacts of specialized industries on housing prices between the regions: Case of the Seoul Metropolitan Area

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South Korea has been experienced rapid increase in housing prices and residential instability due to job and industry concentration in the Seoul metropolitan region. The sharp rise in housing prices is one of the major factors that undermines residential stability and housing affordability. Many studies have highlighted the regional imbalance of jobs and industries as a key factor in the increase in housing prices in the metropolitan regions. It is therefore crucial to identify factors affecting housing prices including variables related to employment and industry location.

This study aims to uncover the factors influencing housing prices in the Seoul metropolitan region covering three areas: Seoul Metropolitan City, Incheon Metropolitan City and Gyeonggi-do Province in Korea, while focusing on the impact of regional specialized industries. Specialized industries are defined as those within a specific industry category with a location quotient exceeding 1.25, and the quotients of specialized industries are recalculated using the number of employees working for the specialized industries in the region (Lee and Lim, 2021). To understand the disparity in the industrial impact between the areas, this research compares differences in the effects of specialized industries on housing prices between the region in Seoul metropolitan area. This study further compares the effects of the location quotients by major industry categories.

In this study, spatial panel model is employed to compare the factors influencing housing prices among the areas and industries. Housing sale prices are set as the dependent variable, with the location quotients of specialized industries, as well as various indicators related to households, housing, transportation, education, culture, and the regional economy, set as independent variables. The panel data consists of annual data from 2011 to 2023, with the basic administrative districts within the Seoul metropolitan region. Separate panel data sets are prepared for the Seoul and other Seoul metropolitan regions.

The results indicate that housing prices significantly increase as the location quotients of specialized industries rise. Furthermore, the location quotients of specialized industries have a more positive effect in Seoul than Incheon and Gyeonggi-do. When standardized coefficients are compared, the impacts of the location quotients of specialized industries are less than the net migration rate, the number of households, housing stock, and per capita regional income. However, they are higher than those of other variables related to transportation, education, culture, and the regional economy. Comparing the impacts of specialized industries in Seoul, finance and insurance, professional, scientific and technical services, and construction are identified as having a strong positive effects on housing prices, while other areas, manufacturing, construction, and professional, scientific and technical services are identified as significant. Therefore, housing policies in metropolitan regions should be implemented considering regional industrial strategies, including the development of regional specialized industries.

Keywords:

Housing Price, Industry, Spatial Panel Model, Seoul Metropolitan Area

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T_13 HOUSING AND SHELTER / 189

Understanding the Preference and Choice of Housing Environment for University Students in Metropolitan Areas

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In metropolitan areas with large populations, university students suffer from spatial inequalities due to inadequate housing supply and uneven distribution of housing environment elements, leading to stress, instability, and insecurity (Sotomayor et al., 2022; Fang and van Liempt, 2021). Since students are a vulnerable group with limited housing choices, an over-reliance on market distribution fails to address student housing inadequacies and inequalities (Pillai et al., 2024). Decision-makers should investigate

the factors shaping students' housing preferences and implement supportive policies to address the housing needs of students. However, existing research predominantly adopts a top-down perspective, analyzing the student housing distribution as an outcome of policies and emphasizing the impact of existing environments on housing choices (Poku-Boansi et al., 2023). Few studies explore the mechanisms underlying the deviation between students' housing preferences and actual choices, limiting the potential of policies to mitigate spatial and systemic constraints on housing equality for students.

Our research addresses this gap by analyzing the correlation between students' housing preferences and choices from a humanistic perspective, exploring the influential mechanism of economic, social, and physical factors in students' housing decisions and the discrepancies between their subjective values and actual solutions. This analysis provides insights into the underlying causes of spatial inequality of housing distribution among students. Based on these insights, we propose targeted housing distribution strategies that align with students' needs, considering the existing urban environment across different districts to promote equitable allocation of urban transportation, services, and communities.

The study focuses on Berlin, a metropolis with severe student housing shortages. Through semi-structured interviews, university students were asked to rate the importance of five key factors—rent price, transportation convenience, room type, service density, and community safety—contributing to their ideal housing. These preference data were used for clustering analysis, dividing the respondents into groups with distinct housing preferences and spatial distribution patterns. Furthermore, the economic, social, and physical environment indicators corresponding to these five factors were measured and examined for their correlation with students' subjective preferences, using postal code areas as the unit of analysis. This approach reveals the alignment or deviation between students' housing preferences and the actual environment of their selected housing, forming the basis for proposing housing distribution strategies that account for the preferences of this vulnerable group in metropolitan areas.

The results demonstrate that students are distinctly categorized into three groups based on their housing preferences. Groups 1 and 3 prioritize rent price, with the former placing transportation convenience as the second priority, while the latter considers service density equally important. In contrast, Group 2, which prioritizes room type, places less emphasis on low rent. A comparison between preference scores and actual housing environments reveals a high degree of alignment regarding transportation factors. Students who prioritize transportation convenience tend to select housing within a 30-minute commute from their university, whereas the other two groups do not. Conversely, preferences for service density do not exhibit a strong positive correlation with the actual distribution of chosen housing, reflecting the uncertainty of service density as a guiding factor in students' housing decisions.

These findings reveal the group differences in housing preferences among students, from which we unveil the varying degrees of influence exerted by environmental factors on their subjective values and actual decisions on housing. These influencing mechanism investigations in our research not only assist governments and planning departments in optimizing student housing distribution, but also provide more targeted references for urban renewal and land use policy development from a humanistic perspective. This contributes to more effectively addressing the actual needs of the student population at the policy level and mitigating housing inequality.

Keywords:

Student housing; Housing preference; Housing environment; Spatial inequality; Data-driven planning

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T_13 HOUSING AND SHELTER / 1484**How Housing Diversity Affects Urban Residential Segregation: The Tokyo Model****Authors:** Jue MA¹; Chenchen Sun¹; Santiago Garcia Gabilondo¹¹ *The University of Tokyo***Corresponding Authors:** majue@ccsis.u-tokyo.ac.jp, garcia-s@iis.u-tokyo.ac.jp, sun-chenchen803@g.ecc.u-tokyo.ac.jp

A diverse housing supply is widely recognized as a crucial mechanism for mitigating socioeconomic segregation by allowing different income groups to coexist within the same urban fabric. However, most existing research has focused on cities where housing typologies are spatially clustered, reinforcing patterns of residential segregation (Glaeser and Gyourko 2018, Tiebout 1956). Less attention has been given to cities characterized by highly heterogeneous housing stock at the micro-scale, where various housing types and price levels coexist within small urban units. This study examines Tokyo, one of the least segregated among major metropolises (Hoshino, 2011; OECD, 2021), to explore how its unique housing supply system contributes to maintaining low levels of residential segregation. Additionally, it evaluates whether current development trends threaten the long-term sustainability of this inclusive model.

This paper investigates the interaction between residential segregation level and housing supply diversity, as experienced by distinct types of households given their housing needs and the existing housing stock in different areas. We calculate and compare the place-based residence income segregation indexes for different types of households, and the Simpson diversity indexes of different housing prices and sizes at 1 km grid scale. Furthermore, we analyze the potential changes given the current housing market trends by identifying the percentage of affordable homes for prospective or transferring households within different areas of Tokyo.

Our findings indicate that the diversity of housing price and size plays a significant role in Tokyo's low residential segregation level. The highly heterogeneous housing stock resulting from the gradual small-scale redevelopments in Tokyo plays a critical role in shaping the city's low social segregation. However, this model comes with trade-offs. While it fosters social integration, it also presents challenges in terms of housing quality, size, and rental stability, particularly in central areas of the city. Moreover, our analysis reveals a growing mismatch between housing demand and supply, particularly for nuclear households, who face increasing difficulty in securing affordable and adequately sized homes across the city. This trend raises concerns about the sustainability of Tokyo's current housing model in ensuring long-term social inclusion.

This study contributes to discussions on housing affordability, residential segregation, and social sustainability. It offers valuable insights into how diverse housing supply systems influence socio-spatial dynamics in Asian cities.

Keywords:

residential segregation; Housing diversity; affordability; compact city,

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T_13 HOUSING AND SHELTER / 1470**Does regional planning really have an impact on urban development? Examining the effects of 50 French urban regional plans (SCoT) on housing construction and on building densities.****Authors:** Thomas Buhler¹; Louis Kalisky¹; Morgane Roblet¹; Léo Magnin-Hoffbeck¹¹ *Université Marie & Louis Pasteur***Corresponding Authors:** leo.magnin@univ-fcomte.fr, thomas.buhler@univ-fcomte.fr

The question of the effects of planning is an old issue for the urban planning research community. Yet, urban plans have been widely criticized for being “rigid”, “inflexible”, “inefficient” (Demazières and Desjardins, 2016) to the point of causing the field to lose interest in these documents (Hopkins and Knaap, 2018). Their usefulness is sometimes even seen mainly (only) in gathering actors together around a table (Gallez and Maksim, 2007).

Since the emergence, then widespread availability, of precise data on urban development, a field has emerged at the crossroads of spatial analysis and planning: that of ‘conformance’ or ‘compliance studies’ (Hersperger et al., 2018). In a few words, this research aims to compare the intentions of plans and the results obtained, and to understand possible discrepancies. The main results - mostly on European cases - lead us to consider overall: (1) regulatory urban plans (most often on a municipal scale) as being effective, i.e. the development observed on each plot corresponds generally to its respective rules (Abrantes et al., 2016), and (2) regional plans for their part have rather nuanced effects on urban development, even within the same metropolitan or inter-municipal territory (Padeiro, 2016; Pagliarin, 2018). This variability is interpreted as the outcome of the (un-)ability of municipal actors to invest themselves in the plan implementation process.

In this paper, we considered a large number of cities/documents (50 SCoTs here: ‘Schémas de Cohérence Territoriale’). In short, SCoTs were introduced in the year 2000 under French law (“SRU” Act). The purpose was to renovate a pre-existing two-tier planning system in which the SCoT would be the more strategic document at the scale of the urban region to which municipal regulatory documents (PLUs) would then have to conform. While Central Government anticipated that local elected representatives would first work on the SCoT and then work down to the level of their municipal application in a PLU, the opposite happened during the 2000s. During this period, local mayors have mainly backed up their decisions locally in order to avoid top-down supra-municipal constraints (Offner, 2017). As a consequence, Central Government modified in 2010 an important feature of SCoTs to give them more political weight and strategic interest: from this moment SCoTs have been able to impose (1) minimum densities on each commune in its territory of action and (2) an awaited number of new housing units for each sub-sector of the urban region. These two aspects became legally binding on documents lower down in the planning hierarchy.

In this paper we will analyze the effects of these two specific indicators 10 years after the approval of these documents, and this on 50 varied territories in terms of demography, and of dynamism of housing and land markets. Methodologically speaking, this analysis has been made possible by the combination of data on housing at the municipality scale and spatial analysis outcomes to approximate the net density of urban development during the period.

Research shows very contrasting results. On the one hand, when it comes to density, the SCoT directives are applied in most of the cases. We can see this as the effect of

a fairly advanced legal integration. On the other hand, when it comes to the number of housing units planned, results show that SCoTs are almost useless: they fail to limit construction in situations described as saturated, nor do they succeed in stimulating construction in areas of low attractiveness, still less in balancing housing development within urban regions. These results illustrate a case where strategic regional planning encounters several limitations, even when explicit and binding targets are set.

Keywords:

regional planning ; efficacy ; planning conformance ; density

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T_13 HOUSING AND SHELTER / 302

Regeneration as an Approach for Upgrading Informal Settlement in Kampung Deret Petogogan

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Informal settlements are a global issue affecting many countries, including Jakarta. On-going urbanization and socio-economic changes have accelerated the development of these settlements in recent decades (UN Habitat, 2021; Cinnamon & Noth, 2023). Informal settlements are complex in both their composition and the social relationships within them; they are neither homogeneous nor well-organized (Smit, 2006; Misselhorn, 2008; Brown-Luthango et al., 2017). These areas are often unplanned, with residents facing insecure land tenure, which limits their access to essential services prior to government intervention (Cirolia, L.R et al., 2016; Weimann & Oni, 2019).

The growth of informal settlements is closely linked to urban expansion, and after extensive debate, urban regeneration has been recognized as a potential solution (Amoda, 2016). Urban regeneration is a comprehensive approach that contributes to sustainable development by redeveloping urban land and reusing resources. It aims to improve the physical and functional spaces of cities, enhancing social, economic, and environmental outcomes (Korkmaz & Balaban, 2020; Liu et al., 2023).

One example of urban regeneration is the Kampung Deret initiative in Petogogan, Kebayoran Baru, South Jakarta, which aims to improve informal settlements. This initiative was driven by the "Assistance for Home Improvement in Slum Settlements through Kampung Structuring" policy, established under Governor Regulation No. 64 of 2013. The policy focuses on improving physical environments, including housing, infrastructure, and public utilities, ensuring alignment with residential development standards. The Kampung Deret project includes repairing housing components and expanding homes to meet livability standards in targeted slum areas.

While most international and national literature focuses on the periods before and during these improvements, this paper seeks to assess the long-term impact of housing interventions on community structures and governance patterns after the improvements. The main research question is: What is the impact of housing improvement in slum settlements through the Kampung Deret Petogogan initiative? How have the physical environment, social dynamics, community cohesion, economic regeneration, and regulations evolved before and after the improvements, using an urban regeneration approach?

This study employs an ex-post evaluation approach, which allows for a more accurate measurement of a program's impact. Ex-post evaluation, conducted after program completion, enables a comprehensive and holistic analysis of the program's outcomes (Wollman, 2007; Kawengian & Rares, 2015; Abraham & Mahany, 2021). The primary objective is to determine whether the program's outputs, results, and impacts have effectively addressed the initial problems. Additionally, it evaluates the efficiency, effectiveness, and overall benefits of the program (Abraham & Mahany, 2021). Evaluation research plays a crucial role in determining the future of programs by providing recommendations on whether they should be continued or replicated in other areas.

The first step in this research is a systematic review of relevant literature. Secondary data is gathered from existing documents, such as the Kampung Deret development plans. The study adopts a case study approach, incorporating field research that includes interviews with key informants, direct observations, and household surveys. Focus group discussions (FGD) will also be held with key figures, government officials, NGO staff, and academics. The research utilizes a comparative methodology with a before-and-after design. The analysis focuses on the impact over a 10-year period following the improvements.

Keywords: Informal Settlement, Upgrading, Regeneration,

Keywords:

Informal Settlement, Upgrading, Regeneration

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T_13 HOUSING AND SHELTER / 638

The Social Reflections of Neoliberal Policies, Planning Legislation, and Housing in the Istanbul Metropolitan Area

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According to Lefebvre (2013), the prioritization of exchange value in urban space forms the basis of urban injustice and inequality. Under the influence of neoliberal policies, housing has transformed from a basic need for shelter into an investment, prestige, and rent-generating commodity. The 2000s, as a period when neoliberal policies became spatialized, marked a time of significant changes in Turkey's planning legislation and restructuring of planning institutions (Alkay, 2020). During this period, comprehensive regulations were made in planning legislation to facilitate real estate investments, construction processes, and the supply of land to market actors. Significant powers and opportunities were given to central institutions, and the planning process was centralized. Especially after 2010, centralization increased and local governments were made passive (Balaban, 2012).

The aim of the study is to examine the social reflections of the legal regulations made in the planning legislation in the 2000s, when neoliberal policies became spatial and the new government pursued a construction and housing-based economic policy, in the Istanbul Metropolitan Area through case studies. The study, based on a document analysis of the 22-year period between 2002 and 2024, is structured in two phases. In the first phase, the regulations made between 2002-2010 and 2010-2024 are examined in detail. In the second phase, literature research based on field studies in the Istanbul Metropolitan Area are examined.

The legal regulations made in the process have led to urban transformation practices and new housing projects that have become tools for generating and sharing rents in urban areas, and this has brought about social problems such as social segregation, exclusion, displacement, polarization, gentrification and the reproduction of poverty. These processes have resulted in violations of housing and urban rights (Bülbul-Akın & Türkün, 2019; Doğru, 2021; Kaplan, 2017). After the year 2000, both the new housing supply and interventions in existing housing areas have caused the fragmentation of urban space among different income groups, spatial segregation, and an increase in urban crime. The typology of the land and housing produced has also played a significant role in the socio-spatial separation based on economic accessibility to housing. The trend in housing production targeting middle and upper-income groups in Istanbul, based on large land parcels, generally favors closed, secure, high-rise housing complexes. The features and location choices of these housing projects change living styles and socio-cultural structures, creating tangible barriers that separate society based on purchasing power. In gated communities and high-rise buildings, people are isolated from the street and each other, leading to alienation. As a result, the concepts of neighborhood culture and community have almost disappeared in Istanbul, except for its older settlements (Çınar-Erdüzgün & Çizmeci-Yöreş, 2019; Kılıç & Ayataç, 2019; Sönmez, 2019). Housing issues have become an increasingly significant problem not only for vulnerable groups such as low-income households, students, and refugees, but also for middle classes, who are the foundation of strong and sustainable economic growth and social welfare. The quality of housing and life is declining for many segments of society (Ayhan, 2019).

Keywords:

Neoliberal policies; social dimension of the planning legal framework; Istanbul

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T_13 HOUSING AND SHELTER / 637

A NEW ACTOR IN TURKEY'S SOCIAL HOUSING PRODUCTION: THE CASE OF KİPTAŞ

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A considerable number of developing countries continue to encounter significant challenges in terms of the provision of social housing for their inhabitants. In Turkey, the issue of social housing is intricately linked to the neoliberal restructuring of social housing policies, which mirrors global trends but exhibits distinct intensity and local dynamics. Prior to the 1980s, the provision of social housing was fragmented, with local governments and cooperatives providing limited quality stock in the context of rapid urban migration. The introduction of the Mass Housing Law No. 2487 (1981) and the establishment of the Housing Development Administration (TOKİ) in 1984 represented significant progress in this regard. The formation of TOKİ was driven by the objective of producing affordable housing. However, following the legal arrangements of 2004, it commenced operations as the primary revenue generator, operating without any financial or judicial control. This shift has given rise to a substantial debate within Turkey in recent decades. As TOKİ's role increasingly aligned with market-oriented policies, its capacity to meet "real" housing needs diminished, leading to an urgent need for alternative approaches in Turkish cities, where housing needs have become increasingly unmet.

In the midst of this evolving landscape, KİPTAŞ (Istanbul Housing Zoning Plan Industry and Trade Inc.), the real estate subsidiary of the Istanbul Metropolitan Municipality (İMM), has emerged as a promising municipal player in the domain of social housing production. Established in 1995 with a mandate to produce zoning plans and architectural

projects, KİPTAŞ has a long-standing involvement in housing development. Nevertheless, subsequent to the 2019 municipal elections and under the leadership of the opposition party Mayor Ekrem İmamoğlu, KİPTAŞ underwent significant reform to its operational model. Under the new administration, KİPTAŞ has redefined its mission, adopting the goal of developing affordable, accessible, and socially focused housing projects designed for low- and middle-income residents. This strategic reorientation has set KİPTAŞ apart from the profit-driven urban development model of TOKİ by prioritizing sustainability, inclusivity, and social responsibility in the field of social housing. As a result of this localized management approach, KİPTAŞ has emerged as a viable municipal alternative, offering a new housing provision model based on urban inclusivity and social justice.

This study will examine KİPTAŞ's evolving policy strategies and role in social housing production, and the ensuing discussion will explore the institution's potential to redefine social housing provision in Turkey, in contrast to the privatized tools of the central government. The study will explore how the institution has redefined municipal responsibilities in addressing urban housing inequalities and how it has differentiated itself in Turkey's evolving housing landscape. The article employs qualitative methodologies, including policy analysis and interviews with key actors, with the aim of analyzing KİPTAŞ's strategies and providing insight into the potential of local government-led initiatives to redefine the social housing paradigm.

Keywords:

Social Housing; Housing Policy; KİPTAŞ; Istanbul Metropolitan Municipality; Istanbul

T_13 HOUSING AND SHELTER / 613

An Assessment on Provincial Differentiation of Housing Problem in the Turkish Case

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Housing has been one of Türkiye's significant urban problems in recent decades. There are two broad categories of factors that directly influence this multifaceted problem. The supply-side factors are mainly the economic and institutional factors that aim to solve the problem by using the housing supply as a tool. Since high rents have been considered the primary cause of the high costs of daily living, central governments usually focused on increasing the housing supply to control high rents with the help of institutions like the Mass Housing Development Administration (TOKİ) and the municipalities. Demand-side factors, on the other hand, have a greater impact on the intensity of the housing problem since the housing supply, though it is increasing, can never meet the growing demand. Between the years 2000 and 2023, the overall population of Türkiye increased by approximately 35%, while the average household size dropped from 4.48 to 3.14 people. These demographic changes increased housing demand radically. Moreover, there has been an additional demand originating from the increasing number of immigrants in Türkiye and the ease of housing sales to foreigners. This unbalanced situation between housing supply and demand has artificially increased housing prices and consequently decreased homeownership rates, especially for certain socio-economic groups. Between the years 2002 and 2025, the homeownership rate in Türkiye has decreased from 73.1% to 56.2%. This means that approximately 17% of the overall population, mostly low- and middle-income groups, have lost the chance to be homeowners. In this period, rental housing has appeared as one of the main solutions to the housing demands of these groups. However, it generated budgetary problems for those households since housing and rent expenditures account for the largest share of their consumption expenditures. Even though there are regulations to control the overall increase of rents, they are incapable because of the shortcomings of those regulations

detected by the market actors. In these circumstances, the housing problem gradually turns into a housing crisis.

There are lots of studies focusing on housing problems in Türkiye. However, they generally study this issue at the national level and have limited emphasis on provincial differentiations of the problem. To overcome this limitation, this study aims to analyze provincial distributions of ownership statuses of residential units and reveal whether their spatial repercussions are similar in developed and underdeveloped provinces. There are three sections of the study. The first section contains a general quantitative description of the housing problem. With this description, it becomes possible to present different dimensions of the housing problem. The second section is the analytical section with its two parts. The first part aims to produce provincial profiles by considering the ownership statuses of residential units and the total number of households in each province. Consequently, these profiles are hierarchically clustered concerning their similarities, and the clusters are used to visualize provincial profiles. In the second part, these clusters are simultaneously evaluated with the socioeconomic development levels of provinces to understand whether there is a correlation between provincial profiles of ownership statuses and those development levels. Starting from the assumption that national housing policies are mostly inefficient, in the last section, there is a general discussion on housing policy that considers provincial differentiations.

Keywords:

housing problem; ownership status of residential unit; provincial differentiation

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T_13 HOUSING AND SHELTER / 648

Collaborative Housing as a Tool for Reclaiming the Right to the City: Case Studies from France

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The concept of ‘collaborative housing’ refers to various housing models that feature shared spaces or facilities designed for collaboration, resident solidarity, participation in the redevelopment or design processes, and internal governance based on collaboration (Vestbro, 2010a; Bresson and Labit, 2020; Fromm, 2012; Czischke and Huisman, 2018). In contrast to traditional housing, these communities center around diverse common areas, cultivating a distinct sense of belonging and mutual assistance (Arroyo et al, 2020). This characteristic has been especially vital during crises (Glass and Norris, 2023; Arroyo et al., 2021; Grellier, 2020).

Collaborative housing has gained significant attention as a potential response to ecological, social, and economic challenges facing contemporary urban environments across

Europe. This model reshapes the conventional housing approach by highlighting cooperation, sustainability, and a harmonious balance between private and communal areas in the housing settlement. The literature also examines the potential for collaborative housing to serve as an alternative to conventional urban development strategies in Europe (Bresson and Tummers, 2014).

France has a rich history of community-driven and affordable housing initiatives that have adapted to social, economic, and political shifts. Both public and private efforts sought to improve poor housing conditions and promote social mobility, beginning with the Habitation Bon Marché (HBM) in 1889 and the Siegfried Act of 1894. However, collaborative housing in France traces its roots to the Castor movement, which emerged after World War II, with families working collectively to build homes in cities such as Pessac and Lyon (Bresson & Denèfle, 2015). The Self-Managed Grouped Habitat Movement (MHGA) further catalyzed the spread of collaborative housing models in the 1980s. Since the 2000s, collaborative housing has gained significant traction as a response to ecological, economic, and social challenges, with initiatives targeting not only the middle and upper classes but also marginalized groups such as low-income households, disabled individuals, and older adults (Bresson & Labit, 2020). The term “habitat participatif,” introduced in the 2014 ALUR law, encapsulates the participatory approach to housing that allows citizens to engage actively in the design and management of their living environments.

This presentation contends that these three collaborative housing examples successfully reclaim the right to the city. They do this by fostering social diversity, mutual support, social care, financial accessibility, and a democratic decision-making process within the housing units. They also strengthen community ties, participate to the local governance and support social movements at the neighbourhood level. This analysis employs a mixed-methods approach, incorporating a survey of 102 participants from 15 collaborative housing sites and qualitative research including personal interviews and focus group interviews in three collaborative housing settlements from France.

At the micro level, this paper illustrates how democratized governance in collaborative housing promotes inclusivity and alters everyday life through social care practices. At the neighborhood or city level, it examines how collaborative housing projects interact with their surrounding environment, emphasizing their contributions to local community life and social value creation. This includes fostering ties with neighborhood residents, engaging in local committees, and supporting cooperative economies. Residents become active participants not only within their own housing project but also in broader neighborhood governance, creating shared spaces, organizing community activities, and developing initiatives that enhance social cohesion and collective well-being. These efforts illustrate the dual impact of collaborative housing: strengthening internal community dynamics while also contributing to the social fabric and sustainability of the wider urban neighborhood.

In summary, this abstract emphasizes that collaborative housing in France is an efficient tool for reclaiming the right to the city by promoting social inclusion, sustainability, and community empowerment. These projects utilize participatory governance to improve internal dynamics and strengthen cohesion within the broader neighborhood.

Keywords:

Collaborative housing; right to the city; social care; participatory design

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T_13 HOUSING AND SHELTER / 780

A Hierarchical Framework for Promoting Housing Justice and Social Equity through Adaptive Urban Design: A Case Study from Nanjing, China

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As global urbanization transitions into the stock development stage, the renewal of aging communities has emerged as a critical strategy for addressing the housing crisis and enhancing urban functions. However, three core challenges persist in current practices: balancing historical preservation with modern adaptability, safeguarding the housing rights of vulnerable groups, and reconciling social equity with economic feasibility. These challenges underscore the limitations of traditional regeneration models in dynamic adaptability and responsiveness to diverse needs, necessitating an analytical framework and design strategy that integrates theoretical rigor with practical applicability to address the complexities and diverse demands of residential community renewal.

This study, grounded in distributive justice theory and participatory planning theory, proposes an adaptive design approach centered around a hierarchical framework. It explores how social equity and inclusive development can be achieved in urban regeneration through dynamic adjustment and policy coordination. The hierarchical framework in this study specifically refers to a multi-level analytical structure spanning from the city scale to community, public space, building, and internal space levels, thereby providing insight into the localized aspects of the housing crisis. The research employs a case study methodology combined with spatial analysis to examine how these levels interact to shape key issues in housing regeneration across three dimensions: the social dimension focuses on mechanisms for resettling and protecting the rights of disadvantaged groups; and the spatial dimension analyzes the tension between preserving neighborhood fabric and optimizing residential functions; the economic dimension examines the dynamic balance between renewal costs and benefit distribution.

The Xiaosongtao district in Nanjing, as a representative example of old community renewal in China, reflects the complexity and diversity of these issues, particularly with respect to low-income resident resettlement, neighborhood fabric preservation, and functional optimization. The study analyzes the Xiaosongtao project through a hierarchical framework, revealing the roles of planning strategies, spatial design, and multi-party collaboration in achieving housing equity and adaptive design. At the planning level, the project uses a 'Retention, Remould, Demolition' strategy to dynamically optimize the district's functions, balancing historical preservation with modern needs. In terms of spatial design, the project introduces efficient space concepts, optimizing small residential units' functionality through 3.6-meter ceiling heights and diverse housing types, while accommodating the diverse needs of residents with flexible, adjustable public space layouts. On the collaborative front, the project facilitates feedback and adjustments through a residents' council, personalized 'one-household-one-policy' resettlement plans, and dynamic coordination between local government and design teams.

The study's findings demonstrate that the hierarchical framework and adaptive design approach can effectively balance the protection of disadvantaged groups' rights with the overarching goals of the project. Notably, the successful application of the 'Retention, Remould, Demolition' strategy illustrates the practical value of localized solutions in optimizing resource allocation, ensuring social equity, and fostering inclusive development. The Xiaosongtao project not only offers a resolution to complex housing disputes but also provides a replicable model and framework of tools for international research on housing equity and urban regeneration. Future urban regeneration initiatives should further strengthen resident participation mechanisms and multi-party collaboration, creating a more equitable and sustainable urban development trajectory through adaptive design and policy innovation.

Keywords:

Hierarchical Framework □ Adaptive Urban Renewal □ Participatory Planning □ Policy and Design Integration □ Affordable Housing

T_13 HOUSING AND SHELTER / 680

Using Geographic Information Systems to identify housing infill opportunities in Australian urban areas

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Australian cities are generally large and sprawling, predominantly located in coastal zones—thus vulnerable to several climate change impacts, including but not limited to floods, storm damage, cyclones and bushfire. In addition to climatic vulnerability, Australia has some of the largest and most unaffordable housing in the OECD. The 4 million people conurbation of South East Queensland (SEQ), which includes Australia's 3rd and 6th largest cities (Brisbane and the Gold Coast) is characterised by predominantly low density housing; with approximately 71% detached houses. The area is also characterised by consistently high population growth. Continued expansion into greenfield areas, however, is neither environmentally nor socially desirable, especially given the region is a prime food growing area, with many environmentally sensitive areas, including Ramsar sites and World Heritage Listed parks.

This ongoing research aimed to explore innovative ways to both provide equitable housing for all, while considering the difficult future conditions posed by climate change. Using a large local government—City of Gold Coast—as a case study, we used spatial analysis tools (ArcGIS Pro, Google Earth Engine, satellite imagery and Artificial Intelligence deep learning models), to calculate the proportion of single residential zoned lots in the urban footprint with sufficient space available for small to medium scale infill, such as ancillary dwellings, granny flats, and tiny houses. The total coverage of built infrastructure (houses, garages, swimming pools and the like) was calculated for each lot and estimates made on how much remaining land was suitable for a small dwelling (within planning scheme setback limits). Additional data, such as planning scheme zones and environmental overlays, bushfire and flood risk mapping and slope analysis further refined the list of suitable properties. Finally, we included comparative change in demographics between the 2016 and 2021 Census as well as some results of a decade of research into the tiny house movement in Australia.

We found that, within the City of Gold Coast, there were up to 70,000 suitable properties for low to medium density infill, that have few or no constraints. Infill development such as this not only protects greenfield land from development but adds to the housing supply and allows for improved access to essential services such as employment, schools, public transport and healthcare. An important additional benefit is a relative lack of NIMBY pushback on this type of development, as opposed to other urban densification models, especially high-rise apartments. Counter arguments to this are

that it further entrenches socio-economic disadvantage by increasing the property value of existing homeowners, and like all urban infill projects, can negatively impact urban greenspace. Nonetheless, in the short to medium term, this type of infill has promise to not only provide more and diverse housing, allow ageing in place, and help counter historical social objections to denser cities in Australia.

Keywords:

Infill housing; tiny houses; GIS; spatial analysis; missing middle; affordability

References:

See comments

T_13 HOUSING AND SHELTER / 225

A Study on Per Capita Housing Status and Living Quality Enhancement in Dashilan Historical and Cultural Block

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China's housing development has moved from incremental construction to the stage of improving the quality of stock. Historic and cultural block, due to their early construction, property rights, heritage conservation, and funding, have poor living qualities, difficulties in relocating populations, and a concentration of vulnerable populations, and residents generally lack a safe, healthy, and dignified living environment. Dashilan is one of the first national historic and cultural block in Beijing, and because the current renewal planning model is still limited to public space and street facade improvement, the housing problem has not been fundamentally solved, and there is a lack of quantitative assessment of the current per capita housing situation and the housing problem of the vulnerable populations. Therefore, this study firstly summarizes the experiences of eight countries or regions, including the United States, Canada, the United Kingdom, Italy, Germany, Japan, Korea, and Hong Kong, China, in terms of minimum housing standards and housing quality improvement. Second, based on the minimum housing standards of each country, combined with the seventh population census and field research data, the study quantitatively evaluates the current per capita housing situation in Dashilan in terms of spatial size, basic functional space, architectural performance and basic equipment, and the living environment, and identifies gaps in relation to the minimum housing standards of each country. Finally, drawing on international experience in improving living quality, we put forward policy recommendations in five aspects: sustainable development, space size, basic functional space, architectural performance and basic equipment, and living environment, and put forward the minimum per capita living space and basic environmental requirements, in order to guarantee a safe, healthy and dignified living environment for Dashilan residents, improve living quality and provide reference for historical and cultural block of the same type.

Keywords:

historic and cultural block; minimum housing standards; vulnerable populations

T_13 HOUSING AND SHELTER / 1518**The Socio-Spatial Implications of Urban Densification: The case of Oslo****Authors:** Rebecca Cavicchia¹; Roberta Cucca¹¹ *Norwegian University of Life Sciences (NMBU)***Corresponding Authors:** rebecca.cavicchia@nmbu.no, roberta.cucca@nmbu.no

Urban densification is often considered the best strategy for achieving sustainability goals and fostering social mix in urban contexts. While social mix has been used as a central argument to promote densification in several contexts, research has shown that densification is often linked to rising rents and housing prices, displacement, and exclusionary pressures if effective housing policies and regulations are not in place.

In Oslo, the case study of this investigation, densification is the main development strategy and has been primarily implemented in the eastern, historically less affluent side of the city, particularly through the redevelopment of former industrial areas. We argue that while a combination of a highly deregulated housing system, developer-led densification, and housing speculation risks creating exclusionary dynamics, the social implications of densification can vary depending on its location.

By analyzing census-tract-level data on household composition, ethnic background, and income, we explore whether newly developed densification areas in Oslo exhibit a more homogeneous or mixed socio-demographic profile in the western and eastern parts of the city and assess the implications for housing inequalities. Our analysis reveals that while the historical divide between Oslo's eastern and western sides remains, densification areas appear to contribute to a more balanced social composition. Indeed, while densification areas in the less affluent eastern districts attract households with a higher socio-economic profile compared to the surrounding neighborhoods, those in the west show the opposite tendency.

However, two key shortcomings emerge. First, densification areas in the east tend to attract higher-income households, aligning with findings from new-build gentrification research on the development of densification areas in attractive urban locations.

The second drawback concerns the west side, where densification interventions, while bringing less well-off residents into wealthier areas, remain sporadic and face strong local opposition. Further research should investigate the potential effects of densifying areas further west in Oslo, where the most exclusive single-family home neighborhoods are located.

Additionally, future studies should consider micro-segregation dynamics to better understand potential trade-offs between social mix and inequalities in housing standards, living conditions, and stigmatization in densification areas. Finally, comparative research on the implications of densification for desegregation in different housing regimes is needed.

T_13 HOUSING AND SHELTER / 1207**Milan inside-out: housing affordability and the extended urban region****Authors:** Lorenzo Caresana¹; Marco Peverini²; Massimo Bricocoli³¹ *DASTU, Politecnico di Milano*

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In the city of Milan, the gap between salaries and housing costs continues to widen. As the divide deepens, homeownership (by those who already own or inherit) or financial support are becoming almost necessary conditions for living and working in the city. For those who cannot rely on either of these conditions, the almost constant upward trend of property values and rents has a strong impact on housing affordability, even for broad groups of workers whose net wages don't grow but are well above the absolute poverty threshold. The risk is a progressive expulsion of low-income individuals and households from the municipal perimeter to hinterland municipalities, and at the same time, a blockade to the immigration of low-income individuals and households, with the result of a selective turnover. In Milan, as in the case of other attractive cities, the distance from the city centre generally corresponds to a cheaper housing supply. Nevertheless, our perspective is to uncover the articulated framework of relationships that run between the urban region and the central city, to open a broader reflection on the concrete and contextual conditions in which those excluded from Milan would find themselves living 'outside Milan'.

This contribution presents the outcomes of the second year of research activities of OCA, the Housing Affordability Observatory in Milan, focusing on the 'Milan inside-out' conditions of affordability between the central city and its urban region. The territory we have defined as 'outside Milan' includes administrative and analytical perimeters, in a square of about 60 kilometers around Milan: the equivalent of a 'section' of territory incorporating about 300 municipalities and most of the urban region. By analyzing the affordability conditions of the territory surrounding the attractive city, this work offers the elaboration of public and open data to represent and discuss the reality of this diverse territory. The densely populated urban region, affected by a strong commuting component to Milan, seems to offer some more affordable settlement opportunities, but with criticalities related to commuting costs and the value of time spent on transfers.

Keywords:

housing affordability; housing observatory; housing policy; Milan

T_13 HOUSING AND SHELTER / 849

Transitional housing. Adaptive and Sustainable Design Strategies for Gaza Strip Reconstruction

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This paper illustrates the experience of Università Iuav di Venezia (Iuav) as a consultant to the United Nations Development Programme (UNDP) Programme of Assistance to the Palestinian People (PAPP) in developing design strategies for the recovery, reconstruction and development for the Gaza Strip. Recognising the complexity of the humanitarian crisis and the challenges posed by the evolving conditions of ongoing conflict, the paper presents an adaptive and replicable design framework capable of responding to dynamic external pressures. This approach underscores the importance of flexibility and responsiveness in addressing uncertainties on the ground, including limited access to reliable information.

The strategy shifts from a rigid top-down model –standard to the majority of reconstruction experiences –to an adaptive bottom-up framework, introducing design methodologies guided by a cohesive urban vision. This approach aims to create a platform for international collaboration to address global challenges through locally informed and context-sensitive solutions. Luav's strategy involves an integrated and adaptive set of phased interventions, implemented using a community and area-based approach. These interventions prioritise the restoration of essential public infrastructure and services, inclusive economic recovery, and governance. Collaboration between PAPP and Luav enables iterative refinement of the strategy, incorporating feedback from various stakeholders to ensure contextual relevance. A first key outcome of this bottom-up process is the development of a transitional housing pilot project designed to meet immediate recovery needs while facilitating long-term reconstruction efforts. The pilot project proposes the creation of housing units functioning also as communal spaces with multiple uses. This minimizes financial and material resources requirements while fostering community interaction and social cohesion. The units are designed to accommodate essential services, such as water and energy connections and sanitation facilities, while providing spaces that can transition into more permanent housing solutions. Lightweight fiberglass technology enables the rapid assembly of the structure, comparable to standard early recovery interventions (tents, containers, etc.), while ensuring durability and dignity. This transitional housing system offers a medium- to long-term solution with the potential to adapt into stable housing or public services based on contextual needs.

The proposed design prioritises technical performance, community acceptance and urban integration. The units are adaptable to various densities, from single- to multi-generational households, and the modular system supports one-, two-, and three-story configurations. Features such as courtyards and accessible roofs are included to enhance the quality of life. Flexibility is a core design principle, allowing for site-specific urban configurations tailored to the unique characteristics of different locations within the Gaza Strip.

Community engagement is central to the strategy and must be conducted on the ground to identify needs and aspirations. Local communities and authorities are positioned as key stakeholders in shaping final solutions, with participatory processes forming the foundation of the broader design vision. Pilot project will act as a testing ground for fully constructed elements, with subsequent large-scale applications implemented in phases to address the varying needs of different populations. Decisions regarding structural and non-structural components were made with the long-term goal of establishing local production capabilities within Palestine. While the pilot project does not initially include the creation of production lines, the future establishment of such facilities is considered critical to scaling up the strategy. This approach generates local employment, enhances economic resilience, and fosters skill development. Concluding, these arguments overcome the business-as-usual intervention protocols and offer an updated approach to early recovery and reconstruction that emphasises adaptability and local empowerment. The pilot project is only one of a series that can occur in parallel, speeding up the process of societal, urban, and architectural recovery, laying - through community-based methods - the foundation for a resilient and inclusive urban future.

Keywords:

transitional housing; early recovery; community-based approach; sustainable reconstruction;

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T_13 HOUSING AND SHELTER / 1705

Housing Affordability in Europe - comparing housing markets and policies across Europe

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Housing, and more specifically providing affordable housing, is now a hot political topic with the European Union now having appointed the first ever Commissioner for Energy and Housing. The drivers of this contemporary housing crisis are manifold, and differ across Europe. In this paper, we will present key results of the ESPON House4All European Research project running from July 2023-July 2025. More precisely, we will first summarise the main policy developments at the European level, ranging from the rising attention towards housing towards the development of the new EU Housing Task Force across the Commission. We then second present key results of the indicator development for measuring housing affordability in Europe drawing on a weekly webscraping exercise in 31 countries. Third, we revisit typologies of housing policy families based on a literature review as well as the development of a European-wide compendium of policies contributing to housing markets in the ESPON space. Finally, we discuss key drivers of housing unaffordability based on the analysis of the compendium and the housing affordability indicators combined with case study research on specific housing policies. The paper thereby aims to draw attention to the local specificities of drivers of housing unaffordability while carving out general trends contributing to the contemporary housing crisis.

Keywords:

housing affordability; housing families; housing policies; social housing;

References:

ESPON HOUSE4ALL: Access to Affordable and Quality Housing for All People <https://www.espon.eu/projects/accessible-affordable-and-quality-housing-all-people-house4all>

T_13 HOUSING AND SHELTER / 857

Social impacts of public housing redevelopment: experiences of citizenship in Hong Kong

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This article explores the social impacts of public housing redevelopment through how its outcomes reshape public tenants' experiences of citizenship in Hong Kong. As the outcome of the redevelopment, public tenants' habitats are transformed by demolishing old structures of buildings and neighbourhood layouts and then building new ones; in some cases, residents' composition is also changed to integrate blends of public and private tenures under the rubric of 'public-private partnership' to redevelop ageing estates of pure public tenures (August, 2016; Tach, 2009; Ziersch and Arthurson, 2007). In many cases, these activities are led by the state, the public housing provider, while public tenants have limited decision-making rights about their neighbourhood. Such power relations result from the existing regime of property rights, where landlords play a role in decisions about the land while those who inhabit the area without ownership do not (Purcell, 2014). This article aims to understand the impacts of public housing redevelopment on public tenants' experiences of citizenship. Based on this research aim, we develop our main research question, 'How does public housing redevelopment shape public tenants' experiences of citizenship?' and two sub-questions: 1) what outcomes of public housing redevelopment are perceived by public tenants? 2) how does public housing redevelopment affect public tenants' experience of citizenship? We focus on the lived experiences of public tenants living in redeveloped public estates to understand the role of redevelopment as a planning tool in transforming residents' perceptions of their relations with the state in a specific local context. The case of Hong Kong offers a typical example of the state-managed housing system (Lau, 2007). As a property state global city with scarce land, the Hong Kong government places real estate in a vital role in the functioning of the whole economy (Haila, 2000), which is described as a property-led economy (Chui, 2001). At the same time, Hong Kong is well known for its large-scale public housing programme. With a 40-year history of constructing high-rise buildings to house low-income households (Peng and Maing, 2021), the Hong Kong government has been working on redeveloping its ageing public housing estates since the 1980s (The HKSAR Government, 2023). Although the demolition of old buildings and relocation of residents attract great public attention in Hong Kong, relatively little research has been published on the social impacts of this state-led redevelopment. Through in-depth and semi-structured interviews in Hong Kong, we have one-to-one discussions with 26 public tenants living in public housing estates as redevelopment outcomes. This analysis reveals that 1) redevelopment contributes to having a positive impact on public tenants' perceptions of how others see them and an equal society by narrowing the material gap in housing between the poor and the rich; 2) it has limited impacts on changing public tenants' sense of their position in society, which is determined by the housing system, the sense of responsibility of public officials, and political context. Based on empirical findings, this article reflects on whether neighbourhood planning could improve low-income groups' position in society to add a new perspective to the debate about the desirability and feasibility of planning. At the end of the article, we devise four practical policy accommodations at both the neighbourhood and city scales.

Keywords:

public housing redevelopment; social impacts; public tenants; experiences of citizenship

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T_13 HOUSING AND SHELTER / 14

Intersectionality and Urban Regeneration in Post-Crisis Athens, Greece

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This research critically evaluates the post-pandemic urban development trajectories and design-led regeneration projects emerging in Athens, Greece, following the compounded financial and humanitarian crises of recent years. Focusing on the Municipality's most socioeconomically marginalised communities, this study interrogates how urban regeneration initiatives intersect with issues of race, gender, class, and urban citizenship. Methodologically, it draws on a triangulation of document analysis, official spatial data, 62 in-depth semi-structured interviews, and critical discourse analysis of media and political speeches. Key findings expose the processes of displacement and dispossession that accompany many regeneration projects, rendering visible the lived experiences of communities frequently excluded from the sanitized discourses surrounding urban renewal. By foregrounding the voices and perspectives of those with intersectional identities, this research underscores the necessity of equitable and inclusive frameworks in urban governance.

Keywords:

design-led urban regeneration; intersectionality; post-crisis urban development

T_13 HOUSING AND SHELTER / 906

Converting commercial buildings to residential use: exploring health and wellbeing impacts from the deregulatory approach taken in England

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Given changing patterns of use of commercial space post-Covid, particularly offices, and situations of housing crisis being experienced in many places internationally, there is growing interest in adaptive reuse of commercial buildings for residential purposes. Sustainability considerations around the embodied carbon within building structures also makes such change of use schemes increasingly appealing. Alongside this, a supply-side understanding dominates discussion of how to respond to the housing crisis in many national contexts, leading proponents to call for ever further deregulation of urban planning and related built environment governance as the means to resolve the crisis, in a neoliberal imaginary.

In England, in 2013 central government changed planning regulations so that developers could convert office buildings and, from 2015, retail and light industrial spaces, into housing without needing the traditional case-by-case planning permission from the local authority: a process called 'permitted development'. Existing research has demonstrated how the deregulation has led to numerous housing quality issues, including in relation to the size of the dwellings created ('space standards'), natural light into habitable rooms, access to outdoor space and the location of housing in relation to neighbouring land uses and accessibility (for example Ferm et al, 2021).

There is a growing interest in the relationship between urban planning and public health (Pineo, 2022). Within a multi-scalar relationship between planning and health, housing quality is an important determinant of health and wellbeing and a major factor in societal health inequities (Bird et al, 2018). Given the increasing amounts of time people are often spending within their homes post-pandemic, this relationship is important, and these issues are exacerbated in socio-economically deprived neighbourhoods and for residents may have higher vulnerability than the general population.

Marsh et al (2020) have shown a range of causal pathways and health outcomes which could be related to a decline in housing quality associated with permitted development (PD) housing in England, but this was based on reviews of existing studies considering other types of housing rather than new empirical research. We have therefore been undertaking a major three year transdisciplinary study to better understand the link between living in permitted development housing and health and wellbeing outcomes, including through environmental monitoring and modelling of homes, analysis of the location of conversions, a major survey, semi-structured interviews and focus groups with residents of PD housing, and interviews and focus groups with planners and related officials across England. The survey has made use of a validated instrument called the Warwick-Edinburgh Mental Wellbeing Scales (WEMWBS) wellbeing outcome measure.

In this presentation, we consider the emerging findings from this study, particularly data relating to residents' own perceptions of the degree to which living in these deregulated conversion schemes impacts their health and wellbeing related to space, thermal comfort, amenities, outdoor space, windows and perceived safety.

We then consider the implications from this in terms of the relationship between planning regulations and public health, and the importance of design quality in broader debates about built environment governance and the housing crisis. We argue this is particularly important when adaptive reuse is proposed for existing buildings, which may not have been originally designed for residential uses, with implications for policy-makers and planning practitioners considering increasing office-to-residential conversions elsewhere.

Keywords:

Housing; Adaptive reuse; Office conversion; Health; Deregulation

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T_13 HOUSING AND SHELTER / 923

Housing Constructions and Urban Quality of Life: Findings from Istanbul Case

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Housing renewal, which aims to improve the existing housing stock's structural quality, is largely associated with earthquake risk and the expectation of economic benefits, in Turkey. With the effect of the legal regulation made in 2012 that encourages housing renewal in order to produce earthquake-resistant building stock (Angell, 2014), there has been a significant increase in the number of building construction permits in Istanbul. Housing production, both through property-led regeneration (Imrie and Thomas, 1993) and new construction permits on the undeveloped land on the periphery of the city, has brought about a change in the social structure in Istanbul (Ozus, et. al, 2011). In this paper, the relationship between the housing constructions in Istanbul and the change in socio-economic structure is examined and explained spatially, at district level. Housing constructions in Istanbul, triggered by economic, socio-cultural, political and spatial dynamics that differ according to the characteristics of the residential areas and social structure, is discussed especially in the context of housing renewals (Kısar Koramaz, et. al, 2018).

Within the research, data on the number of residential building permits and flats produced in Istanbul since 2012, and fundamental indicators of social-economic structure are evaluated, and the relationships between the indicators are examined by descriptive statistics and thematic maps. Research findings indicate that, in parallel with the spatial development of Istanbul and the growth of the housing market since 2012, the population of Istanbul has reached 15.66 million with a population growth rate of 13%, and that the spatial characteristics of the housing buildings produced in this process and fundamental social indicators such as household size have increased. Spatial analyses underscore the relationship between housing renewal dominance in the city centre

and the emergence of new housing markets on the urban periphery. While this finding aligns with expected trends, Istanbul's peripheral districts—marked by extensive urban growth and sprawl—also provide insights into the city's overall population growth rate (housing construction permits in Esenyurt, is as 186,990, in Basaksehir as 100,228 and Kucukcekmece 91,068). Notably, Kadikoy—as one of central district in Anatolian Side—ranks fourth in terms of the total number of residential building permits issued, with 87,721 apartments approved between 2012 and 2023. Based on published housing survey data (IMM, 2023) and official statistics (TUIK, 2024), housing construction permits in the districts analysed in this study appear to have a substantial impact on urban quality of life. This impact is observed not only in central districts with established planning background and infrastructural quality but also in those addressing critical challenges related to environmental quality and urban services.

It is expected that the paper will contribute to the discussions on examples such as Istanbul, where the effects of a rapid transformation of housing production are experienced both on spatial and social dimensions, especially triggered by disaster risks such as earthquakes. This paper lays the groundwork for future research to explore the spatial, ecological, and social impacts of housing construction permits on the housing quarters where they are issued. These impacts, often unnoticeable in the short term, underscore the importance of monitoring and regulating the long-term consequences of such construction activities, especially given the rapid yet legally incentivized processes currently active in Türkiye. In addition, the findings of the paper will enable an evaluation in relation to the urban macroform regarding the renewal processes of residential areas in the city centre, which is one of the main subjects of a research project that forms the basis of this paper.

Keywords:

housing renewal; urban quality of life

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T_13 HOUSING AND SHELTER / 796

The politics of housing informalisation

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Many Southern European countries are characterised by a variety of inhabitation practices that, despite their extreme phenomenological diversity, can all be labelled as expressions of informality/illegality: the construction of unauthorised housing units by the middle class, informal inhabitation practices by marginalised or racialized subjects, the

illegitimate occupation of public housing units. Around these practices, a series of public norms, policies and actions have been set up over the years. In some countries like Italy, these measures, despite being factually independent, nevertheless contribute to shape a precise politics, centred on the selective exploitation, guided mainly by politically mediated rationales, of the tolerance-repression binomial. Thanks to this politics, housing illegality/informality is made electorally, socially and economically productive and, at the same time, even when it is the subject of repressive campaigns, it is continually produced and reproduced. This happens because it is an extraordinary resource that allows a myriad of political, economic and bureaucratic actors to extract significant benefits. The present contribution analyses this politics of housing informalisation in Italy, highlighting its four main forms (i.e. selective social legitimisation; ethnic-based stigmatisation; judicial and administrative dislocation; preservation of grey areas) and stressing its epistemological value for a broader understanding of urban informality.

Keywords:

housing; illegality; informality; rules; regulation

T_13 HOUSING AND SHELTER / 1018

From Housing Crisis to Housing Solutions: Municipal Planning Strategies and Regulatory Frameworks in Braga's Social Housing Sector

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The evolution of social housing in Braga, city located in Portugal, presents a compelling case study of how medium-sized European cities navigate housing challenges amid rapid urban growth and market pressures. This paper results of a collaboration between academics and the municipality and examines the trajectory and current state of social housing in Braga over the past three decades (1974-2024), revealing how urban planning decisions, policy frameworks, and market dynamics have shaped the city's housing landscape. Despite experiencing population growth rates exceeding both national and regional averages since 2001, Braga's social housing stock remains limited, comprising just 1,2% of the city's 88.623 dwellings - notably below Portugal's national average of 3%.

The analysis identifies three distinct periods that have defined Braga's social housing development. The first period (1974-2000) was characterized by rapid urbanization and the construction of social housing neighbourhoods. While these developments responded to urgent housing needs, their peripheral locations and inadequate integration with urban infrastructure created conditions for social exclusion. This period demonstrates how spatial planning decisions can inadvertently reinforce socio-economic segregation, a challenge that continues to impact urban cohesion today.

The second period (2000-2008) marked an institutional shift with the creation of Braga-Habit, the municipal housing company, in 1999, and emphasized urban rehabilitation through programs such as PROHABITA, although these efforts coincided with a real estate boom that complicated affordable housing initiatives. The subsequent period (2008-

2017) witnessed intensifying gentrification pressures, particularly in the historic centre, highlighting the tensions between urban revitalization and social inclusion.

Currently, Braga faces unprecedented challenges in its housing sector. Market pressures have driven rental prices above 400 euros in many areas, contributing to spatial displacement of middle and low-income residents from central areas. The severity of the situation is reflected in a dramatic 373% increase in social housing applications between 2021 and 2023, from 81 to 383 applicants. This surge occurs against a backdrop of persistent challenges in existing social housing estates, where physical degradation and social stigmatization continue despite municipal intervention through programs like the Integrated Action Plan for Disadvantaged Communities (PAICD).

Looking forward, Braga's municipal authorities have outlined ambitious plans to address these challenges, targeting the construction of 700 new housing units annually to accommodate projected demographic growth beyond 200,000 residents in the coming decade. The strategy emphasizes rehabilitation of existing stock, particularly within designated Urban Rehabilitation Areas, leveraging national programs such as First Right and the National Fund for the Rehabilitation of Built-Structures. Notably, the municipality is pursuing innovative approaches, including private sector partnerships to expand affordable housing opportunities and the implementation of compensatory equalization mechanisms in the Municipal Master Plan to ensure more equitable urban development.

The research is integrated in DASH project (Deliver sAfe and Social Housing) financed by Marie Curie Staff Exchange program, which aims to generate new ideas to promote more sustainable and safer housing, and how to convert these new ideas into concrete housing products, processes and/or services. This project seeks to gain a holistic understanding of social housing systems and, by analysing legal frameworks, prices, accessibility, ownership and financing models, aims to develop innovative and sustainable housing solutions.

This paper contributes to urban planning discourse by demonstrating how historical planning decisions, institutional frameworks, and market forces interact to shape housing outcomes in growing medium-sized cities. It highlights the critical importance of integrating social housing initiatives with broader urban planning strategies, particularly in contexts of rapid growth and market pressure. The Braga case offers valuable insights for urban planners and policymakers grappling with similar challenges in medium-sized European cities, emphasizing the need for comprehensive approaches that balance physical rehabilitation, social inclusion, and market dynamics.

Keywords:

Affordable Housing; Housing Policy; Urban Planning; Municipal Governance; Housing Market

T_13 HOUSING AND SHELTER / 1080

Access to housing in the ecological transition. The relation between policies for the ecological transition and housing inequalities in Italy

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Climate change and the environmental crisis pose challenges that must be addressed in a rapid and decisive way. The green transition, significantly put forward by the European Green Deal, aims at facing such challenges through initiatives to make Europe climate neutral by 2050, boosting green growth, cutting pollution and creating green jobs. The green transition is expected to involve deep transformations towards sustainability and energy efficiency in multiple sectors of society and economy. While it has a strong focus on housing as one of the most climate-exposed and energy-consuming sectors, critical challenges have emerged as housing solutions that are ecologically more effective might be socially more exclusionary. Building on existing conceptual framework and on empirical data collected in the framework of the EU funded Horizon research “Rehousing: contextualized pathways to reduce housing inequalities in the green and digital transition”, the paper investigates the scope of existing housing inequalities in Italy and explores the possible effects of three policies linked to ecological transition –namely: densification, retrofitting and greening –on housing inequalities.

Italy is a homeownership dominated country with high and growing wealth inequality and more moderate-income inequality, featuring a shrinking population (due to low fertility and high outmigration only partly counterbalanced by foreign inflow). In the last forty years, despite a significant growth in the number of dwellings which outpaced the number of households (resulting in an increasing vacancy rate), housing prices grew substantially and access to housing became critical especially for households in the rental sector. In this period, the tenure composition has shifted in the recent period, with owner-occupation growing from 68% in 1991 to 77% in 2021 and rental tenure decreasing from 25% in 1991 to 17% in 2021. While poor households increasingly tend to live in rented dwellings, the share of public housing shrank from 5,8% in 1991 to 3,6% in 2021. Housing costs tend to be a larger burden for poorer households residing in rental tenure, and more so in bigger cities than in intermediate and less dense areas. EU-SILC data show a decrease in the share of overburdened households in those categories, especially in recent years, which can be linked to the introduction of a minimum income scheme (Reddito di cittadinanza), a support instrument for households in need, which has meanwhile been abolished. While social housing policies were marginalized, a relatively large share of the housing stock is old in comparison to other EU countries –in 2011, 72% of the dwellings had been built before the 1980s, when minimum energy-efficiency rules were required by the building code –and important country-wide retrofitting policies were introduced. Additionally, some cities adopted plans and initiatives to densify the urban fabric and increase green infrastructures, e.g. through new park and forestation.

Our paper explores those policies and addresses potential synergies and conflicts between policies for the ecological transition and access to housing, and more in general relations with existing housing inequalities in Italy.

Keywords:

Housing inequalities; Ecological transition; Italy

T_13 HOUSING AND SHELTER / 1680

Collaborative Housing and Planning: Institutional Interfaces in the UK and Spain

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Collaborative Housing and Planning: Institutional Interfaces in the UK and Spain

This research examines collaborative housing's contribution to planning practice through its function as an “institutional interface” through which housing struggles can be articulated and out into relation with the prevailing institutional logics of activity

(Florea, Gagyí and Jacobsson, 2022). It investigates how collaborative housing may become institutionalised within policy frameworks and what this means for its capacity to address housing needs and provide other social benefits and its implications for the political dimensions of the movement.

The study analyses cases from the UK and Spain through stakeholder interviews and policy reviews. These countries present contrasting contexts for collaborative housing development: the UK demonstrates emergence through community activism and some policy recognition, especially in specific areas, while Spain development emerges through more in connection with housing rights movements and shows more localised and urban centric policy recognition. In both cases policy support has been sporadic, rather than sustained. Case studies situate collaborative housing projects within their contexts to understand relationships between housing activists, residents and state institutions. The analysis focuses on interactions between housing organisations and planning systems to examine how housing struggles might be translated into planning outcomes. This analysis highlights the role of planning frameworks in shaping project outcomes and explores tensions between institutional requirements and community objectives.

The research contributes to planning scholarship by examining collaborative housing's position within institutional frameworks. Findings indicate these schemes require policy support and methods to establish and maintain affordability and other social benefits. Results show planning systems must develop specific mechanisms to support collaborative housing while preserving its distinctive characteristics. However, in a context of deepening housing affordability struggles tensions remain between the understanding of collaborative housing schemes as one-off projects versus a sustained empowerment of local communities in relation to housing affordability, housing choice and community control.

Keywords:

Collaborative housing, Housing; housing politics

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T_13 HOUSING AND SHELTER / 54

Echoes of a Company Town: 'Vacant Giants' as an Opportunity to Rethink Housing Affordability and Design

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The paper stems from a nationally funded project at the intersection of research and design called "Unconventional Affordable Housing", involving the Department of Architecture and Urban Studies (DASTU) at Politecnico di Milano, the University of Trieste and the University of Bari. In this context, a collaboration was launched between DASTU and the city administration of San Donato Milanese.

San Donato Milanese, a smaller medium-sized city with a population of approximately 33.000, is situated in the Milanese metropolitan area, bordering Milan to the southeast.

Skyrocketing housing prices and rents in Milan in recent years have produced negative spillover effects also in San Donato Milanese, as Milanese low- and medium-income residents are increasingly driven to seek alternative and more affordable housing options in the hinterland. While housing costs in San Donato are still somewhat lower than in Milan, efforts of the public administration to curb market dynamics have so far had limited success, and future infrastructure developments (like the extension of the metro line connecting the two cities) are expected to further intensify pressures on the local housing market.

San Donato Milanese moreover shows some peculiarities: the development of the city is inextricably tied to the establishment of the National Hydrocarbon Corporation, ENI (Ente Nazionale Idrocarburi) in the city in 1953, resulting in the transformation of the municipality from a small town of 2.700 residents in 1951 to a city of 27.000 two decades later – a process accompanied by the construction of various structures, including housing for employees and offices. Today, six giant (and thus highly visible) office compounds, partly designed by renowned architects, exist in the municipality. As a result of structural changes in economic structures and new modes of working, accelerated by the pandemic, two of these complexes have been dismissed in 2023 (the “Terzo Palazzo” and “Quarto Palazzo”), and two others are to be vacated in the short- to medium future. The ongoing collaborative process entailed a series of cross-departmental meetings, a workshop with key stakeholders within and outside the public administration, and a series of in-depth interviews. The aim is to undertake a shared reflection on existing housing challenges and visions of broader urban transformations for a city with specific historic trajectories, which have concrete impacts on the city’s morphology. The “Terzo” and “Quarto” have been selected as sites for the development of proposals of ‘unconventional affordable housing’, responding to challenges identified along with the municipality. The paper presents some reflections on the implications of the decommissioning of such a heritage on the urban fabric and identity of a city, and on what potentials this entails, discussing whether and under which conditions ‘vacant giants’ can be resources for rethinking housing affordability policies and experimenting new forms of housing design.

Keywords:

affordability; unconventionality; housing policies; transformative reuse; housing design

T_13 HOUSING AND SHELTER / 1363

From Residential Satisfaction to Neighborhood Satisfaction: A Conceptual Review and Framework for Clarity

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Residential Satisfaction (RS) is a widely studied concept in urban planning, environmental psychology, real estate, and marketing that influences housing quality, neighborhood livability, quality of life evaluations, and consumer preferences. However, a systematic review of 50 studies reveals inconsistencies in how RS and its subcomponent, neighborhood satisfaction (NS), are both defined and measured. While RS largely refers to an individual’s overall satisfaction with his or her living environment, many studies fail to clearly distinguish NS as a subcomponent of RS, leading to conceptual and methodological inconsistencies. Some studies address NS only as a physical construct (e.g., infrastructure, maintenance, accessibility), while others emphasize its social aspects (e.g., community relations, safety, social cohesion). This lack of clarity makes comparisons between studies difficult and compromises the accountability of urban research and policy practices.

To address this problem, this paper, after analyzing different measures and definitions, proposes a conceptual framework that explicitly positions NS within RS, acknowledging its dual nature - physical and social. This approach allows for a more structured and consistent measurement of living environment experiences, allowing for better comparative research. A clearer distinction between RS and NS can help policymakers design neighborhoods that address both the built environment and the social well-being of communities.

Keywords:

Neighborhood Satisfaction; Residential Satisfaction; Literature Review

T_13 HOUSING AND SHELTER / 104

Local Practices Addressing Migrants' Housing Precarity in the Veneto Region

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Access to adequate and stable housing is among the most pressing challenges faced by migrants across Europe, profoundly influencing their socio-spatial inclusion and right to the city (Ager & Strang, 2008; Muñoz, 2018; Boccagni, 2020). In Italy, these barriers are compounded by structural deficits in housing policies and pervasive discrimination (Marconi & Shkopi, 2022; Semprebon et al., 2022). Migrants are disproportionately affected by housing precarity, often forced into informal or insecure arrangements such as squatting, illegal subletting, or substandard housing, further deepening their socio-economic exclusion (Albanese et al, 2023).

This paper will examine promising local practices in the Veneto Region (Northeastern Italy), where economic, cultural, and institutional barriers exacerbate migrants' vulnerability to precarious housing conditions (Shkopi and Marconi, 2023). While high homeownership rates and a limited rental market represent structural obstacles to accessing adequate housing for all disadvantaged groups, migrants also face widespread prejudice and intolerance.

Based on action-research conducted by the SSIIM UNESCO Chair on the Social and Spatial Inclusion of International Migrants at the University Iuav of Venice, the study draws on qualitative data collected through interviews, focus groups with key stakeholders, and participant observation. It also incorporates insights from the Regional Board on migrants' access to housing established by SSIIM UNESCO Chair in 2022, which convenes civil servants, third-sector organizations, and civil society actors. This collaborative framework provides a unique perspective on local dynamics and potential solutions to housing inequalities.

Three case studies will be presented as emblematic of local initiatives to mitigate migrants' housing precarity. Driven by civil society organizations (CSOs) independently or public institutions in collaboration with CSOs, these practices include mediation initiatives to address landlords' mistrust toward migrant tenants, third sector-driven rehabilitation of substandard public housing stock, and the provision of intangible guarantees to facilitate private rental agreements through multi-actor comprehensive housing support programs. These programs, developed through partnerships between public administration and the third sector, encompass conflict mediation, community building, cultural mediation, training on rights and responsibilities, and other forms of assistance and accompaniment. The examined interventions show how local actors can mobilize territorial capital (OECD, 2001; Camagni, 2008) to devise creative solutions for expanding housing access while fostering socio-spatial inclusion.

However, these initiatives face significant challenges in scaling up, and being mainstreamed into regional policymaking. Key obstacles include fragmented governance

structures, limited coordination between public and private stakeholders, and insufficient structural funding to ensure continuity. By situating these findings within the broader context of housing financialization and commodification (Lombard, 2023; Fregolent & Torri, 2018), exacerbated by short term rentals linked to touristification processes, the paper highlights the need for planning policies that prioritize inclusivity and equity while addressing systemic barriers.

The paper will explore the transformative role of planning in tackling the housing precarity of vulnerable groups, considering collaborative frameworks involving NGOs, local governments, and community initiatives to achieve equitable housing outcomes. It will highlight the limits of ad hoc solutions and emphasize the need for systemic approaches to foster housing inclusion. By focusing on local practices and systemic barriers in cities of the Veneto Region, the paper aims to contribute to the discourse on housing justice and the role of planning in reducing inequalities, with implications for other contexts facing similar housing challenges for marginalized populations.

Keywords:

migrants; Housing precarity; Local practices; Veneto Region

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T_13 HOUSING AND SHELTER / 1276

Future Housing: Essential Resources for Youth and Their Impact on Planning

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The housing crisis in Germany, particularly the shortage of affordable housing in metropolitan areas, poses a significant challenge for middle- and low-income house-

holds. However, new buildings alone cannot resolve this issue, especially in the context of the climate crisis. Construction activities and the operation of buildings are among the largest contributors to CO₂ emissions in Germany (BBSR, 2020). For socially and ecologically sustainable urban development, transformative approaches are needed. This calls for identifying essential housing needs that genuinely enhance quality of life (Abel, 2023) and integrating these insights into planning processes.

Within the group of middle- and low-income households, particularly children and adolescents have specific needs that are inconsistently considered in urban planning. Drawing on empirical research conducted in a large housing estate in Berlin, I aim to provide insights into the housing realities of young residents. The research area is distinguished by a significant prevalence of single-parent households, a substantial number of individuals reliant on state transfer payments, and an elevated rate of child poverty (Bezirksamt Lichtenberg von Berlin, 2021). With a specific focus on these households, I will address the following research question: Which housing needs are essential for children and adolescents, and how can these findings be translated into planning?

Young people are active agents, who “do not merely passively consume their spatially structured (everyday) surroundings. Instead, they are active and competent producers of their spatial worlds”(Castillo Ulloa et al., 2023: 38). These practices we can also see in the research area. Here, young residents are often unable to live in their parents’ homes according to their own preferences, either due to a lack of economic resources or because they must constantly accommodate the needs of other household members. In response, they externalize their activities, which can be interpreted as a production of home (Löw, 2001). Through these practices, they address both their material and immaterial housing needs: For instance, at the apartment scale, the size of the homes may not be as crucial as opportunities for the appropriation of places and the production of space (Lefebvre, 1974; Akyildiz, 2024: 68–70). These observations indicate that, in the face of limited resources, young people develop adaptive strategies that make resources inside and outside their parental homes increasingly relevant. Along with that, the findings highlight the importance of the neighborhood scale. The urban characteristics and social infrastructure in the research area enable the externalization of activities. It is the qualities of the large housing estate that allow young residents to produce their spaces.

In times marked by a lack of affordable housing, urban planning should not only focus on increasing housing supply but also on creating further places, that allow people to satisfy their housing needs –regardless of the floor plan. So, transformative approaches are needed, to confront the housing and climate crises and to ensure the quality of life independently from the household’s income.

Keywords:

Housing; Youth; Children and Adolescents; Resources; Housing Needs; Space Production

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T_13 HOUSING AND SHELTER / 1003

Regional Effects of Housing Shortages in Europe

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Housing shortages are often associated with the high-demand city centres where their effects are most visible and intense. But housing shortages are regional phenomena whose effects extend far from the urban core. In this study, we explore the implications of insufficient housing completions for urban agglomerations in Europe. Our key question is: what do tight housing markets mean for neighbouring regions? Who is successful at breaking into the contested urban core and who gets pushed out to the surrounding regions?

Based on the ESPON Regional Effects of Housing Shortage project, this paper presents the results of four case studies from metropolitan regions across Europe, examining different strategies to combat regional housing shortages and accommodate development demands across regional boundaries. The focus will be on these constrained regions and the way these housing shortages play out when their effects transcend national and sub-national administrative borders. Our case studies are conducted using a mixed-method approach, including document and literature review, focus groups, expert interviews, and statistical analysis.

The paper discusses the strategies employed by the four case study regions in comparison and highlights the implications for strategic planning. The project will develop a policy toolbox based on the experience of these case studies, the initial results of which will be presented at the AESOP conference.

Keywords:

cross-border, housing shortage, regional, housing policy

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Predicting Housing Prices: The Case of Ankara Housing Market

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The housing market is considered a critical sector and a driving force in nearly all economies. In Türkiye, ongoing economic instability has further amplified the significance of the housing sector, fueling a steady increase in housing prices nationwide. Given its critical role in the Turkish economy, the housing market's trajectory is crucial not only for economic stability but also for household affordability. This study aims to predict housing market trends across various parts of the city by utilizing a comprehensive dataset of 20,000 rental listings scraped from a real estate platform. The dataset includes key housing attributes such as housing price, type, number of rooms, area, age, floor level, and geographic location. By integrating advanced data analysis and machine learning techniques, this research seeks to identify patterns and predict rental price movements, providing valuable insights for urban planning and housing policy development. Accurately predicting housing prices has been a critical issue that impacts a wide range of stakeholders, including landlords, investors, real estate agents, buyers, sellers, and institutions such as governments and banks.

Valuing housing presents a unique challenge due to its heterogeneous nature. This complexity has led most housing price studies to rely heavily on hedonic pricing theory. As Rosen (1974) explains, "Hedonic prices are defined as the implicit prices of attributes, derived from the observed prices of differentiated products and the specific quantities of characteristics associated with them." In simpler terms, the price of a house reflects the cumulative implicit values of its individual features, which cannot be priced separately. A hedonic equation is a regression model that links the price of a house to its various characteristics. In previous studies, the hedonic price model based on linear regression, which uses OLS estimation, has been often used to predict housing prices. However, the relationship between property value and its influencing factors is often complex and non-linear. Various other techniques have been developed that offer potential advantages over the standard approach. Recent research has demonstrated that non-linear models leveraging machine learning techniques provide more accurate and reliable predictions. These modeling techniques can be more accurate than the standard approach because they can learn from data and continually enhance their predictive performance. Artificial neural networks, gradient boosting, and random forests are the most fundamental and widely used machine learning algorithms for prediction. As a result of this study, it has been seen that machine learning methods make better predictions in line with the literature.

The second phase of the study focuses on evaluating the affordability of housing in different parts of the city, with significant implications for urban planning and housing policy. Housing affordability can be measured using various methods, such as the price-to-income ratio (PIR), which is defined as the ratio of the median house price to the median household income in a city or country. Using the price-to-income ratio, the study identifies areas at risk of affordability crises, gentrification, or housing shortages. For instance, neighborhoods experiencing rapidly rising rental prices can be flagged for interventions like affordable housing initiatives or rent subsidies. Conversely, areas with stagnant or declining prices can be targeted for revitalization efforts to prevent marginalization.

In conclusion, this research offers a robust framework for predicting housing market trends, combining machine learning, spatial analysis, and urban policy considerations. By providing actionable insights into rental price dynamics, it contributes to more equitable and sustainable urban development, addressing the housing needs of diverse populations in Ankara and beyond.

Keywords:

Housing Price Prediction; Housing Affordability; Machine Learning; Türkiye; Ankara

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T_13 HOUSING AND SHELTER / 1549

The third housing sector in Italy

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In Italy, and in Lombardy in particular, an interesting third housing sector has been developing for about 25 years. Born as a reaction to the dramatic lack of rental housing, promoted by entities such as the Milanese Church (Fondazione San Carlo), Fondazione Cariplo, the most important Italian bank foundation (Fondazione Housing Sociale), by the cooperative movement (DAR Casa) it has made a limited but significant contribution. Significant because it has managed to mobilize new resources for the implementation of social housing interventions (from donations to “patient” financial capital, to solidarity funds). Also significant because it has always expanded the notion of housing that consists not only of the availability of housing but the development of a range of related services that have characterized the social management of interventions.

The emergence of these experiences has been criticized for being intentionally misinterpreted at a certain stage by public policy as an opportunity for disinvestment in public social housing.

Today, faced with the housing emergency affecting many large cities, the third housing sector can find itself playing even more complex and interesting roles as

- the actor capable of managing the assets that public facilities are unable to reallocate because they need to be renovated
- a supply of subsidized rent that allows the exit from the public stock of families who no longer need to occupy public housing
- a wealth of experience in social management of interventions that can also be extended to the public estate
- the ability to tap private resources at a time when businesses themselves realize the need to take care of social housing, the main bottleneck for staff recruitment.

The paper discusses the possibilities of moving out of an experimental phase by aiming for greater integration among housing policy actors from the perspective of an in-depth look at the third housing sector activities.

Keywords:

Third housing sector, housing emergency, rental housing, public policy

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Displacement and Housing Affordability: Assessing the Economic Impact of Urban Redevelopment-Related Forms of Displacement

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In this paper I explore the impact of redevelopment-related forms of displacement on housing affordability and household economic well-being, focusing on both for-profit and not-for-profit urban redevelopment projects in Switzerland. Research in the U.S. has shown that forced displacement and evictions lead to lower incomes and housing stability, as households experience reduced earnings following eviction (Collinson et al., 2024; Desmond and Kimbro, 2015). However, the cost of housing in relation to household income has been underexplored in these studies. For example, households may be

paying more for housing due to increased rental prices, reducing housing affordability and leading to increased economic hardship. Research on housing affordability and rent burden (i.e. households paying more than 30% of their income on rent) has shown that the number of cost-burdened households has increased in recent years and that those affected make significant cutbacks on essential goods, work longer hours, or remain in unaffordable housing because they cannot afford to move (Angst et al., 2023; Rosen et al., 2023). Bringing the two strands of literature together, I explore how households displaced by for-profit or not-for-profit regeneration projects are affected differently by housing affordability by asking: Does forced displacement decrease housing affordability? And finally, how do displaced households adapt to increased rent-burden? To answer these questions, I study forced displacement due to urban redevelopment projects in urban areas in Switzerland, where about 60% of all residents rent their apartments. Rent regulations do not allow for rent increases in existing tenancies but in new tenancies landlords are allowed to set rents to neighborhood-level rents which leads to a gap between the average rent in existing tenancies and market-rate rents. This situation makes Switzerland an important case to study how renters cope with housing costs in the event of forced relocation. Therefore, the paper contributes to the understanding of the complex economic challenges displaced households face and provides implications for housing and urban redevelopment policies aimed at minimizing the negative effects of displacement.

Keywords:

Urban redevelopment; Housing affordability; Displacement, For-profit/Not-for-profit housing

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T_13 HOUSING AND SHELTER / 1730

NIGERIAN HOUSING DEVELOPMENT POLICIES IMPACT ON LAGOS HOUSING DEFICIT (1960 -2020): A Critical Literature Review

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The evolution of housing development policies in Lagos has responded to the growing population and urbanization challenges since Nigeria's independence in 1960. The rapid influx of migrants seeking better opportunities has exacerbated the housing deficit, necessitating policy interventions aimed at affordable housing solutions. Considering the

22 million housing deficits in Nigeria (World Bank, 2023), with around 2.5 million in Lagos (Oluwatayo & Amole, 2021) housing has become increasingly expensive and out of reach for low and medium-income earners. As a nation, it has experienced five phases of the National Housing Development Plan (1962-2020), and the critical question of reducing the housing gap and providing affordable housing to the urban middle-income and low-income demographics remains unanswered.

A review of state-initiated housing in Nigeria shows that government-led public housing began in colonial times following the 1920s bubonic epidemic in Lagos. Housing projects initially targeted expatriates, leading to the creation of Government Reserved Areas and the adoption of direct housing construction as a strategy for low-cost housing schemes (Aminu, 2019; Ayoade & Onifade, 2020; Chinwe, 2015). Direct housing construction and site-services strategies have remained Nigeria's predominant low-cost housing provision methods, alongside strategies such as slum clearance and resettlement, and core housing/incremental housing. (Olotuah & Taiwo 2015; Ibimilua & Ibitoye, 2015; NBRRI 2013).

This research traces the gaps in the effectiveness of Nigerian housing development policies from 1960 to 2020, using Lagos as a case study. It uses relevant housing development benchmarks to assess rent and mortgage cost accessibility for urban low-income earners and the realization of stated housing stocks with the 60-year study timeline.

Keywords:

housing; policies; development, deficits, challenges, implementation

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T_13 HOUSING AND SHELTER / 1512**Displacement Pressure in Vienna: Learning from Tenants' Experiences for Policy and Planning Responses.****Author:** Judith Schnelzer¹¹ *Austrian Academy of Sciences***Corresponding Author:** judith.schnelzer@oeaw.ac.at

This contribution takes a look at the affected tenants under economic pressure in the private rental sector in Vienna and how those have navigated their experiences of (displacement) pressure by incorporating seeking help at institutional interventions into their strategies. In Vienna, Austria, housing affordability has decreased especially with the onset of multiple crisis-related dynamics, such as the Covid-19 pandemic or the energy and inflation crises. Despite the extensive welfare state environment and the high share of a decommodified housing stock in Vienna (about 45% social/council and subsidized housing), these dynamics have further tightened the Viennese housing market and –particularly in the commodified private rental sector – rents have risen sharply. As a result, many tenants have come under (displacement) pressure. In response to these housing-related challenges, the City of Vienna implemented several new policy and planning measures, in particular to prevent evictions and to enable the provision of more affordable housing. For instance, the so called Wohnschirm (umbrella for the house) was newly introduced for rental and energy arrears, a billion Euros were made available by the federal government to subsidize housing construction and provision or partial and temporary rent caps were introduced. However, many tenants applied for council housing or to the Wohnschirm, putting pressure on these by overloading services and exhausting their capacity or financial resources. Empirically, this contribution draws on 18 in-depth interviews with tenants affected by rent increases in the private rental sector and their experiences of displacement pressure. The interviewees are tenants who have also turned to (newly introduced) institutional interventions in the hope of alleviating the pressures they are experiencing. This contribution analyses the interrelated dimensions of a) tenants' strategies of navigating displacement pressure, b) tenants' expectations of policy and planning responses, c) the impacts institutional measures have on tenants' lives and the housing market, and d) limitations of institutional responses in alleviating (displacement) pressure. This analysis will help to tailor policy and planning responses to housing affordability crisis. Based on the results, this contribution will critically discuss the ambivalent role of the policy and planning interventions in shaping the outcomes and impacts for the affected tenants. On the one hand, these responses may not only alleviate the pressures (at least temporarily), but they also create states of limbo and uncertainty, which even bears the risk of exacerbating displacement pressure when tenants rely on the help of institutional interventions. Moreover, while these efforts may support tenants in their efforts to keep their homes or help them move, they appear to enable a form of state-funded reproduction of the profit-maximising rationale of the private rental sector. By incorporating the perspective of those affected into planning, this contribution will outline dimensions that seem to be neglected in policy and planning responses, in particular towards the experienced affects, emotions, and psychological implications for tenants under pressure.

Keywords:

Displacement, Economic Pressure, Housing, Affordability, Commodification, Welfare State Intervention

T_13 HOUSING AND SHELTER / 1648**Keeping it Real: Reconciling Housing Pressures and Economic Character in the Heart of the European City.**

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A defining planning challenge for contemporary European cities is the housing provision and affordability crisis. City planners are compelled to increase the delivery of dwellings, while addressing concerns about affordability, project viability, and functional complementarity through mixed-use developments. Moreover, in the context of climate crisis, these ambitions are accompanied by concerns over how to best achieve a “humane” form of urban density which addresses liveability, prosperity and environmental considerations.

This complex planning challenge is especially acute in second tier, restructuring cities, where there is an economic imperative to attract and retain young households and talent as part of their competitive and prosperity policy agendas, while strengthening the existing economic base and resident's needs.

Tackling this can entail difficult decision-making involving the prioritisation of certain policy objectives and balancing various planning interventions. . One such conundrum is how to retain and nurture the kind of small business base which typically flourishes in centrally-located, yet often marginally-invested in, areas of the city. These business activity concentrations often serve as contributors to the distinctiveness of cities as well as important seedbeds of economic innovation. Yet they are located where opportunity and market pressure for new housing is most acute.

The challenge of reconciling these priorities –“keeping it real”–is explored here through comparative case study research involving second tier cities Birmingham (UK) and Rotterdam (Netherlands) and their experience in managing change in central station urban regeneration areas. These second tier cities face similar planning cultural context and the challenges mentioned above, with the station areas Digbeth (Birmingham) and Schiekadeblok (Rotterdam) as cases in point. Both regeneration sites with established fine-grain local entrepreneurial and cultural economies, experience market pressure to accommodate high density housing due to their vicinity to high speed rail station investments and improved connectivity resulting in contested pro-preservation versus pro-development visions for the area.

This study explores the implications of the use of planning tools, policies, and powers on the decision-making and actions by key actors in two urban transformation areas. It addresses the following question: how do actors make decisions about the integration of planning challenges in mixed-use urban station areas balancing established local economies with housing development pressure. It considers understanding and framing decision-making processes around retaining often scrappy business space , (re-)integrating these functions into new developments, by using density and development processes as a mechanism for innovation –all through lens of the cities’planning histories, cultures and governance contexts.

Keywords:

Housing pressure; Local economies; Planning decision-making; Urban transformation; urban densification

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Patterns of development and integration of new residential areas on the periphery of Moscow: post-urban growth strategies for space production

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The research is aimed at studying the patterns of development and integration of new mass housing residential areas on the periphery of Moscow in logic of postmetropolis urbanization (Soja 2000). The rural areas annexed to Moscow less than 15 years ago have increased their population to 750,000 people, and by 2035 1.5 million will live here. In fact, an urban mega-satellite built from scratch will appear nearby the Russian capital city.

Although the development of the Moscow periphery resembles mass residential construction in the form of late Soviet residential development, the investment logic of development sets a different structure of spaces –the residential function of territories is not complemented by the proximity of workplaces (the proletarian periphery of socialist Moscow combined both functions), the development of large territories occurs in stages through the implementation of small-scale development projects - quarters or individual phases, stretching the building process for decades, constantly modify the original plans and planning projects to suit market conditions and investment cycles. The unfolding processes have more similarities with other cities of the Global East (Müller 2019) than with the socialist past.

We propose the following working hypotheses: 1) the logic of the investment cycle and the diversification of risks by property developers leads to the urbanization through seepage (forests, villages) into voids of rural areas, 2) this pattern of space development generates the compactness and isolated residential areas. Such development tends to minimize risks and maximizing profits of the capitalist method of space production. This is an urbanization of residential estates or minimal areal units of peripheral space, rather than complex site development.

The purpose of the study is to identify patterns of development of Moscow's peripheral areas in the process of mass residential development and to assess their integration into the established urban system. Here, integration is understood as the inclusion of these territories in the center-peripheral relations, the filling and transfer of both new and old functions –the transfer of some functions from “old” Moscow to these areas. An example of such a shift is the specialization of New Moscow in affordable standard-class housing, while new construction inside the “old” city is shifting to middle- and upper class housing. Affordable housing in Russia is understood as purchased with a mortgage, social housing in Moscow is nothing more than a vestige of socialism. Although housing policy in Moscow is set by a neoliberal approach and fits into modern trends of urbanization (Brenner and Schmid 2015), the development of the new areas is subordinated to the logic of state capitalism (Kinossian 2022; Kinossian 2023).

We look at the processes of space exploration using two optics. The first is the study of spatial development of territories from the perspective of urban planning, the second is the optics of a resident of these territories, how he or she feels in this environment, how she or he appropriates and interprets it. Such buildings form specific vernacular areas of citizens, formed by the isolation of new residential buildings both on the scale of a megalopolis and on the scale of local isolation from neighbors - residential buildings literally rest against a forest or a federal highway, its functional monotony, and the subway station acts as a portal to the big city.

Keywords:

residential development; postmetropolis; neoliberal urbanism; urban periphery; state-led urbanism

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T_13 HOUSING AND SHELTER / 1736

Who governs housing policies? The challenges of housing governance between administrative decentralization and new forms of territorial governance in Europe

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This paper analyzes the transformations of housing policy governance in Europe, with a focus on the redefinition of housing responsibilities and the role of the actors involved. The focus is on the comparison between Italy and France, two countries that, albeit at different times and in different ways, detect processes of decentralization and (re)structuring of housing governance.

From a political point of view, administrative decentralization has been a defining trend in the evolution of Western European welfare states since the 1970s (Kazepov, 2010). In Italy, constitutional reforms transferred housing policy from the central government to regional authorities, granting decision-making autonomy but also leading to reduced public housing investment and greater challenges for vulnerable populations (Bricocoli & Cucca, 2014; Storto, 2018). France, despite some recent delays due to political instability in the government, is likely to follow a similar trajectory as part of its broader “administrative simplification” policy agenda, in which housing decentralization is included. The French case is particularly interesting: although it is characterized by a highly centralized political architecture, it has experienced two waves of administrative decentralization since the 1980s, which were nevertheless considered “incomplete” and “partial” (Quilichini, 2001; Driant, 2015; Gimat, 2017); So far, these reforms have never directly affected housing policies, which has remained a state competence. The new prospect of decentralization reform could thus represent a historic crossroads for French housing policies, traditionally robust but considered “ineffective” by the government (Daoulas, 2023) due to the complex multiscalarity of governance and a housing crisis that counts 4 million “mal-logés” (Fondation Abbé-Pierre, 2024).

Through a literature review the initiation of a series of interviews with housing stakeholders in Italy and France, the paper aims to explore housing governance through two aspects. On the one hand, it provides a systematic reading of housing governance in Italy and France, clarifying the legal concept of “administrative decentralization,” and analyzing both its political promotion and its effects on housing policy management. On the other, it explores an alternative model emerging in the French academic and professional debate: the “territorialization” of housing policy. This approach, more flexible than traditional administrative decentralization, would imply a constant dialogue between the state and local actors, introducing a constraint of “obligation to results” rather than a mere “possibility of results” (Quilichini, 2006) as in the case of administrative decentralization. Examination of this planning policy could open up scenarios on the applicability of this housing policy governance tool in other European contexts.

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Keywords:

Housing governance; decentralization; territorialization; governance.

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T_13 HOUSING AND SHELTER / 1790

Ownership Dynamics of Low-Income Households Under Iran's Mehr Housing Policy (IMHP) (The Case Study of 13 IMHP Residential Complexes in Babol and Babolsar, Iran)

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The relationship between public housing policies and ownership presents several challenges which often stem from the tension between the goals of providing affordable housing for low-income households and the realities of market dynamics,

socio-economic factors, and policy implementation (Phang & Pacey, 2018; Aalbers, 2016; Rolnik, 2013; Rohe, Van Zandt, & McCarthy, 2002). Iran's Mehr Housing Policy (IMHP), implemented between 2007 and 2013, represents the Iranian government's most extensive intervention aimed at providing affordable housing for low-income households. Under this policy, numerous residential units—both in the form of complexes and stand-alone buildings—were constructed across the country. In Mazandaran Province particularly, 65,000 units were built to accommodate 200,000 individuals, with one-third of these units organized into residential complexes. These complexes varied significantly in ownership—state-owned versus self-owned—and location—inside versus outside of the administrative municipal border—.

Affordable housing, as defined by Freeman and Schuetz (2017), must be sold or rented at below-market prices and occupied by households below a defined income threshold. To achieve this, IMHP employed several implementation tools, including: allocation of state-owned land, construction on inexpensive suburban plots, provision of state loans, legal and bureaucratic facilitation, applicant registration, and resale restrictions.

More than a decade after the delivery of IMHP units to target households, this study examines the effectiveness of IMHP in achieving its goals. Specifically, it addresses the question: 'Has IMHP led to own and occupy housing units by low-income households'?

Empirical studies highlight that public housing units are increasingly treated as financial assets, leading to speculation and price inflation that exclude low-income groups (Aalbers, 2016). Market mechanisms often transform public housing into a commodity, benefiting investors rather than low-income residents (Rolnik, 2013). Public housing policies may also displace low-income residents, creating housing more attractive to middle- and high-income buyers (Hackworth & Smith, 2001), or result in mixed-income neighborhoods (Lees, 2008). Resale restrictions, commonly imposed to maintain affordability for future low-income households (Rohe, Van Zandt, & McCarthy, 2002), have varying impacts on neighborhood stability and socioeconomic integration. In some cases, these restrictions lead to vacant units (Han, 2014), while in others, they enable low-income households to benefit from housing market gains (Phang & Pacey, 2018).

This explorative study employs quantitative methods (field surveys and statistical tests) to investigate ownership dynamics in IMHP housing complexes in Mazandaran Province. Using proportional stratified sampling and systematic sampling, 335 questionnaires were distributed across 13 IMHP housing complexes in Babol and Babolsar, encompassing 3,031 housing units.

Preliminary findings suggest that in some IMHP complexes, target households sold their units to profit from the price difference between affordable and market-rate housing, leading to new owners replacing them. In other cases, units were rented out for monthly income, attracting new residents. Additionally, some units remained vacant due to inadequate demand. These outcomes raise critical questions about the viability of IMHP in meeting its original objectives and point to broader implications for designing effective future housing policies.

Keywords:

IMHP; Affordable Housing; Ownership Dynamics, Low-Income Households; Real Estate Market.

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Track 14 | ETHICS, VALUES AND PLANNING

T_14 ETHICS, VALUES AND PLANNING / 1753

Classical versus Modern: Dissecting the Contemporary Swedish Architectural Debate

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This presentation will discuss the empirical findings of our forthcoming article, which examines the role of architectural aesthetics in contemporary urban planning debates. While discussions on justice in planning typically focus on issues such as housing, infrastructure, and sustainability, the aesthetic qualities of the built environment remain relatively overlooked. However, the public architectural debate scrutinized in this study, regarding a perceived lack of beauty in contemporary building, suggests that architectural aesthetics raises several important and complex issues, with implications for democracy, well-being, and urban governance. The debate illustrates the broader challenges of upholding justice in planning when multiple and sometimes conflicting values—public preference, expert knowledge, cultural heritage, and sustainability—must be reconciled. Our study analyzes this ongoing public architectural debate through an argumentation analysis, systematically mapping and evaluating the reasoning behind different positions in the mentioned architectural debate. More than 250 articles from the Swedish press between 2017 and the end of 2022 were collected and analyzed.

Using argumentation analysis as our primary methodological approach, we have identified three dominant themes in the debate. The first concerns the relationship between architecture and beauty. A prominent voice in the debate argues that classical and traditional architectural styles offer a superior aesthetic experience. This aesthetic argument is sometimes framed in terms of intrinsic beauty, where classical architecture is seen as objectively preferable, while in other instances it is based on empirical claims about public preferences for classical styles. However, another voice in the public debate challenges these assumptions, arguing that beauty cannot guide urban planning because it is subjective, that stylistic preferences are culturally and historically contingent, and that architectural quality should not be reduced to aesthetic style alone.

A second central theme in the debate concerns democracy in architectural decision-making. Our argument analysis shows that proponents of “traditional architecture” often emphasize that planning decisions should reflect majority preferences, citing surveys that show strong public support for classical and traditional styles. They argue that the dominance of neo-modern architecture in Swedish urban development is evidence of a democratic deficit in planning processes. Opponents, however, counter that architectural design is not merely a question of popular opinion but requires professional expertise and creative autonomy. Some also warn that political intervention in architectural aesthetics has historical precedents in authoritarian regimes, raising concerns about the risks of imposing stylistic mandates. This conflict reflects a key challenge for justice in planning: how to balance democratic legitimacy with professional judgment.

The third theme we identify in the debate is the relationship between architecture and health. Proponents of classical architecture often argue that traditional styles contribute positively to mental health and social cohesion, pointing to research in neuroarchitecture that links symmetrical and proportionate design to positive emotional responses. However, critics argue that this perspective oversimplifies the complexity of urban health, which is influenced by a wide range of factors. Thus, the debate reveals

a deeper question about how different values - such as aesthetics, functionality, and public health - should be prioritized in urban planning.

By systematically reconstructing and evaluating these arguments, our study contributes to a more structured understanding of how aesthetic disputes in architecture intersect with broader ethical and political issues. We explore how justice and values can be operationalized in planning when diverse and conflicting interests must coexist. How should urban aesthetics be governed in a way that is both democratically legitimate and professionally informed? To what extent should aesthetic decisions be democratized, and how can this be done without undermining architectural quality and innovation? And what role should aesthetic considerations play in urban justice?

Keywords:

Architectural aesthetics; urban justice; argumentation analysis; public debate

T_14 ETHICS, VALUES AND PLANNING / 1147

Futureproof new towns: lessons in flexibility and indeterminacy

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This paper will present emerging findings from new research, commissioned by the Royal Town Planning Institute (UK), on flexibility and indeterminacy in new town planning around the world. The research has been timed so that its publication coincides with the UK Government's announcement of locations for a new generation of new towns in England.

New towns are characterised as large, multi-functional developments, situated on previously undeveloped land, at some distance from existing settlements. Locations and scales are usually determined as part of larger regional or national development plans. New town planning is therefore an inherently multi-scalar governance activity, responding to challenges and needs facing existing communities. Increasingly, new town planning involves international networks of policy, practice, finance and diplomacy. It also operates as a device for alignment between interests, and serves as a media and communications tool for the production of political communities and constituencies. This in turn is a means to attracting interest, investment and commitment from politicians, businesses, workers and residents.

The mid-20th century international high watermark of new town and new city planning (Peiser & Forsyth 2021). As well as greater internationalisation, much has changed since that point, including concerns around community participation, regeneration, heritage, context, and flexibility. By the 1970s, many of the first generation of new towns in Britain were felt to have aged poorly –the ethos of their planning was seen as having been prescriptive and deterministic –locking a particular moment of time into the spatial form of a community. At the same time, interest in systems theory and cybernetics was on the rise; such approaches were pioneered by theorists such as Melvin Webber (Hall 1996). This resulted in the philosophy behind the UK's last, largest and arguably most successful new town, Milton Keynes.

Unlike previous new towns, Milton Keynes was planned explicitly planned with flexibility in mind amidst awareness of the pluralisation of the concept of the public interest.

The architect-planning firm which drew up the original Plan for Milton Keynes, Llewelyn-Davies and Partners, was acclaimed for bringing modernism to hospital design. Milton Keynes was therefore planned like a modern hospital expanded to the scale of a city – around a wide, decentralised, extensible grid layout. (Llewelyn-Davies 1972). This grid became a kind of public commitment to the future, or a ‘platform’, or set of rules, within which development would take place. This represented a shift in the form and relationships of urban governance, foreshadowing planning under neoliberalism.

Today’s major policy concerns include widespread political change, climate resilience and geopolitical fragmentation; the question of planning for an indeterminate and uncertain future is as relevant as ever. This paper will convey findings from a variety of international cases –present-day and recent new town endeavours –which explore varied attempts to incorporate uncertainty. The paper will conclude by reflecting on continuity and change in the ethos of planning between the 1960s moment of the pluralisation of planning, and the present-day moment characterised by a media age of ‘visioning’ and policy appetite for discrete urban neighbourhood creation.

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Keywords:

new towns, new settlements, indeterminacy, flexibility

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T.14 ETHICS, VALUES AND PLANNING / 1610

Unveiling Justice Perceptions in Managing Pluvial Flood Risks

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Flood risk management (FRM) in the Netherlands is historically rooted in a protectionist discourse, driven by large-scale interventions in the 20th century to mitigate fluvial and coastal flood risks (Kaufmann et al., 2018). However, the growing impacts of climate change, such as extreme weather events and rising sea levels, have intensified calls for more adaptive policies. These policies are intended to balance collective solidarity with a larger emphasis on individual preparedness, partially in response to the rising costs of recovery after pluvial floods. This study explores how Dutch residents perceive justice within FRM, using pluvial flooding as a case study.

Justice, as a normative and multifaceted concept, has increasingly been recognized as a

critical consideration in spatial planning, both in academia (Moroni, 2020) and in practice (Voorontwerp Nota Ruimte, 2024). A growing body of research suggests that while differing interpretations of justice are not inherently problematic, acknowledging and explicitly addressing these differences is very important (Weghorst et al., 2024; Wijsman & Berbés-Blázquez, 2022). This study investigates how residents of flood-prone areas conceptualize and prioritize justice in decisions about flood preparedness. We analyze the narratives that underlie residents' perceptions through interviews and compare them to institutional justice discourses.

Our findings reveal dominant narratives emphasizing government responsibility, shaped by residents' perceived safety from floods due to large-scale flood infrastructure projects. These narratives contribute to a "silent" justice discourse (Kaufmann et al., 2018), where implicit expectations overshadow explicit debates, particularly concerning pluvial flooding. Although pluvial flooding is increasingly seen as a significant threat, residents show a limited sense of urgency for taking personal adaptive measures.

By comparing these insights with justice markers identified in the literature, we uncover key parallels and divergences, particularly regarding how justice is operationalized in societal and planning contexts. These findings highlight the challenges of transitioning from persistent protectionist paradigms to more adaptive approaches.

This study emphasizes the importance of justice-informed strategies in addressing evolving climate challenges. By focusing on the perspectives of residents, it provides a richer understanding of justice in FRM and offers actionable insights for policymakers. Furthermore, it extends existing research by examining whether justice discourses on pluvial flooding remain underdeveloped and how implicit assumptions about government responsibility influence adaptive capacities.

Keywords:

Justice perceptions; Narrative analysis; Flood Risk Management

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T_14 ETHICS, VALUES AND PLANNING / 1496

Hybrid Spaces and Planning: Exploring Just City Debates in the Digital Era

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The paper aims at exploring how models of urban justice, which in the Twentieth century have been essentially based on the equal distribution in space of services and ac-

cessibility opportunities, can be imagined and redesigned in an era, in which inhabited spaces tend increasingly to be a complex mix between spaces in the digital and in the physical spheres, hybrid spaces or hybridscapes. Hybridscales are formed by spaces located simultaneously across such spheres, and by the spatial and social implications they have at both individual and collective level. They concern different areas of urban and daily life, such as work, education, social relations, leisure, etc., and the understanding of themes of urban justice and citizenship has still to be fully explored in such hybrid spheres.

Cities and urban regions have been centre-stage in the debate about inequalities and social justice during the Twentieth century, and they still are today (Fainstein 2010), due to the extreme concentration, polarisation and acceleration they impose to social and economic phenomena. Meanwhile, the type of space(s) people inhabit has been changing with ever-growing speed: this makes such hybridscales crucial, but very difficult to understand, deconstruct and analyse as complex and multi-layered socio-technical systems, as far as their implications in terms of social interaction, dynamics of inclusion and exclusion and forms of differentiation and inequality are concerned (Kitchin, Cardullo, Di Felicianantonio 2019; McKinnon, Burns, Fast 2023).

The understanding of themes of urban justice and citizenship, as well as the insurgent dimension of struggles for justice (Isin and Ruppert 2015) have still to be fully explored in such spheres. At the same time, while the smart city rhetoric is assuming a prominent position in urban debates, it ultimately concerns only a specific form of socio-technical arrangement, linked to government and control dimensions.

While many of the economic and social mechanisms contributing to the creation and reproduction of social and spatial inequalities are still at play today, even in an exacerbated form, the digitalisation of many spheres of urban life for citizens has implied further lines of fracture and further growing inequalities (McKinnon, Burns and Fast 2023). Thus, if we look at such spheres of contemporary urban life, issues concerning fairness and justice, equal access and the full deployment of citizenship rights can be seen as highly problematic: not only it becomes impossible to deal with already existing inequalities with the spatial tools experimented in the past, but hybridscales imply completely new forms of differentiation and inequality that have to be newly named, identified, and tackled with a new vocabulary and with novel theoretical, analytical and policy tools.

The main objective of the paper is to reflect upon the possible paths to more just cities in the digital age, and on what concepts of justice, fairness, equality, and citizenship rights may mean in hybrid urban landscapes. To do so, the paper argues that new research aimed to identify new lines of inequality and possible paths to more just and fair urban environments is thus becoming a pressing need.

Keywords:

hybridscales; urban justice; citizenship

T_14 ETHICS, VALUES AND PLANNING / 1881

Framing the Landscape, Concealing the Waste-scale

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Bayramoğlu, historically known as Philokrene and dating back to the 14th century, stands out as one of Istanbul's coastal settlements. After the 1970s, it was reshaped as a holiday area extending beyond the city limits in response to Istanbul's expanding urbanization dynamics. Located on the Bayramoğlu peninsula, the Öbitalı Coastal Site was designed as an alternative holiday settlement to address Istanbul's secondary housing demand, representing an example of the coastal expansion of the apartmentization process in Turkey. Consisting of concrete blocks, this site was built to ensure that

every apartment had a sea view. The design and planning approach, which maximized individual views, simultaneously contributed to the removal of waste through the same landscape.

Bayramoğlu and similar coastal settlements exemplify the impact of urban growth on rural and natural areas. The filling and reconstruction of the shoreline extended the coastline further into the sea, transforming both the built environment and ecosystems. As seen in the Öbitaş Coastal Site, many residences in Bayramoğlu provide direct access to the sea via modernized concrete sunbathing platforms. However, in this process, concrete sewer pipes have transported waste that has harmed the coastal ecosystem. These interventions pose a significant problem for urban ecology while also becoming part of the growing ecological crisis in the Marmara Sea. In recent years, with the mucilage (sea snot) crisis, the necessity of reevaluating such coastal transformations within a political-ecological context has become even more evident.

This text aims to discuss the intersection of coastal urbanization, housing policies, and ecological destruction, with a particular focus on Bayramoğlu. The privatization of coastal areas and the restriction of access highlight the need to consider urbanization not only in spatial terms but also in its ecological and social dimensions. While tracing my childhood memories of this area's transformation, I will also focus on developing a critical perspective within the framework of ecological responsibility. Rather than viewing mucilage merely as a disaster, it should be understood as a consequence of coastal policies and urbanization processes, emphasizing the importance of developing a sustainable approach in coastal areas. In this context, I aim to present a discussion centered on the decisive role of concrete in urbanization practices and the ways in which coastal landscapes are reimagined.

Keywords:

Concrete, Landscape, Mucilage, Housing, Political Ecology

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T_14 ETHICS, VALUES AND PLANNING / 1210

Common Good as an Enduring Value in the Contemporary City Space

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Background

In the contemporary context of the discipline of urban planning in research and design, as well as in professional engineering practice of shaping urban spaces there is an unspoken questioning of paradigm. What is a good space, how to evaluate its quality and functioning? Various methods are being elaborated to describe and quantify spatial qualities or poor features. The globalised world in the XX and XXI century provides “travelling” concepts. Amongst many others: 15 minutes city (chrono urbanism), creative class priority as motor of economic growth, revitalisation of post-industrial zones (up to the degree of

styling new constructions as “lofts”), walkable and cycling priority, sustainable and eco-friendly concepts, social occupations and temporary management (governance), augmented - hyper connected smart city. As for measuring the urban phenomena: Space Syntax, quantitative GIS mapping methods, etc. are applied, and new are elaborated with the help of programming and Artificial Intelligence technologies.

Scope

All of the above listed ideas and approaches encounter limitations in meeting and addressing the complexity of urban and suburban spaces. Apart from cognitive theoretical frameworks and hard data there are fluid social aspects. Common Good concept (Moroni, 2024) travels in time and space across cultures and geographical regions, remaining actual and being constantly updated by representatives of diverse disciplines. The aim of the study is linked to the presentation of the concept of the Common Good as the lecture grid of contemporary cities.

Research Question

The author reminds the potential of the reflection on Common Good, allowing to organize observations and perceptions around communal sharing. This framework (Ostrom, 1990). allows us to describe, research and analyse given spaces in the light of its users, legal regulations, cultural habits and customary uses as well as physical features and bases for use (Bollier, 2016). Proposed approach operationalizes public and professional debates, led in the search of new adaptive solutions for changing social and climate circumstances.

Study Method

The literature review, scientific discussion survey and participation was backed with the studies on chosen cases of the interventions in urban space in European geographical context, with the special emphasis on central Europe (with its post-socialist organisational and spatial background).

Results

The value-oriented approach to studying cities through the lens on Common Good (Koszevska, 2024). emphasizing the role of the wider society might be adapted to post-growth, anti-systemics as well as institutional, traditional or conservatory politico-economical or philosophical orientations. Its adaptability and flexibility proves the rich and culturally rooted value, despite changing societal convictions and circumstances.

Discussion

The theoretical interdisciplinary research on urban spaces is a complex study material, requiring in-depth physical data collection and cultural knowledge. Though all results might remain controversial, which is an added value to the research work (aiming for social utility), i.e. awakening its audience to self-reflection, asking questions about possible future models of adaptive urban development. The remaining of it might contribute to the upholding of spatial and social justice in an age of cultural, economic, war migration and climate crisis.

Keywords:

spatial justice; common good; public spaces; cultural institutions; built heritage

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T_14 ETHICS, VALUES AND PLANNING / 1689**Psyche, telos and persona: discerning the voice of the planning discipline in an interdisciplinary age.****Author:** Brendan O'Sullivan¹¹ *University College Cork***Corresponding Author:** brendan.osullivan@ucc.ie

This paper presents an initial set of thoughts around the idea that professional disciplines –in the ways that they interact with each other (and how they act in the world generally) –can demonstrate many of the characteristics of a ‘personality’. Because planning almost invariably finds itself embedded in interdisciplinary, cross disciplinary and trans-disciplinary environments (Davoudi, 2010) –with various degrees of success or effectiveness –an enquiry such as this may prove useful in framing how our discipline shows up and behaves in these arenas which by their nature are often contested, complex and ethically challenging (Campbell, 2006).

If we start with the idea that the persona of a discipline or profession –the way it presents itself to the world – can be explored in more depth (as a psychoanalyst might interact with a client) it may be possible to infer many of its other dimensions, analogous perhaps to ego stances, shadow influences and even its essential core (or ‘self’). By deliberately using Jungian concepts such as these (Jung & Jaffé, 1989), but without attempting a precise correlation with depth psychology, this allows us –for planning at least –to draw out some developmental principles about this relatively new profession including its foundational knowledge base, its ethical stance, its canonical core, its maturity as a discipline and ultimately how it speaks with its own essential, individuated voice.

Whilst many popular personality typologies (such as Myers-Briggs or the Enneagram) can assist managers, therapists and individuals to get a feel for how typical interactions and responses play out in real world behaviours, it is not inconceivable that some professions can be seen as more generally agreeable and empathetic than others (or for that matter more logic-driven, charismatic or inspiringly creative). Whilst it is interesting that Lewis Mumford showed early interest in this topic (Novak, 1995 pp. 184-185), an over-simplification needs to be avoided here especially if a useful lens is to be found for asserting disciplinary identity in these settings. For this reason the initial focus might usefully turn to the planning voice.

Given that the planning voice – loosely defined here as the voice of those who are steeped in the principles and ethos of town and country planning –has some role to play in key day to day decision-making processes about sustainable development, there is merit in trying to bring clarity to its role and purpose. How do members of the planning discipline articulate what it means and how do they advise decision-makers about it? When doing this, do they speak with a distinctive and authoritative voice? And are they listened to? What strategies do they use when they feel that their voice is not being heard? Are there times when this voice gets drowned out, sidelined or ignored? Does planning suppress its instincts or project its intrinsic reactions elsewhere in the face of power dynamics in the arena? On occasion, do archetypal figures (such as the scapegoat) emerge in these arenas?

We might also ask where planners draw their authority from? What is their nature of their formation as professionals? What is the epistemological and ethical basis for how they act? Are planners even aware of these influences in mundane, tricky settings? Given that the roots of modern planning can be found in such a range of different traditions (in the same way that an individual's psyche is subject to parental influences), is it fully formed yet as mature discipline?

Based on these lines of inquiry, the paper considers possible ways in which the disciplinary personality of planning might be framed, constellated and explained.

Keywords:

the planning voice; disciplinary identity; day to day planning practice

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T_14 ETHICS, VALUES AND PLANNING / 199

Understanding Diverse Needs of Urban Dwellers to Improve People-Place Bonds for Inclusive Urban Planning

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Emotional bonds between people and their neighborhoods are important for urban planning because they influence how individuals engage with and contribute to their communities. These bonds create a sense of belonging, attachment, and identity that can enhance the quality of life and foster stronger, more resilient neighborhoods. These bonds have been extensively studied, primarily under the concept of place attachment (Lewicka, 2011). Place attachment has been shown to offer numerous positive benefits, such as improved well-being, social behavior, and environmental engagement (Kamani Fard & Paydar, 2024). The broad body of literature has identified several key components influencing place attachment, such as homeownership, age, and length of residence (Lewicka, 2010).

Our study expands this understanding by measuring people-place bonds not only through place attachment, but also through place making, emphasizing the agency of residents in shaping their neighborhoods (Switalski et al., 2023). We used data from a large-scale online survey completed by 5356 respondents across five European cities: Brussels, Geneva, Hamburg, Turin, and Zurich, and conducted exploratory factor analysis and k-means clustering. This analysis revealed three distinct groups of residents characterized by varying sociodemographic profiles and behavioral patterns related to people-place bonds. Our findings challenge the traditional emphasis on homeownership as a predictor of place attachment (Pasanen et al., 2024). Instead, we discovered that other, less commonly discussed variables significantly influence people-place bonds. Moreover, the distribution of these groups varied considerably across the five cities, reflecting local contextual differences. We discuss these variations and their implications for urban planning, highlighting the importance for inclusive approaches that account for the diverse needs of urban dwellers to foster stronger people-place bonds.

Keywords:

urban livability; neighborhood satisfaction; well-being; quality of life; comparative study

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T_14 ETHICS, VALUES AND PLANNING / 201

A capability theory of spatial justice

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Many planning theorists agree that justice is one, if not the primary, goal of planning. In planning practice and policymaking, phrases such as “inclusive planning” or “equitable design” also indicate the key role of justice considerations in the planning profession. A normative position towards justice issues is present in every planning task, albeit this stance often remains implicit. Planning theory refers to *spatial justice* as a notion to capture the spatial component of these justice issues. Arguing for an explicit normative position, my aim is to further the discussion on the philosophical basis of spatial justice, and to develop methods to operationalise such a position. To this end, I make use of the differentiation between the *concept* and *conceptions* of justice elaborated by Moroni and De Franco (2024), the concept denoting a general, universal idea of justice and the conceptions denoting various normative positions towards justice issues.

The purpose of this research is to concretise the concept and develop a workable conception of justice to apply to spatial issues. To characterise the concept and define “true” instances of injustice, I build upon Miller’s (2023) four aspects of justice: i) justice as concerning the treatment of individuals, ii) justice as claims rightfully made, iii) justice as impartial, and iv) injustice as caused by human agency. Secondly, I argue for a specific conception of spatial justice that builds on the capability approach and ideas from sufficientarianism and limitarianism. I argue that this conception is not only morally justified, but also practically useful for the planning profession, as it can be operationalised to answer some questions regarding significant spatial issues: for example, regarding the role of space as a condition for granting positive rights (Moroni and De Franco, 2024). To illustrate, I take traffic planning as an example. The planning paradigm of accessibility, which is common in transport studies, denotes the capability to reach destinations and activities. Therefore, accessibility in transport serves as an indicator for injustices regarding the capability to make use of one’s positive rights.

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Keywords:

spatial justice; capability approach; justice conceptions; normativity in planning

T_14 ETHICS, VALUES AND PLANNING / 1194

Participatory Planning in Brazil: a moralized approach to Socio-spatial Justice

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Participatory planning in Brazil is frequently celebrated as a cornerstone of urban governance designed to foster sociospatial justice. However, its implementation exposes significant ethical and operational challenges. This paper examines how contemporary master plans, developed in the nation's major metropolises, are influenced by moralized narratives that oversimplify the complexities of urban governance. Emerging during the country's democratic transition in the late 1980s, the participatory planning paradigm was a direct response to the technocratic dominance of the previous dictatorial regime. This shift institutionalized the belief that public interest could only be genuinely articulated through inclusive, participatory processes. Substantial governmental funding to municipalities supported this vision, positioning master plans as fundamental instruments for addressing historical inequities and advancing urban equity.

Despite its democratic intentions, participatory planning in Brazil often reduces conflicts between grassroots movements advocating for equity and real estate developers pursuing market-driven interests to a binary framing of good versus evil. This reductionist perspective, reinforced by public officials, segments of academia, and media narratives, oversimplifies the multifaceted nature of urban governance. Consequently, confidence in planning's ability to mediate divergent interests and achieve equitable outcomes has diminished, contributing to broader skepticism about its efficacy.

Within this context, this paper critically analyzes the formulation processes of master plans in Brazil's metropolises, with a focus on the ethical assumptions underpinning these efforts and their broader implications. By situating Brazil's experience within wider debates on ethics and justice in planning, the study examines the limitations of participatory frameworks in addressing sociospatial inequalities and explores their potential contributions to more equitable urban futures.

Keywords:

Participatory Planning; Socio-spatial Justice; Ethics in planning; Brazil

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Distributive justice in energy policy: Five theoretical perspectives on distributive justice applied to the case of the planning of renewable energy projects

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The call for justice is omnipresent in the planning of the energy transition, both in academia and policy practice. Over the past decades, research on justice has flourished, resulting in various frameworks and conceptualizations of justice (Basta, 2016; Fainstein, 2010; Stein and Harper, 2005; Weghorst, Buitelaar, and Pelzer, 2024). Despite the growing academic attention to justice and its aim to inform just decision-making in policy practice, key questions remain underexplored. These include how different conceptions of justice can be operationalised, how contradictory conceptions of justice can be addressed, and how justice theory can provide normative guidance for decision-making.

This paper aims to advance the operationalization of distributive justice to offer normative guidance for academics and policymakers in planning a just energy transition. It introduces five theories of distributive justice rooted in political philosophy: utilitarianism, libertarianism, egalitarianism, sufficientarianism, and communitarianism. These theories articulate reasons why a particular situation may be considered just or unjust and what a just distribution requires from a moral point of view (Kymlicka, 2001).

Those five theories of justice are used to reflect on the planning process for wind and solar energy projects in the Dutch Regional Energy Strategies. This approach facilitates an examination of the normative assumptions and decisions embedded in renewable energy planning and identifies the justice trade-offs inherent in the planning process. Special attention is paid to how spatial considerations shape justice arguments (Moroni and De Franco, 2024). By analyzing policy options, justice trade-offs, and the implications of certain decisions through the lens of distributive justice theories and spatial considerations, normative guidance in the planning process can be provided.

While there will always be multiple answers to the question of what constitutes a just distribution, addressing this moral issue is important because alternative distributions are always possible. Reflecting on these alternatives is therefore crucial for the deliberate and just planning of the energy transition, rather than accepting the status quo and risking to exacerbate injustices.

Keywords:

justice in planning, distributive justice, energy transition, spatial justice

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T_14 ETHICS, VALUES AND PLANNING / 1030

Decisions about decisions: process literacy as a tool to increase

understanding of value conflicts in coastal decisions

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The spatial decisions made by regulators and policy makers have been formulated through evolving practices and incorporate a range of values from multiple sources. This applies to both terrestrial planning and marine planning but is particularly complex at the coast where regulatory and policy regimes overlap. The way in which diverse values are considered within these regulatory and policy regimes differs between process and between administration, with decisions made at the coast the locus for value conflicts which can put marine and terrestrial interests and values at odds with each other.

This research analyses coastal decision-making processes within the English spatial planning and marine licensing regimes. Using the development of a new sea defence in Southsea, Portsmouth as a case study, we explore how current stakeholder engagement and decision-making processes and practices incorporate the diverse values for multiple stakeholder groups which cross the terrestrial/marine boundary. Within the complex governance framework which seeks to sustainably manage coastal areas, the need for decision-makers to contemplate their own values related to the legitimacy of stakeholder value claims and related to good decision-making processes themselves is explored. Applying a spatial justice lens to management of coastal areas provides a conceptual framing through which value statements can be seen as fundamental for defining the spaces for which decisions are being made. The research concludes that increasing process literacy within both stakeholders (including the public) and decision-makers is crucial for maintaining spatial justice for coastal management.

Through illustratively mapping the Southsea Coastal Defence Scheme, this research increases process literacy through explaining how the dual terrestrial/marine decision-making process operates in England, along with Environmental Impact Assessment requirements. It further asserts the importance of reflexive practice for decision-makers, policy-practitioners and researcher. By asking the question "what values am I bringing to decision-making processes?" practitioners and theorists can better understand what value statements they are (unconsciously) privileging and where the barriers to diverse values still exist.

Keywords:

Diverse values; coastal planning; process literacy; decision-making; stakeholders

T_14 ETHICS, VALUES AND PLANNING / 1151

New Intelligent Technologies and Questions of Privacy and Surveillance for the Homeless

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As initiatives in recent years have emerged in both the public and private sector experimenting with new and increasingly intelligent technologies in the city, privacy has become an important topic of scholarly discussion. However, relatively few authors have

focused exclusively on the particular toll these, especially AI-driven, technologies may take on the privacy of the homeless. Not only are the unhoused vulnerable by virtue of being impoverished, but when technologies are employed in public spaces, it may be impossible for them to escape their reach. Moreover, intelligent technologies are also now being implemented by homeless servicers, pitting a homeless person's desire for privacy against their desire for help. This article attempts to move scholarly discussion about homelessness forward by analyzing how new and increasingly intelligent technologies alter the privacy landscape for the unhoused. It employs Helen Nissenbaum's influential framework for privacy as "contextual integrity" to investigate changes to the privacy of the homeless in three relevant contexts. Nissenbaum's theory asserts that, for every social context, certain information-sharing norms exist and privacy is violated when those norms are transgressed. Here, her framework is used to expose the way that new technologies alter the parameters of information-sharing norms in three contexts relevant to the unhoused—in public and collective spaces, when using personal technologies, and in spaces targeting the homeless. The main findings across contexts include changes to the privacy of the homeless resulting from the replacement of human actors with machines, the heightened power of machine-led inferences in their lives, increased access to their intimate and identifying information, and greater potential for data linkage. Next, the implications of such changes are discussed. Certain dangers are identified—a heightened risk of punishment and decreases in agency—while opportunities are also found—greater protection and increases in agency. Key debates about the merit of machines over humans, proportionality, and the role of consent and agency are explored in connection to the unique situation of the homeless. Finally, suggestions are made for possible ways to enhance the agency of the homeless with regard to their data collected by new and intelligent technologies.

Keywords:

homelessness; privacy; technologies; AI

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T_14 ETHICS, VALUES AND PLANNING / 1449

Breaking through data monopolies: AI, open data, and transparency for just urban planning

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In an era of global challenges and crises, multi-spatial and multi-temporal data have become essential for the effective monitoring of urban change and the evaluation of policy success across administrative boundaries. However, data monopolies—wherein commercial entities and selected institutions exercise exclusive control over access to critical geospatial datasets—impede transparency, public scrutiny, and equitable decision-making processes. Furthermore, while artificial intelligence (AI) has enhanced data analysis capabilities, it has also made it more opaque. Employing non-transparent and selective AI models, trained on proprietary and non-open datasets, risks introducing hidden biases into urban decision-making processes. This risk is especially acute in developing regions.

To counter this, European open data policies, such as the Open Data Directive (2019/1024) and the European Data Strategy, present a significant opportunity. By mandating the free availability of high-quality datasets (including Earth observation and geospatial data), these policies pave the way for transparent, peer-reviewed spatial research. Key institutions such as the European Space Agency (ESA), the Copernicus Programme, the European Data Portal and the Joint Research Centre (JRC) are at the forefront of this initiative, ensuring that urban analysis remains open, replicable, and publicly accountable.

In this context, this paper explores how AI-driven remote sensing technologies, open data policies, and peer-reviewed urban analytics can break through these monopolies and offer a more just and accountable approach to urban planning, i.e. an approach that prioritises equitable access to resources, transparency in decision-making, and inclusivity in urban governance. Crucially, this work challenges historical representations of urban form, often subjective, politically motivated, and shaped by selective narratives. In contrast to maps, master plans, and administrative definitions of cities, which are heavily influenced by power dynamics, AI-driven empirical geospatial data offers a more neutral, evidence-based approach to urban research. By treating geospatial data as a public good and ensuring rigorous peer review, this paper advocates for collaborative, transnational governance of urban analytics—embedding equity, accountability, and transparency as core principles of 21st-century urban planning.

Keywords:

Open data; urban analytics; transparency; data monopolies; peer-review

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Planning for gender health justice: A scoping review and research agenda

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Urban planning plays a crucial role in advancing social justice, public health, and gender equity in parallel. Increasingly, scholars are investigating the field's potential to simultaneously enhance outcomes across all three areas through planning for gender health justice. This scoping review assesses the extent to which planners are incorporating gender in healthy cities scholarship, including current work already being done in this area and gaps where further research is needed. Our analysis suggests that planners are making progress on violence against women in public spaces and planning deficits related to women's unpaid care labor. However, our review also indicates that further research is needed to address more diverse forms of gender violence, expand the scope of gendered health issues being investigated, and incorporate a more holistic understanding of gender identity. Based on these findings, we outline an integrated research agenda designed to support planning scholars in advancing gender health justice.

Keywords:

gender; health; healthy cities; social justice; literature review

T_14 ETHICS, VALUES AND PLANNING / 528**Geographies of commitment and voluntariness: Socio-spatial and normative structures of religion-based intentional communities****Author:** Büşra İnce^{None}**Corresponding Author:** busra.ince@polimi.it

This study explores analytically and critically perspective religion-based intentional communities in contemporary contexts as geographies of voluntary segregation and commitment. These religious communal settings intentionally formed by individuals seeking to freely and collectively practice their religion. They purposefully create self-segregated closed entities where religious practices and identities can be preserved. Such communities often formed based on the specialized rules of a particular religion, sect, congregation, or religious movement frequently adopting a stance that challenges mainstream societal norms (i.e., secularization, modernization). They offer a distinctive model of rule-based entities where the religious principles governing communal living practices have often defined by sacred prescript.

Through empirical evidence from diverse religious traditions, this research aims to first understand the dynamics of the normative and organizational structures shaped by the prescribed and pre-consensused religious principles, and then analyze their reflections in spatial configurations and land-use characteristics. The research investigates how fundamentalist religious motivations shape the socio-spatial characteristics of these communities through an analysis of empirical data derived from religion-based intentional communities (i.e., Bruderhof communities, religious kibbutzs, sufi settlements) across diverse geographical contexts and teachings. Specifically, it examines the interplay between the normative and organizational frameworks of religion-based intentional communities and the dynamics of spatial organization. Furthermore, the study comparatively analyzes how diverse religious teachings influence spatial production and explores the similarities and differences among these communities. By adopting an interdisciplinary and multiscale perspective, this study suggests that normative and spatial characteristics are two central forces shaping the dynamics of religious communal living. It aims to expand the limited body of knowledge on contemporary religion-based intentional communities and to integrate this subject into the urban planning agenda.

Keywords:

Religion-based intentional communities, fundamentalist religious movements, normative frameworks, spatial organization

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T_14 ETHICS, VALUES AND PLANNING / 234

Revisiting subsidiarity: Not only administrative decentralization but also multidimensional polycentrism

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The discussion on “territorial governance” has gained traction in the last decade, and it has been relaunched recently as a consequence of the problems created for institutions by the Covid-19 pandemic. The issue of territorial governance is particularly important because it invites us to revisit certain traditional ideas concerning institutions, their tasks, and the scale and level of intervention. In this regard, a central and crucial concept is that of “subsidiarity”. The concept of “subsidiarity” is widely used both in the academic literature (including urban and regional studies) and in the public debate, as well as in directives and laws. This paper critically revisits the ideal of subsidiarity, with reference to both vertical subsidiarity and horizontal subsidiarity. As will be demonstrated, the ideal of subsidiarity can prove decisive for new forms of territorial governance. However, this will only happen if subsidiarity is understood in a truly innovative sense; that is, placing the emphasis (i) (not solely on vertical subsidiarity but, also) on horizontal subsidiarity, and not interpreting the latter (ii) only from a perspective of solidarity, or (iii) only as a services issue, or (iv) only as a form of action agreed and coordinated with public authorities. The point is that, while promoting vertical subsidiarity merely requires “administrative decentralization” (namely, the transfer of certain decision-making powers from the higher institutional levels to the lower ones: for instance, from the national level to the regional and municipal ones), promoting horizontal subsidiarity requires a more radical revision of current national, regional and urban realities in a direction characterised by what can be called “multidimensional polycentrism”.

Keywords:

Subsidiarity; Decentralisation; Polycentrism

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T_14 ETHICS, VALUES AND PLANNING / 1404

Exploring the practices and perspectives of planning officers assessing applications for small-scale densification in suburban

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For many decades, the rate of housing construction in England has consistently failed to meet the growing demand. Despite longstanding policies favouring a 'brownfield first' approach, significant densification in suburban areas remains elusive. Densifying suburbs presents a multifaceted challenge, requiring a balance between increasing housing supply and preserving the local character, infrastructure capacity, and residents' preferences. Drawing from semi-structured interviews with planning officers working in development management in local authorities in the North West and South East England, this paper examines their practices and perspectives in determining planning applications for small-scale incremental densification in suburban areas, including infill construction on vacant or oversized plots, subdivision of existing dwellings, and conversion of properties to residential use. By conceptualizing planning officers working in development management as both street-level bureaucrats (Lipsky, 2010), or frontline agents of the state with considerable discretionary power, and as situated agents (Bevir, 2013), influenced by unique contexts, experiences, and social positions, this paper explores their values and how they use of discretion to make sense of policies before putting them into practice and to mediate different interests in a context shaped by ambitious government targets to boost housing supply.

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Lipsky, Michael., 2010. *Street-Level Bureaucracy: Dilemmas of the Individual in Public Services*, 30th anniversary expanded edition. Russell Sage Foundation, New York.

Keywords:

Suburban densification; development control; discretion; street-level bureaucrats

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Lipsky, Michael., 2010. *Street-Level Bureaucracy: Dilemmas of the Individual in Public Services*, 30th anniversary expanded edition. Russell Sage Foundation, New York.

T_14 ETHICS, VALUES AND PLANNING / 378**Urban Beauty and the Open City****Author:** Stefano Cozzolino¹¹ *ILS - Research Institute for Regional and Urban Development***Corresponding Author:** stefano.cozzolino@ils-research.de

The topic of urban beauty is often addressed superficially; certainly, it is under-discussed. Today, a long architectural and compositional tradition still heavily influences the perspectives and value judgments of experts, leading to the tendency to believe that the

experience of beauty is confined to the physical, visual, and compositional characteristics of the built environment. Differently, and based on recent cognitive studies, urban beauty can only be understood as a complex 'total experience' that includes both tangible and material elements, as well as emerging social and cultural stimuli that, by definition, transcend intentional urban design operation and the built environment. On the one hand, this implies the inevitability of revisiting the mainstream contemporary concept of urban beauty, broadening its scope. On the other hand, it is necessary to reflect more consciously on the production and generative process of attractive and human-centred urban environments. From this perspective, with appropriate innovations, a concept that can be particularly useful is that of living structure introduced by Christopher Alexander. Building on this experience, this talk will highlight the reasons why the idea of the Open City is central both to understanding the genesis of beautiful urban environments as well as the adoption of more conscious design and regulatory approaches.

Keywords:

Beauty; Open City; Living structure; Emergent Urbanism; Action

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Track 15 | PROPERTY MARKET ACTORS

T_15 PROPERTY MARKET ACTORS / 937

Social Network Actors in Farmland Market: Comparative Case Study between Japan and Scotland

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This study explores the interactions between land policy and the social network of farmland markets and inform the design of future land policies in Scotland and Japan where dynamic land pattern changes can be observed (Hashiguchi, 2014; Combe et al., 2020). Specifically, it aims to understand how social networks and government institutions work in the market, based on the theoretical framework drawn from New Economic Sociology (NES) (Granovetter, 2017) and New Institutional Economics (NIE) (Williamson, 2013). For this, Qualitative Social Network Analysis (Hollstein, 2011; Scott, 2017) is conducted as following steps in one local community selected in each country, in order to examine the function of trust which represents the NES position and the government support which reflects the NIE position as the market channels. Moreover, the contribution of brokers among actors (Burt, 2005) as well as their impacts on Transaction Costs (TCs) (Ciaian et al., 2012) are described.

Step1) Mapping the entire social network of a farmland market through structured interviews (e.g. Who are the landowners/tenants?, Where do the landowners/tenants live?, Are there intermediary agents?)

Step2) Tracing the connections between actors using Multiple Choice Questions (e.g. Relationship: Relative, Neighbour, Friend or acquaintance, Business associate, Land advertised., How to make contact: In person, Local events, Government support., Reason why transact the land: Price or rent, Obligation, Trust, Reputation, Government support.)

Step3) Understanding the role of brokers and their contribution to TCs, with in-depth interviews (e.g. What are the advantages you offer compared to direct transactions? etc.)

The main results are as follows: 1) Despite of a large difference in the numbers of actors involved due to the different size of the land parcels, with approximately 10 actors in the Scottish case and more than 40 actors in the Japanese case, there are similarities in the nature of farmland markets where land is transacted mainly among relatives, neighbours and friends in and around the local community through direct personal contacts. Also, "Trust" is chosen as one of the main reasons underlying the transactions in both countries, although it is selected more often in Japan than in Scotland, where "Price" is also important.

2) Regarding brokers, there are similarities in the function of public institutions but also notable differences in the types of private broker operating in each country. In spite of the considerable differences that large private agents work in Scotland whereas individual landowners function as private brokers in Japan, both work in tightly knit communities and build close relationships with farmers and landowners to obtain information about the land.

3) When it comes to the impacts on TCs, farmers and landowners find that direct transactions can reduce implementation costs in both countries, whereas transactions intermediated by private brokers can reduce search costs especially in Scotland. In addition, transactions intermediated by governmental institutions could reduce negotiation costs by functioning as an independent intermediary between parties.

To conclude, it is clear that farmland markets are embedded in the social networks that exist within and around a local community and trust among network helps to ensure that the personal connections between actors in local markets become the channels for many land transactions in both countries. Especially, trusted brokers play a key role in the market to reduce the TCs. Policy makers need to understand the importance of human relationships in farmland markets and engage with stakeholders. Government involvement in, and interaction with, existing social networks in farmland markets could make an important contribution to deliver the land policy goals.

Keywords:

Social Network; Farmland Market; Trust; Transaction Costs

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T_15 PROPERTY MARKET ACTORS / 1087

The financialization of actors, practices and instruments. Insights from Milano's Urban Market

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Over the past two decades, the concept of 'financialization' has gained prominence in urban studies, reflecting the growing influence of financial actors, practices, and instruments in shaping urban markets.

This phenomenon, as explored by scholars such as Epstein (2005), Leyshon and Thrift (2007), Krippner (2011), Gotham (2012), Christophers (2015), Raco et al. (2019), and Aalbers (2019), underscores the pivotal role of real estate investments and financial strategies for the management of built environment and urban development. Despite extensive global research, the financialization of urban markets in Milano requires deeper investigation, given the mounting pressures exerted by real estate dynamics on the city's spatial planning frameworks.

Building on solid research (Pasqui, 2019; Anselmi & Vicari, 2020; Conte & Anselmi, 2022) and empirical analysis, this study aims to unveil the multifaceted financialization processes influencing Milano's urban market by addressing the patterns and impacts of property investments in urban development and real estate management; the regulatory, programming, and planning instruments that enable real estate finance; and (the roles and strategies of the key actors operating in Milano's urban market.

By focusing on Milano, a city emblematic of contemporary urban transformation in Southern Europe, this research seeks to uncover the intricate connections between predatory financial mechanisms and urban development related to capital accumulation liberated by Milanese households and enterprises. It will explore how especially global and continental financial actors, motives and instruments shape spatial configurations, intensify real estate pressures, and influence urban policy and governance.

The findings are intended to contribute to broader discussions on the implications of financialization for urban sustainability, equity, and resilience, while offering practical insights into navigating these challenges in Milano and similar urban contexts worldwide.

Also, this contribution tackles the specificity of Milano in being a gateway city (Bolocan Goldstein, 2017) despite its medium-size dimension and its political status as a non-capital city. In this sense, its geopolitical configuration in the middle between Continental and Mediterranean Europe makes this city an important catalyst for institutional financial investment, which enormously renovated the city in comparison to the rest of the country.

In conclusion, this research project adopts an interdisciplinary approach, drawing from urban planning, geo-economics, and real estate studies, to provide a comprehensive framework for understanding the financialization complex in Milano. The insights gained aim to inform both scholarly debates and policymaking, emphasizing the need for strategies that balance financial imperatives with inclusive urban development.

Keywords:

financialization, urban market, Milano

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Undermining Planning in the Name of Housing: Portugal's Shift to Real Estate-Driven Rural Sprawl

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In December 2024, the Portuguese government approved Decree-Law 117/2024, allowing private housing developments on rural land with minimal restrictions and bureaucratic requirements, terminating the need for detailed plans or updates to existing municipal land use plans. The government asserts that this measure seeks to grant developers access to inexpensive land to reduce housing costs.

This legislative act is part of the 'Building Portugal' strategy, introduced to address the ongoing housing crisis. This is not new: in the 80's, Portugal built up a "dual housing system" (Arbaci, 2007) fostering private housing promotion bolstered through state budget subsidized credit and thus leveraging economic development on the construction and banking sector. Portugal has now the 3rd highest ratio of houses per family in OECD (OECD, 2024). Following the subprime crisis, planning policies changed from sprawl and lack of planning to introducing new requirements towards compact city paradigms. The policy that the government is now introducing seems a return to past dynamics, marking a significant distance from the housing and spatial planning policies that were being developed for a decade, sparking heated public debate.

This paper examines the ongoing policy shift, its public discourse, and the influence of narratives promoted by the real estate sector. We argue that, while the new legislation ostensibly addresses the housing crisis, its primary objective is to bolster the real estate sector as in the past. Faced with evolving market dynamics, the sector is now seeking to redirect investment toward new territories through a "spatial fix" (Harvey, 1982) on rural lands. The new policy framework seems designed to facilitate this goal.

The paper is structured in two main sections:

1. Two Contrasting Urbanization Cycles

The first section outlines preceding urbanization cycles and their underlying public policies.

The first cycle (1976–2008) featured rapid urban expansion driven by permissive planning, private development, homeownership incentives, and subsidized credit. This period profoundly shaped the territory but faced criticism for its unsustainability.

The Global Financial Crisis ended this dynamic, inducing legal reforms that shifted from expansion to urban renewal, from homeownership to rental markets, and from expansion to urban perimeters restriction.

This second cycle, prioritized urban renewal, particularly in central urban areas, targeting high-end markets and tourism. This approach attracted foreign investment and increased property values, contributing to accelerating gentrification and deepening the housing crisis. Post-2017 housing policies attempted to mitigate these challenges, promoting affordability while retained support for urban renewal, rental and compact city paradigms.

2. The Shift: Returning to Expansion

This section examines the recent policy shift, drawing on legislative analysis, GIS-based mapping of property market dynamics, public discourse and contestation analysis.

It argues that the new government policy aims at promoting a new urbanization cycle, returning to expansion and densification of low-density areas. Such policy reflects pres-

sure from the real estate sector, which frames the housing crisis as a supply issue solvable through tax incentives, expedited licensing, and access to inexpensive land.

This narrative –and its massive presence in the media –is recent, and results from changes in property market dynamics: as property values in urban centers approach saturation and rising construction costs limit gains, developers are incentivized to target new territories with higher profit margins.

This paper concludes by positioning the Portuguese case within broader international debates on housing crises and planning paradigms. It reflects on the implications of prioritizing real estate sector interests, questions the sustainability of reverting to expansion as a solution to housing challenges, discusses the potential increase of impermeable area and threats to agricultural uses and ecological structures and highlights the risks of undermining spatial planning legitimacy through land use liberalization via exception mechanisms.

Keywords:

Urban Expansion; Planning Cycles; Housing Crisis; Public Policy; Real Estate

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T_15 PROPERTY MARKET ACTORS / 1173

An Analysis on the Factors Affecting the Institutional Resilience of Housing Developers

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Resilience theory focuses on the ability of systems and organisations to resist crisis situations, absorb the effects of crisis and adapt to new conditions. This theory offers an important perspective, especially in understanding the dynamics of complex systems. In this study, Resilience theory is analysed in the context of the housing sector. Studies on the factors affecting the corporate resilience of housing developer firms are limited in the literature and in-depth analyses on the determinants of resilience are needed.

This paper aims to provide a comprehensive analysis of various parameters affecting the resilience capacity of housing developer firms. In this way, it identifies the factors that shape the resilience capabilities of firms against the institutional, economic, social and environmental crises they face and reveals the network of relationships between these factors. In this context, this study aims to contribute to the existing gaps in the literature by providing both a theoretical and practical framework.

Within the scope of the research, the data obtained from a survey conducted with 110 housing developer companies operating in Istanbul were analysed. The survey was designed to gather information on how economic, ecological, political, institutional and social factors affect the resilience capacities of firms. The scope of the questionnaire included a total of 30 parameters to measure the perceptions of the respondents, which were evaluated using a five-point Likert scale. The data was collected between October 2024 and December 2024 using a hybrid model involving both online and face-to-face interviews. In this way, the views of the participants were systematically quantitatively evaluated and flexibility was provided in the data collection process.

In the analysis part of the study, Factor Analysis was used to examine the data obtained in depth. This method reveals the implicit relationships and dimensions between resilience parameters thanks to its ability to reduce high-dimensional data sets to a meaningful and small number of factors. Exploratory Factor Analysis (EFA) method was applied in the study; in this process, no hypothesis was determined in advance, and factor structures were discovered in line with the results of the analysis. Factor analysis was used as a tool to understand the basic components by simplifying the complex relationships between resilience parameters.

The findings have identified the main factor groups affecting the resilience of housing developer firms. Important clues have been provided for integrating these factor groups into sectoral practices. The research results provide information that will help managers and decision makers to develop more strategic and flexible management approaches. In addition, it is aimed to contribute to the establishment of a more robust institutional structure in the sector by providing concrete suggestions for companies that want to increase their resilience capacity.

In conclusion, this study brings a new perspective to the theoretical debates in the literature and demonstrates the applicability of resilience theory in the housing sector. By providing a comprehensive analysis of resilience factors, the research contributes to the development of a more prepared and adaptive structure of sectoral actors against crises. In this context, it has the potential to be a valuable reference source for both academic literature and sectoral practices.

Keywords:

Housing; Resilience; Crisis; Resilience capabilities of housing developer firms

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T_15 PROPERTY MARKET ACTORS / 647

Characterizing the Black developer industry in Detroit: Challenges compared to other developers

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Pockets of residential and commercial development have sprouted in Detroit since the bankruptcy of 2013. Some of these are visible and sizeable developments and they have been completed by established, large well-capitalized, White developers. However, there has always been and still is a smaller constituent of Black developers. Not much is known about these Black developers.

The paper aims to establish a primarily qualitative, understanding of African American developers in Detroit. While we expect to learn enough from this exploratory work to support tentative policy suggestions, the primary objective of this paper is to understand the factors that hinder the ability of African American developers to succeed and how they approach development differently from White developers.

Our approach to obtaining data is interviews with developers. A reporter from Crains Detroit helped in making initial connections with developers. We also reached out to industry groups and a recommendation from a community group that has been engaging with developers. From these contacts, we used snowball referrals to speak to other developers. We interviewed 14 developers, nine Black and five White. We stopped our interviews when further interviews yielded no new information relevant to our research. After completing our analysis of the interviews, we interviewed an additional Black and White developer to confirm that our findings from the initial 14 interviews remained the same.

We present three major findings:

1. Black developers gain expertise from public service or private sector experience, whereas White developers enter through legacy connections to entrepreneurship, or direct connections to legacy real estate developers, or happenstance indirect real estate connections.

None of the Black developers we spoke with came with family connections to real estate, wealth, or upper middle-class parentage. In every instance, the nine Black developers we spoke with took a circuitous route to the business, building experience working for local elected officials, as public servants, as employees of other developers, in the banking sector, or some combination of these experiences, and leveraged these experiences to launch their businesses. On the other hand, White developers entered the industry through a traditional route of social capital. Four of the white developers came from upper-class backgrounds of either business or professional lineage. One entered the business through happenstance interaction with wealthy investors.

1. Bias in financing and incentives remains a challenge for Black developers.

Based on previous research about Black entrepreneurship, we expected that Black developers would face more constraints with respect to obtaining financing. Our research bore this out. Eight of the nine expressed frustration obtaining financing from banks, and never being sure whether it was because of the color of their skin. On the other hand, the White developers had access to financing whether through banks or investors.

1. All developers seek profits, but Black developers are more likely to link their work to community.

All developers we spoke to seek profits, but for all the Black developers this was accompanied by an interest in the betterment of communities in Detroit. This interest in communities was not shared by White developers. A representative quote from a Black developer is: "Many of us are Detroiters ...we are active in our neighborhoods". While White developers spoke about the potential to have a positive impact on the city or a neighborhood, their responses also focused on individual accomplishments of themselves.

In summary, our findings are part of a larger academic literature about the challenges that Black entrepreneurs face. Our findings point to the need to provide a more level playing field for Black developers in Detroit.

Keywords:

Developers; Blacks; Detroit; Real Estate

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T_15 PROPERTY MARKET ACTORS / 1233

The Effectiveness of Public-Private Sector Collaboration in Regenerating Historic Industrial Brownfield Sites under Different Market Conditions

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The regeneration of historic industrial brownfield sites represents a critical challenge in urban planning, intersecting issues of market dynamics, heritage conservation, and public-private collaboration. This paper focuses on the role of market buoyancy in shaping public-private sector interactions during regeneration processes, emphasizing its potential influence on decision-making, negotiation dynamics, and project outcomes. This study seeks to explore how public-private collaboration responds to varying market conditions, aiming to enhance the understanding of how planning mechanisms can adapt to financialisation and market volatility.

This research forms part of my ongoing PhD thesis at the University of Liverpool, currently in its second year, with the aim of collecting all necessary data by July 2025. The research addresses the question: How does the influence of the public sector on the regeneration of historic industrial brownfield sites led by the private sector vary with the buoyancy of real estate markets, considering the decision-making behaviour of both the private and public sectors? The hypothesis suggests that in less buoyant real estate markets, private developers may exhibit increased confidence in negotiations, leveraging their positions to secure favourable outcomes. This dynamic will be explored through the lens of adaptive planning, regulatory frameworks, and heritage conservation.

The paper integrates findings from case studies in London (high market buoyancy) and Liverpool (low market buoyancy) to provide a comparative analysis of collaboration dynamics. Methodologically, it employs qualitative interviews with stakeholders—developers, city planners, and local officials—as well as quantitative analysis of market data and policy documents. This approach will allow for an in-depth exploration of how market conditions mediate public-private interactions.

Key areas of analysis include:

1. **Market Buoyancy and Developer Confidence:** The paper examines how market buoyancy could shape the confidence of private developers in negotiations, potentially influencing their strategies in securing planning permissions, navigating heritage restrictions, and accessing financial incentives. The study focuses on how these dynamics manifest differently in high- and low-buoyancy contexts.

2. **Market Buoyancy and Planning Challenges:** The study explores how varying levels of market buoyancy create distinct challenges for urban planning. It examines the pressures on public-private collaborations to adapt to fluctuating market conditions, with a focus on balancing immediate economic feasibility with long-term sustainability and heritage conservation objectives.

This research aligns with Track 15's emphasis on the intersections of planning, governance, and property markets, offering insights into how adaptive planning and regulatory tools can foster equitable and sustainable urban development. By focusing on market buoyancy as a critical variable, this paper contributes to the discourse on financialization and its implications for urban regeneration, with preliminary conclusions expected in the summer of 2025.

References:

brownfield regeneration, market buoyancy, public-private collaboration, industrial heritage

T_15 PROPERTY MARKET ACTORS / 1365

The State as an Entrepreneur who Transforming Public Spaces: The Case of Zeytinburnu Fabrika-i Humayun

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After 1980, the fact experienced all over the world and called neoliberalism is based on the reproduction of capital through urban space. In this process, the relations between institutions, economic actors, the nation state, local governments and financial capital have been redefined by moving away from the concept of the welfare state, privatisation, increasing international capital movements, intensifying competition between countries/regions/cities, and the capitalist system has entered a restructuring process (Peck, Theodore and Brenner, 2009). In line with the cooperation of the state and capital, the development of land use and construction conditions in favour of groups that serve the interests of the dominant class and benefit directly or indirectly from economic growth has triggered the process of reproduction of the urban built environment (Fainstein, 1994; Sengül, 2009; Uzbek and Dincer 2009; Logan and Molotch, 2013; Penpecioglu, 2013). The state becomes a steering force in the redistribution of wealth by making the legal arrangements required by the neoliberal economic structure (Bayirbag and Penpecioglu, 2017). In this process where wealth is distributed through legislation and legal regulations, piecemeal planning decisions and the expanding powers of the central government, one of the most remarkable issues is the commodification of public interest and services. The transformation of public enterprises, which Sato (2000) refers to as dead capital, into liquid capital through the privatisation of infrastructures constitutes a significant problem for the commodification of public services and for disadvantaged groups to benefit from these services.

Peck and Tickell (2002) explain as 'not the neoliberalisation of the city, but the urbanisation of neoliberalisation', the state and capital have shaped the city, creating differentiated and privatised areas in functional, social and spatial terms. In the 'regime theory', which explains the reproduction of the urban environment and the role of the state in this process, it is defined by combining the resources of actors to facilitate acting together in line with their overlapping expectations, in other words, by constructing a network of relations based on mutual interest (Feinstein, 1994; Uzbek and Dincer, 2009). At this stage, while the spatial transformation of the city is financed by state-backed debt, the state has transformed from a social democratic structure into a structure that provides the infrastructure and finance necessary for capital to increase its profitability (Harvey, D., 2013).

Accordingly, the study will discuss the reflections of neoliberal urbanisation policies in Turkey and especially in the city of Istanbul in the context of privatisation of public lands. The main questions of the study are; who are the actors involved in the privatisation of public lands in Istanbul? What is the position of the state in this process? To what extent does the emerging picture coincide with the concept of public interest? The methodology of the study is to discuss the privatisation processes of public lands in Istanbul and their reflections on the urban space, and in the case of Zeytinburnu Iron Factory; the privatisation of the area, legal regulation, planning process, actors involved in the process, spatial reflections and public interest.

As a result, the perception of the city as an investment area causes actors to come together with overlapping expectations. On public lands privatised by the state through legal regulations, special planning and construction conditions, funds and loans provided by public banks, new urban textures are emerging in line with the profit expectations of

the private sector. Housing, shopping, office, accommodation textures shaped by targeting high income groups and foreign investors form cocoons alienated from the city. On the other hand, the question of what is the public interest in this process is an important dilemma.

Keywords:

Neoliberal Urbanisation; State; Privatisation; Public Interest; Zeytinburnu Fabrika-i Humayun

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T_15 PROPERTY MARKET ACTORS / 1625

Planning Transit-Oriented Development in Taipei City through the Assetization of MRT Development Zones

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The financialization of urban development—particularly through conceptualizing volume as a medium of value production and extraction—has garnered significant attention in urban and regional studies. However, existing research often overlooks the critical role of real estate appraisers in enabling land value capture and the financialization of space. This paper contributes to the volumetric urbanism literature by critically examining how real estate valuation practices facilitate the development and assetization of MRT Development Zones as sites of transit-oriented development (TOD) in Taipei City.

By integrating assetization with a volumetric urbanism perspective, this paper advances our understanding of how real estate appraisers legitimize speculative valuation practices and align them with institutional planning frameworks for TOD. Methodologically, it employs a qualitative approach, combining in-depth interviews with real estate appraisers and urban planners, alongside case-study analyses of MRT Development Zones in Taipei City. The concept of assetization serves as the analytical lens through which

valuation practices are interpreted, revealing how volumetric urban space is rendered, generated, and extracted as an asset class.

The central argument is that real estate valuation is a performative act that legitimizes market prices, stabilizes government-led regulatory frameworks for TOD policies, and fosters new dynamics of real estate investment. By demonstrating how volumes are valued, appraisers contribute to the assetization of MRT Development Zones, aligning them with neoliberal urban governance paradigms. This assetization reinforces TOD as a developmental paradigm, reshaping urban governance in speculative yet institutionalized ways.

Keywords:

Transit-oriented Development, assetization, real estate appraisers

T_15 PROPERTY MARKET ACTORS / 1200

Negotiated Planning in Brazil: From Comprehensive Planning to Deal-Making Cities

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This paper critically examines the transformation of spatial planning in Brazil, marked by a shift from participatory and comprehensive frameworks grounded in master plans and zoning regulations to negotiation-driven, project-specific approaches shaped by the interests of private investors. Historically, Brazil's planning system has adhered to the normative principles of the City Statute, emphasizing participatory processes and formal regulations as mechanisms for promoting social justice and equitable urban development. However, the financialization of urban policies has introduced new dynamics and actors, exerting substantial influence over urban transformation.

Using São Paulo as a case study, mainly focusing on Urban Intervention Projects (UIPs), this paper explores how these instruments reflect a hybridization of planning practices. UIPs allow developers to propose tailored projects that adapt established planning regulations, creating tension with the participatory and equity-oriented ideals embedded in the national framework. These negotiations, often prioritizing financial imperatives, challenge the inclusiveness and equity goals traditionally associated with comprehensive planning paradigms, raising critical questions about the evolving role of planning systems in balancing public interest with market-driven urban transformations.

This study argues that Brazil's shifting planning practices do not merely represent a retreat from comprehensive planning but rather an adaptive response to the tensions between financialization and participatory ideals. By analyzing the broader experience of UIPs in São Paulo, the paper identifies strategies and insights for navigating contemporary challenges in urban governance and safeguarding social justice within negotiation-based frameworks.

Keywords:

Comprehensive Planning; Financialization; Social Justice; Urban Governance

T_15 PROPERTY MARKET ACTORS / 1195

A procedural approach to negotiated developer obligations: The case of Istanbul

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Negotiated developer obligations (NDOs) are a common tool in both discretionary and regulatory planning systems around the world. NDOs have been a popular land value capture method that local authorities with increasingly constrained resources have found useful. They prove to be an interesting tool in the planning profession on the basis that they not only provide parties with a platform to negotiate and reach consensus but also require the actors involved (particularly planners) to duly consider market dynamics. Research studies to date have presented striking findings about the purpose of NDOs, the nature and scope of NDOs, the consequences of the provisions in NDOs as well as the favorable and adverse outcomes of NDOs. NDO negotiations also involve complex interactions between different actors as parties negotiate to deliver benefits to society in exchange for development rights. In this respect, this study adopts a process-oriented perspective rather than a purpose- or output-oriented approach in an effort to reveal the details of the NDO negotiation process as well as the interactions between actors. Especially in countries like Turkey, where negotiated planning agreements are not found in the *de jure* legislation, adopting a procedural approach to NDOs and examining the actors involved in negotiations as well as the interactions between them offer critical insights about NDOs.

The study focuses on Istanbul in Turkey, where the regulatory *de jure* planning legislation has acquired a hybrid character due to the market-oriented *de facto* planning practice. Findings from interviews with 40 respondents who work in Istanbul are presented. Interviews were conducted with actors that represent 6 different groups (urban planners who work in the public sector, developer representatives or consultants, lawyers, bureaucrats, politicians, and academicians) who were/are either directly or indirectly involved in the making of NDOs in Istanbul.

The findings of the study reveal that NDOs in Turkey are made through two different pathways: conditional donations and unconditional donations. During negotiations, senior managers and legal teams have the greatest influence both in the local authority and the real-estate development companies. These actors also greatly interact with each other. Planners who are involved in the process as consultants/facilitators may also have a significant impact. In contrast, other technical staff, departments of the central government and NGOs have limited influence and a low level of interaction. In addition, given that NDOs are one of the key tools for the operation of the *de facto* hybrid planning system in Turkey, the relationships between the actors during NDO-making shifts back and forth between the ever-shifting boundaries between the formal and informal.

Keywords:

relational dynamics; power relations; negotiated developer obligations; planning practice

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T_15 PROPERTY MARKET ACTORS / 90

Becoming asset managers under institutional uncertainty: Local land governance in Ukraine

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The implementation of three interconnected reforms in Ukraine in 2019-2021 has set the stage for one of the largest transfers of land ownership and land use controls on the European continent. First of these, the Decentralization reform resulted in a large-scale municipal amalgamation. Over 12,000 mostly sparsely populated rural, institutionally weak, and subsidy-dependent municipalities were amalgamated into 1469. The amalgamated jurisdictions of municipalities now cover the whole territory of the country and include heterogeneous assemblages of urbanised areas, cultivated lands, and open natural space (see Romanova & Umland 2024; OECD, 2017 and 2022; Dudley 2019 for a general overview). Moreover, the majority of state-owned lands within the municipal territory have been transferred into municipal ownership (Taratula & Stupen 2018).

Second, the spatial planning reform introduced a locally developed statutory comprehensive plan that sets functional zoning for the entire municipal territory (see Anisimov et al. (2024); Steinkemper and Vlasenko (2024). This essentially established a formal municipal planning monopoly without regional or state interference. Third, the land market reform completed the land privatisation by lifting the 20-year moratorium on selling private agricultural land plots, mostly owned by farmers. As a result, the mobility and value of land resources have increased dramatically, with the expectation of intense use and local economic growth in the upcoming years (Deininger & Ali, 2023). Even during the Russian invasion, market transactions expanded and prices increased.

These reforms gave local authorities strong statutory planning powers and fiscal capacities while expanding the market reach in land use. As municipalities lack the experience and the expertise to use these powers effectively and efficiently, this poses a risk to a sustainable and just recovery of the country, especially considering the impending global

land scarcity and its overlapping impacts (Meyfroidt et al., 2022), exacerbated by the loss of lands to the Russian invasion.

And while much research is currently focused on a better understanding of the drivers of local land policies (Götze & Hartmann, 2021), their effectiveness and trade-offs, chiefly in light of the housing (Krigsholm et al., 2022; Lönnroth et al., 2024), climate and energy crises (Löschner et al., 2021), we know little about how local governments start building capacity in land-use planning or develop a land portfolio strategy. While benefitting from extended knowledge of the range of land policies, we can still hardly explain and compare which local land policies are used and why in different contexts (Hengstermann et al., 2023). Intermunicipal learning and knowledge systematization remain weak. Resolving the knowledge and policy gap is crucial, as municipalities are key mediators of land use and are responsible for the implementation of supra-national normative regulations and strategies (Evers, 2024), while also balancing the interests of their constituency and local stakeholders (Mazzoleni, 2022).

Focusing on Ukrainian municipalities of different sizes, land use and population we explore both the use of public land (land portfolio management) and control over privately owned lands (land use management) from the perspective of organizational learning and institutional theory. Via in-depth interviews, we analyse how the local authorities interpret the broader governance context, as well as learn and develop their approach to land management. Using questionnaires and follow-up interviews we identify the use of policy tools and structure the reasoning behind their implementation.

Synthesising these findings, we expand the theoretical understanding of how municipalities engage in land management under conditions of institutional uncertainty and explore practical consequences for the broad goals of achieving sustainable land use.

Keywords:

Land policy; Local government; Ukraine; Land management portfolio; Institutional learning

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T_15 PROPERTY MARKET ACTORS / 1640

The Process and Financialization Characteristics of Financial Institutions' Involvement in Renewed Rental Housing: Latest Cases from China

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Against the backdrop of tight urban spatial resources, urban governments in China are actively implementing urban renewal strategies by transforming idle commercial and office spaces as well as urban villages into rental housing. This is conducive to revitalizing the utilization of existing spatial resources and promoting the balance between employment and residence. Globally, the rental housing market shows strong profit - making potential, attracting in - depth participation from investment institutions and banks, thus forming a new trend of the financialization of rental housing. The Chinese government not only strongly supports the development of rental housing to ease residents' housing difficulties but also explicitly encourages the active participation of financial institutions. This paper explores the intervention process and financialization characteristics of Chinese financial institutions in renewed rental housing projects through the analysis of two micro - cases of the light - asset model (operating companies) and heavy - asset model (equity investment) of financial institutions' participation in renewed rental housing.

The contributions of this paper are reflected in two aspects: **(1) It elaborately summarizes the financial innovations of financial institutions' intervention in renewed rental housing projects.** Firstly, by establishing different specialized institutions (operating companies and equity investment institutions), they intervene in the renovation process of "light - asset" and "heavy - asset" rental housing respectively, and support this process through financial innovations in aspects such as equity acquisition, special loans, and REITs. Secondly, an asset operation process of "investment, financing, management, and exit" has been formed, which is significantly different from the previous short - cycle real estate projects of "building houses - selling for profit". Thirdly, the "second curve" is developed. When the income from rental housing is meager, banks obtain additional income by marketing their other financial products (to the government, enterprises, and tenants), which is an interesting new trend in the Chinese banking industry. **(2) By placing the theory of "the financialization of rental housing" in the unique institutional and market environment of China and comparing it with the previous "land financialization" model centered on land transactions, it is found that:** Firstly, the goal of financialization has undergone a transformation. It now emphasizes the strategic focus on addressing residents' housing issues with national welfare, rather than merely concentrating on spatial expansion and capital accumulation. Secondly, the realization of the financialization process depends on the good cooperation among the government, property owners, and financial institutions, and this cooperative relationship needs to run through the entire process of "investment, financing, management, and exit". This research enriches the theory of the financialization of rental housing and is of great significance for promoting the healthy and sustainable development of the rental housing market.

Keywords:

Financialization; Urban Renewal; Rental Housing; Investment and Financing; Financial Institutions

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T_15 PROPERTY MARKET ACTORS / 393**Hacking the home: Prefabricated housing and new property regimes in residential property development****Author:** Daan Bossuyt¹¹ *Utrecht University***Corresponding Author:** d.m.bossuyt@uu.nl

This paper examines how prefabricated housing units with temporary planning permits are reshaping property relations in urban development. While residential property development has traditionally been characterized by permanent structures and fixed property rights, the emergence of prefabricated housing units operating under temporary permits creates new models of ownership, access, and control. The paper has analyzed 'flexwonen', a Dutch national policy that facilitates the rapid deployment of prefabricated housing units through temporary planning permits, typically lasting 10-15 years (Groot & Ronald 2024). These units can be assembled, disassembled, and relocated, challenging traditional notions of real estate as permanently fixed assets. The state enables this through public funding, streamlined planning procedures, and deregulated property arrangements that allow municipalities to bypass standard building regulations.

The article advances three theoretical arguments with broader implications for urban governance and property theory: first, that prefabricated housing with temporary permits represents a fundamental shift in how property relations are articulated in residential development; second, that this shift is enabled through new forms of networked governance and discretionary decision-making that circumvent traditional planning instruments; and third, that the integration of new technologies in these arrangements is creating new property regimes which exploit principles of circularity and temporary occupation while mediating new dynamics of value extraction.

The project is based on a combination of (1) semi-structured interviews with key stakeholders including property developers, investors, local governments, financiers, and real estate consultants in the Netherlands; (2) content analysis of policy documents, industry reports, and planning guidelines; and (3) spatial analysis. The findings reveal how prefabricated housing developments under temporary permits are negotiated through governance networks where spatial norms are selectively enforced through discretionary decision-making. This research contributes to broader debates about the digital transformation of property (Faxon et al. 2024) and temporary housing (Debrunner & Gerber 2021). We conclude by considering the implications of these shifts for planning theory and practice, arguing that emerging property regimes require us to rethink assumptions about permanence, ownership, and control in urban development.

Keywords:

residential property development; temporary urbanism; property; housing

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T_15 PROPERTY MARKET ACTORS / 467**Taxing away land take? The potential for development taxation as a>NNLT planning tool****Author:** Chris den Heijer¹**Co-author:** Tom Coppens¹¹ *University of Antwerp***Corresponding Authors:** chris.denheijer@uantwerpen.be, tom.coppens@uantwerpen.be

The conversion of natural land into urbanized areas, commonly referred to as “land take,” presents significant ecological, social, and economic challenges. While (supra)national-level regulatory reforms have received considerable attention as a strategy to curb land take, much less focus has been directed towards the local level. This is surprising, given that the responsibility for achieving the “no net land take” (NNLT) goal largely falls on municipalities. However, local governments often lack the planning resources required to address these goals effectively. Moreover, they face limited incentives to reduce land take, as they tend to rely on urban growth—and the associated surge of fiscal revenues—for financial stability.

National and regional regulatory frameworks may help address land take at broader scales, but they are less operable at the local governance level where NNLT goals are ultimately implemented. This prompts the need to explore alternative solutions. Fiscal tools, in particular, represent a promising yet underexplored approach in planning literature. While land value taxes have been extensively studied, other, distinctly local instruments, such as developer obligations and impact fees, remain largely overlooked in planning. These mechanisms offer potential advantages: they can address land take issues without requiring resource-intensive planning efforts, and they may also help realign local fiscal systems, reducing dependence on growth and providing new incentives for municipalities to limit urban expansion.

This study addresses this gap by investigating how local fiscal instruments in Flanders, the northern part of Belgium, can be adapted into effective planning solutions to curb land take. It focuses in particular on the choices developers make in different tax regimes. Through in-depth interviews with developers and planning stakeholders, the study examines two key dimensions of development taxation: (a) its economic impacts and (b) its socio-political and legal feasibility and effectiveness as perceived by the respondents. Through these analyses, this research seeks to identify actionable strategies for municipalities to incorporate fiscal tools into land-use policies, offering scalable and cost-efficient alternatives to traditional regulatory approaches.

Keywords:

development taxation; no net land take; sustainable land management

T_15 PROPERTY MARKET ACTORS / 587**Emotional work in relation to residential property investments and tenants –experiences from Finland****Author:** Johanna Lilius¹¹ *Aalto***Corresponding Author:** johanna.lilius@aalto.fi

Housing has become marketized and to a variegated extent financialized even within traditional welfare states in Northern Europe. Within the Finnish housing landscape

private landlordism is on the rise and state support also emphasizes the changing stance towards market responsibility to provide housing. Private landlords are subsidized both through tax benefits as well as indirectly through housing allowances paid to tenants. Within this contexts, private renting is often represented as a rational choice both from the perspective of the landlord and the tenant. At the same time small flats as a new buy-to-let type has also been introduced by Finnish developers. Within this context we study and interpret the perceptions of private landlords on their investment. To which extent are private landlords driven by incentives from the state to invest in the housing market? How do they choose the homes they invest in terms of quality of living? How do they set the rents? In the light of these questions, how can we understand the relationship of the landlord towards the tenant? More precisely are flats merely an investment, or are there also emotional work done in relations to the property, and the tenant? We analyze on the one hand policy and commercial narratives around the production of the private landlord, and on the other, interviews with landlords within the Helsinki metropolitan region.

Keywords:

landlords; investment; emotional work; welfare state; Finland

T_15 PROPERTY MARKET ACTORS / 447

Financialising Land: China's Urban-Rural Property Market Dynamics and Government Strategies in Planetary Urbanisation

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Land financialisation and real estate investment are vital in shaping China's rapid urbanisation. While extensive research has focused on urban property speculation and land finance in China, less attention has been paid to how these processes penetrate rural areas and blur urban-rural boundaries under state-driven governance. This study addresses this gap by analysing how China has used the advantage of party-state authority to navigate market dynamics and crises in the real estate market, contributing to the global discourse on planetary urbanisation and land financialisation.

This research explores the working logic of land financialisation and real estate speculation in China, highlighting the state's dual role as regulator and actor in property markets. It employs mixed methods, combining secondary economic data and primary observation data. Economic data is from China's official statistics and international organisations such as the OECD and IMF. Non-participant observation data was collected from July to September 2023 in Zhejiang and Sichuan, with 18 villages in 2 provinces.

Key findings reveal that deregulation of real estate markets in 2008 facilitated China's recovery from the global financial crisis, while anti-speculation policies during the COVID-19 pandemic reduced predatory capital speculation and social inequalities. In 2024, China's housing purchase and lending restrictions were relaxed again, similar to the post-pandemic neoliberal path of fiscal stimulus and monetary easing followed by the re-establishment of the market. This action has intensified local governments and rural organisations' reliance on land markets and place competition to address welfare and development pressures. These practices reflect the growing convergence of urban and rural governance and land use under neoliberal capital accumulation.

China's evolving land and real estate policies highlight the State's selective application of neoliberal tools and efforts to balance economic growth and social equality. By examin-

ing the interplay of State intervention, land financialisation, and real estate speculation in China, this research provides critical insights into the role of land use and property markets in shaping planetary urbanisation.

Keywords:

land financialisation; State intervention; real estate speculation; planetary urbanisation.

T_15 PROPERTY MARKET ACTORS / 1092

What - and who - do design guides regulate in the development of public land? The conflicting logics of Société des Grands Projets' property development, between rent maximization and exemplary urbanism

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The Grand Paris Express (GPE) is an extension of the Parisian underground rail network. For its proponents, it is both a transportation and an urban development project, in support of the restructuring of Parisian peripheries around the future stations. GPE amounts to 200 km of new railways, 68 new stations and an estimated cost of 44 billion Euros. Société des Grands Projets (SGP) is the state agency in charge of overseeing the design and implementation of the project, as well as contributing to metropolitan restructuring through urban development projects on the land purchased for network implementation.

The scale of the network and its prerogatives make SGP an important market actor in the Paris region. For the new metro, SGP is purchasing approximately 2000 plots of land on the surface (about 170 hectares) through mutual agreement, expropriation, or temporary occupation. These land acquisitions serve the construction of the transport project, but part of the land will be developed to contribute to network financing and to regional housing needs. Thus, in a context where the sale and redevelopment of public land are increasingly being used to finance urban policies and infrastructure (Artioli, 2021), SGP develops real estate projects on its land through agreements with the main developers of the Paris region. SGP started out by selling building rights, and is now concluding joint-ventures with private developers using a new company (SGP Immobilier) to maximise land-value capture (Aveline et Maulat, 2024). Around 80 real estate projects are planned on the land acquired by the SGP for the metro, contributing to neighbourhood transformation around the future metro stations.

Despite the growing commodification of properties and encroachment of market logics in SGP's action, the agency is by no means a 'regular' landowner or real estate developer. As other public landowners (Piganiol, 2017; Adisson, 2018), it must strike a balance between rent maximization and objectives pertaining to public interest, including the provision of affordable housing, buildings' environmental performance and the provision of urban amenities (Delepine et al., forthcoming).

To achieve such objectives of exemplarity, SGP must coordinate the action of several public and private actors and actively manoeuvre for policy change. To do so, the agency combines financial and technical assistance, ad hoc coordination entities and the production of numerous guides and charters defining best practice in different domains (Schorung, 2021; Fleury & Gomes, 2024), including real estate. Our presentation analyses the "social and environmental reference guide for SGP's urban and real estate projects" (SGP, 2022), a compilation of design principles and operational guidelines.

The guide is intended to frame the action of private developers and architects and can be compared to other tools implemented by local government to regulate private real estate development (such as chartes promoteurs). The guide thus functions as both a regulatory and design instrument. Its analysis contributes to larger debates on market regulation and local policy instruments to address environmental challenges and the production of affordable housing in major metropolitan areas.

Our hypothesis is that the use of the guide in practice shows the contingent reassessment of social and environmental objectives in face of rent maximization imperatives, which translate into diverse uses of the document. The guide is purposefully written as a vague “rulebook” in order to not overdetermine how the game is played, allowing for individual processes to unfold. SGP’s use of the guide would then be particularly instrumental, exploring its potential when it allows to turn power dynamics in its favour. This presentation is based on empirical work in different real estate projects of the SGP, including semi-structured interviews with project stakeholders and desk research.

Keywords:

public land; real estate; design guides; regulation; Grand Paris Express;

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T_15 PROPERTY MARKET ACTORS / 1002

The financialisation of planning through formal legislative change: the case of Ireland

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While there is a growing body of scholarship elucidating the nexus between financialisation, urban governance and planning (Savini and Aalbers, 2016; Waldron, 2019), the ways the local state (and planning systems) shape the necessary legal, regulatory, and policy frameworks that enable financialisation in practice remain largely overlooked (Christophers 2015). Moreover, little attention has been paid to formal legislative changes in

planning as a key site of influence. Using the case of Ireland which has recently approved a major new piece of planning legislation in the form of the Planning and Development Act 2024, this paper seeks to chart how the ‘real-estate financial complex’ (Aalbers, 2012) is successfully deploying the planning system as a tool for creating real estate assets. Specifically, the paper seeks to show how formal legislative changes in planning are being carefully choreographed through policy narratives dominated by financial sector logic to help alleviate investment risks and enhance the viability of real estate development. In doing so, it documents the emergence of new barriers that restrict democratic engagement and undermine the principles of subsidiarity in the planning process. The paper seeks to contribute to the literature that explores the ‘operational infrastructures’ of financialisation (Christophers, 2015). In particular, it attempts to redress the emphasis in financialisation research on macro-economic forces and path dependencies that enable financial expansion by looking more closely at the often-underestimated roles of elected officials, bureaucrats, and industry lobbyists in shaping the necessary institutional, policy and legal frameworks (Ward & Swyngedouw, 2018) that shape flows of financial capital into local real estate (Weber, 2019).

Keywords:

Financialisation; planning; legislative change; Ireland

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T_15 PROPERTY MARKET ACTORS / 1301

Planning and its spatiotemporal traps: rethinking economic value capture and governing capital flows within the United States

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This paper repositions planners as central actors in multi-scalar capital flow governance, moving beyond planning’s traditional focus on local value capture intervention within the United States. By exploring multi-scalar regulators –from national to local actors – and intra-national dynamics that shape capital flows, the paper highlights the limited spatiotemporal character of contemporary economic value capture instruments, drawing on a typology of these tax, fee, and land-based instruments. Ultimately, I call for planning scholars to reimagine planners as strategic urban governors responsible for

safeguarding public interest goals and measures by coordinating multi-scalar regulatory responses to capital flows that assemble the built urban environment.

Keywords:

urban planning; governance; value capture; public interest; capital; investment

T_15 PROPERTY MARKET ACTORS / 1901

Role of property-market intelligence channels in urban governance networks

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This study offers a novel perspective on how market-intelligence channels shape property markets and influence alliances between public and private actors in urban governance. I argue that property actors, particularly investors, form knowledge coalitions through these channels, not only to navigate markets but also to shape regulatory frameworks in urban development. Adopting a strategic-relational approach, this study analyzes the institutional infrastructure of property markets as a dynamic system shaped by interactions among social and economic actors. Beyond marketing and lobbying, property actors leverage market intelligence, comprising locational analysis, socioeconomic data, policy forecasts, land-use regulations, and planning strategies, to establish governance norms and negotiate with public policymakers. This process strengthens their influence within knowledge-based governance networks. Empirical evidence from Amsterdam's property market was gathered through extensive desk research, mapping market-intelligence channels, and identifying key actors. Additionally, interviews with major market participants provide deeper insights into the role of intelligence networks in urban governance.

- This is a published paper. Please see "Taşan-Kok, T. (2024). Navigating the city: Role of property-market intelligence channels in urban governance networks. *European Urban and Regional Studies*, 0(0). <https://doi.org/10.1177/09697764241266411>"

Keywords:

Governance networks, knowledge coalitions, knowledge infrastructure, market intelligence, property actors

T_15 PROPERTY MARKET ACTORS / 593

From sprawl to tall: Lessons from Kelowna, Canada as a blueprint for downtown intensification in mid-sized cities

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Canadian cities are consistently characterized as low-density, dispersed and decentralized, largely due to the pervasiveness of car-oriented development and policies that encourage urban sprawl (Bunting et al., 2007; Talmage & Frederick, 2019). This has cemented Canada's profile as a "suburban nation" (Gordon & Janzen, 2013), which is particularly true in "mid-sized" Canadian cities (populations between 50,000 and 500,000), where urban sprawl is more pronounced (Bunting et al., 2007). Since the early 1990s however, planning paradigms such as New Urbanism and Smart Growth, have promoted growth management policies that favour compact and dense development through intensification. Despite these policies, mid-sized cities continue to encounter challenges with implementation (Graham et al., 2019), often a result of soft market demand (Brewer and Grant, 2015), ample greenfield development opportunities (De Sousa, 2017), and inflexible planning regulations which constrain higher-density development (Nicol and Biggar, 2024).

Recent census data, however, identifies a few exemplary cases, where there is evidence of change in the downtown core. Most notably is Kelowna, British Columbia – a city of approximately 160,000 residents. Downtown Kelowna is undergoing a dramatic evolution, driven by a surge in the number of development applications, and a rapidly growing downtown residential population. Through semi-structured interviews with experts involved with planning and development in Kelowna, this study identifies the key factors contributing to the city's unique successes with intensification of the downtown core. These include the proximity to quality amenities and services in and around the downtown; the unparalleled access to natural features including Okanagan Lake; a proactive local government and pro-development council; rapid population growth amongst demographics that favour living downtown (young adults and retirees); escalating housing prices increasing the demand for denser forms of housing in centralized locations; and the city's appeal from developers based in larger centers who have expertise in developing high-density housing in a downtown context. Despite this momentum, these recent successes are threatened by rising interest rates, labour shortages, and changing regulations related to short-term rentals.

This research offers new insight into the factors that generate success with intensification in a downtown context in a mid-sized city. By understanding what has contributed to Kelowna's success, policymakers and planners working in similar contexts can adapt these lessons to aid in the intensification and revitalization of their respective downtowns – addressing the longstanding implementation challenges. This presentation will provide an overview of these findings and offer broader insights about growth and development patterns in Canadian cities.

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Keywords:

Intensification; Revitalization; Downtown; Housing; Development; Canada

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Track 16 | FOOD

T_16 FOOD / 938

Exploring Food Deserts in Istanbul: Spatial Inequalities in Food Accessibility

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Food has emerged as a critical element of urban systems, gaining increasing attention in urban planning discussions from various perspectives. Among the key concepts gaining prominence in this discourse is “*food deserts*.” In the literature, food deserts are commonly defined as areas where access to a variety of healthy foods is significantly limited. In essence, food deserts pertain to the spatial examination of food consumption geographies and the identification of areas experiencing food insecurity. This concept serves as a means to identify socioeconomically disadvantaged and vulnerable areas, thereby highlighting spatial inequalities in food accessibility. Analyzing food deserts necessitates the simultaneous consideration of **physical (1)** and **socioeconomic (2)** factors. The identification of food deserts, particularly since the 1990s, has been a major focus in North America and has gained global relevance with the advent of the United Nations’ Sustainable Development Goals (SDGs). In urban settings, mapping food deserts enables policymakers to develop and implement strategies addressing justice and inequality within cities. The spatial analysis of these areas not only ensures the rational identification of food deserts but also enhances the effectiveness and traceability of the policies implemented.

Many cities have incorporated food security strategies into their agendas to advance food security discussions and align with the SDGs. Istanbul, home to approximately one-fifth of Türkiye’s population, is among these cities. In 2021, the Istanbul Metropolitan Municipality (IMM) published the Istanbul Food Strategy document, which included a commitment to investigate the existence of areas defined as “*food deserts*” in the literature and, if present, to prioritize interventions in these regions. Against this backdrop, this study aims to investigate the existence and characteristics of food deserts within the metropolitan area of Istanbul.

While the literature predominantly considers supermarkets as the primary source for staple food retail, in Türkiye, open markets (neighborhood bazaars) hold particular importance for fresh food purchases. These bazaars are not only more accessible but also often more affordable compared to supermarkets. According to survey data conducted by the IMM, 56% of Istanbul residents “always” or “often” utilize neighborhood bazaars.

This study seeks to spatially identify problematic areas in terms of access to neighborhood bazaars (food deserts) and food oases in Istanbul. We employed Geographic Information Systems (GIS) and applied spatial autocorrelation and hotspot techniques. Under the **physical (1)** dimension, we considered *food access points* and *land use* patterns. Due to the challenges of acquiring precise point data and the cultural preference for bazaars, neighborhood bazaars were evaluated as food access points. A scoring system was developed based on criteria such as ecological/organic status, operating hours, and the type of market (open—large, medium, small—or enclosed). Under the **socioeconomic (2)** dimension, we incorporated variables such as *Socioeconomic Status (SES) values*, *percentage of residents receiving social assistance*, *percentage of disabled population*, *percentage of homeownership*, and *income levels*. Additionally, a scoring system reflecting household preferences for food retail was created, enabling district-level inferences regarding bazaar usage.

The study's findings reveal that food deserts overlap with the most socioeconomically deprived areas. Notably, compared to the European side, the Asian side of Istanbul exhibits greater vulnerability in terms of access to food points (neighborhood bazaars). The outcomes of this study are expected to provide an analytical foundation for urban food planning and efforts to combat food insecurity. By doing so, the study aspires to guide the development of policies and their spatial implementation, contributing to the construction of resilient urban food systems.

Keywords:

Food Accessibility; Spatial Inequalities; Food Security; Food Deserts

T_16 FOOD / 1116

How Local Policies Transform Foodscapes, Influence Dietary Shifts, and Reduce Emissions: Insights from Six Mediterranean Sub-Regions in France

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Despite its profound implications for sustainability and public health, food planning emerged as a distinct area of focus only in the early 2000s (Pothukuchi and Kaufman, 2000). Existing studies predominantly address the spatial perspective of foodscapes such as retail outlets (e.g., supermarkets, restaurants, and fast food) and their health implications (Mejean and Recchia, 2022). However, they often overlook the multifaceted role of urban and rural planning in shaping foodscapes, including physical infrastructure, economic factors, and socio-cultural influences. In France, local planning policies, such as Food Territorial Projects (Projets Alimentaires Territoriaux, PAT), promote both, sustainable food production and consumption (Marechal et al., 2018). These policies thus engage in innovative approaches that address not only physical food environments but also economic and socio-cultural dimensions influencing dietary habits. While it has been demonstrated that these projects protect agricultural land, expand urban agriculture, and reorient public procurement, their broader impacts on diets and greenhouse gas emissions (GHGEs) remain underexplored.

This research addresses this gap by examining how these local food planning initiatives influence foodscapes and dietary behaviors in six Mediterranean sub-regions of France. Using a mixed-methods approach, we combine multi-level statistical analyses with in-depth case studies to assess the transformative potential of local interventions. First, we assess the capacity of these policies to reshape the physical (e.g., local markets, sustainable food access), economic (e.g., pricing strategies, subsidies), and socio-cultural (e.g., educational campaigns, public procurement) dimensions through a systemic approach of foodscapes (Vonthron et al., 2020). Second, we use a quantitative questionnaire developed by Lulovicova and Bouissou (2023) to track dietary shifts towards environmental sustainability, accounting for socio-demographic variables, rural versus urban contexts, and local infrastructure. The objective is to compare changing behavioral patterns with regional objectives and interventions. Lastly, we analyze the environmental implications of these dietary changes by assessing GHGEs linked to evolving consumption patterns using life cycle assessment (LCA) methodology.

Preliminary findings reveal a shift in local policies from prioritizing physical infrastructure to emphasizing socio-cultural dimensions of foodscapes. While earlier efforts focused on improving access to fresh food mostly through food relocation interventions, recent strategies highlight fostering a culture of sustainable eating via awareness

campaigns, educational initiatives, and local food networks. Such a shift underscores the growing recognition that lasting sustainable food planning requires reshaping consumption habits and social norms. Early evidence suggests that these initiatives have had some success in promoting sustainable dietary behaviors among the surveyed population. However, many interventions focus on non-intrusive, “soft” policy instruments, such as informational campaigns, which may not be sufficient to induce substantial behavior change (Mattioni, 2021). Consequently, the preliminary findings indicate that the estimated dietary changes may be insufficient to achieve significant short-term reductions in GHGs. Additionally, early data suggest that rural and urban sub-regions exhibit distinct behavioral responses, highlighting socio-spatial inequalities in access to sustainable food options between coastal cities and rural areas.

This research underscores the critical role of local food planning in addressing sustainability challenges and advancing net-zero targets. Cities and planners are beginning to recognize the importance of integrating food systems into urban and rural planning, yet significant gaps remain in understanding how to influence dietary habits effectively. Addressing these gaps is essential for achieving long-term environmental, social, and health objectives. By exploring the interactions between regional food planning, foodscapes and climate, our research offers valuable insights into how local policies can transform food systems, promote sustainable diets, and reduce emissions. These findings have broader implications for aligning regional planning with global frameworks such as the EU Green Deal and the Paris Agreement, providing actionable strategies for cities seeking to address food sustainability and climate change.

Keywords:

Foodscape; Sustainable Diets; Climate Change; Case Study

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T_16 FOOD / 945

Planning Beyond Food Emergencies: Healthy, Just & Resilient Places

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The paper presents the results of a project to co-design and develop recommendations for food emergency planning that also promote longer term and deeper change for food and health justice, while fostering resilient communities in places in England. It sets out the conceptual and practical findings underpinning the resulting 'call to action' for planning beyond emergency food. This arises from a collaboration around international research on health, justice and resilience within place-based communities where, via an innovative 'policy-impact' project, new policy is being co-produced. The co-production involves knowledge exchange stimulated by combined findings from complementary studies, and aims for policy that goes beyond emergency modes of planning for food in places. It brings together two major international ESRC-funded studies, which looked at adaptations of young people in monetary-poor households for surviving and recovering from COVID-19 (Panex-Youth, in South Africa, Brazil, UK) and activism that can disrupt patterns of injustice (Building Back Better from Below, in Brazil, Canada, UK), with two aligned studies in London (Food Insecurity & Civil Society) and Toronto (Food Sovereignty). Critically, insights from policy stakeholders in England (Birmingham, Brighton, and London) are integrated, through a series of workshops, which enable people to deliberate, deepen, and draw out implications of findings around socio-economic inequalities, health and food so as to develop local and national recommendations together.

Keywords:

food security policy; co-production; emergency food planning

T.16 FOOD / 1169

Re-thinking urban food systems through territorialisation and resilience: learnings from the COVID-19 crisis in Paris

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The pressures on globalised, tertiarised, and privatised food systems are intensifying within a context of escalating environmental, socio-economic, and political tensions as planetary boundaries are exceeded. These systems face criticism regarding environmental issues (environmental pollution, soil erosion, biodiversity collapse, deforestation), spatial concerns (increased cultivated land area, land grabbing), economic challenges (poverty, dependence on chemical inputs, price volatility, low farmer incomes), social problems (hunger, land conflicts, loss of traditional knowledge), and sanitary risks (animal production sanitary crises, pesticide exposure) (Gasselin *et al.*, 2021). The negative externalities of these systems compromise food security and social justice in the context of climate change, prompting a re-evaluation of food system scales.

In response, initiatives promoting the territorialisation of agri-food systems have emerged, particularly during the COVID-19 pandemic, which witnessed numerous metropolitan initiatives aimed at reconnecting citizens with their food (Nemes *et al.*, 2021). This research examines how key local actors in Paris –public authorities, private entities, and grassroots movements –implemented alternative food initiatives in response to the pandemic, ranging from short supply chains and combating food insecurity to the greening of practices and development of local supply chains. By contextualising the COVID-19 crisis within broader ongoing disruptions –such as inflation in the French economy, organic farming crisis, and climate-related challenges –this work evaluates the potential for food system re-localisation. Our work explores the reconnection of urban dynamics and food security through territorialised food systems, employing a framework rooted in urban studies (Morgan, 2015; Nemes *et al.*, 2023).

More specifically, our findings aim to question the agri-food trajectory of the Paris basin (Bognon *et al.*, 2015) during a time of crisis and its structural and circumstantial changes.

This research draws upon two qualitative surveys. The first, conducted in 2023, originates from an investigation carried out as part of the “Monde d’Avant Monde d’Après” program of the French National Center for Scientific Research (CNRS) (Corne *et al.*, 2023). It comprises approximately fifty semi-structured interviews with stakeholders in the agri-food system, including producers, processors, logistics operators, distributors, local governments, institutional bodies, and associations. The second survey is ongoing and is based on a method of “observant participation” within the departments of the Paris City Council. It includes field observations and interviews with around twenty territorial actors from the Parisian agri-food system, such as businesses, associations, and local governments. Analysing periods of crisis enables us to understand the territorial vulnerabilities of food systems, therefore studying the Parisian agri-food system through the prism of the COVID-19 crisis is particularly heuristic (Fraser, 2007).

In the first place, the research demonstrates how the pandemic intensified initiatives aimed at territorialising the agri-food system, detailing the crisis’ repercussions and the emergence of agri-food counter-models supported by local stakeholders. In the second place, it examines the long-term changes resulting from the COVID-19 crisis. Firstly, we will study the growing role of food planning tools in urban food crisis management. Secondly, we will present some initial findings on the way in which the food aid sector, which was substantially impacted during the pandemic, has worked to relocate its supplies in order to guarantee its beneficiaries a right to healthy and sustainable food. Finally, we will explore the development and strengthening of urban-rural links and the current food governance model in the Seine Basin, through the cooperation between the City of Paris and other local governments, thus contributing to the advent of an agri-food model based on sustainability, territorial resilience, the greening of its practices and the territorialisation of its supply chains.

Keywords:

food security ; pandemic ; territorialised agri-food systems ; Paris

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T_16 FOOD / 94

Universities Leveraging Surplus Food for Socio-Economic Inclu-

sion in Cities: Lessons from the Off-Campus Initiative

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Universities can play a pivotal role in advancing sustainable urban food systems by combining research, education, and strategic alliances to enhance community awareness and foster innovative practices. The Off-Campus initiative, launched in 2018 by Politecnico di Milano, exemplifies this potential, serving as a laboratory for piloting innovative approaches to support local communities.

Within this framework, the SOSpesa and Bioloop projects centered on the recovery, redistribution, and valorization of surplus food as tools to promote employment opportunities, training programs, and food assistance for vulnerable individuals at the neighborhood level. These initiatives were implemented at two Off-Campus locations: NoLo, situated within the Crespi market in northeast Milan, and Cascina Nosedo, positioned at the interface between Milan's peri-urban agricultural park and its dense urban core in the southeast.

Adopting an action research approach, the projects integrated diverse methods, including interviews, focus groups, and operational workshops, to investigate national and international good practices and engage local communities and associations actively. This participatory methodology ensured that the initiatives were grounded in local needs and capacities.

The findings underscore universities' capacity to drive the creation of circular economy mechanisms in collaboration with local associations and merchants, effectively addressing the needs of vulnerable groups. However, they also reveal critical challenges in sustaining long-term socio-economic inclusion processes. While food surplus valorization can act as a powerful catalyst, its impact is constrained when initiatives are short-term and lack adequate public incentives. Ensuring the durability and scalability of such projects requires sustained public support and structural integration into broader urban policies.

Keywords:

urban inequalities; surplus food valorization; socio-economic inclusion;

T_16 FOOD / 1313

Empowering Women through Food Production from the Perspective of Cooperatives

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Since the advent of industrialization, food production and distribution systems have prioritized profit over social and environmental considerations. In response, alternative business models that emphasize community-oriented, environmentally sustainable, and socially conscious approaches to food systems have received increasing academic and practical attention. Even though cooperatives are not a new concept, they have gained considerable importance as a viable model within this framework. Notably, in the food production and distribution sectors, cooperatives are increasingly recognized

as a robust alternative to conventional corporate structures. Moreover, cooperatives offer a means to integrate disadvantaged groups into the system.

As one of the disadvantaged groups, women play an essential role in cooperatives aimed at promoting gender equality and women's empowerment. Women's cooperatives provide a platform where women can gain control over their labor, develop skills, and access education. These cooperatives thus serve as an essential mechanism for fostering women's economic empowerment. Beyond economic independence, feminist movements advocate for women's active participation in social life and involvement in decision-making processes. In this context, women's cooperatives contribute significantly to enhancing women's societal engagement, building their self-confidence, and facilitating the sharing of knowledge and resources. Building on these motivations, the "Empowering Women Through Cooperatives Project" (2021-2024), led by Türkiye's Ministry of Agriculture and Forestry with EU co-financing, established the "Women's Cooperative Network." This project marks a significant milestone for women's cooperatives in Türkiye. In this regard, the analysis of the social and economic contributions of women's food production cooperatives in Türkiye has become a key issue.

The study aims to explore the relationships that women cooperative members establish with their cooperatives, and the significance these organizations hold in their lives. It ultimately addresses the research question: ***"What are the perceptions and experiences of women members of food production cooperatives regarding their cooperatives?"***.

For this question, one of the country's leading agricultural cities, Antalya is selected as the location for this study. In Antalya, 22 women's cooperatives are part of the network, with 15 focused on food production. Among these, four production cooperatives are located in Kepez, a socioeconomically disadvantaged district of the city. While there is a substantial body of literature on women's food production cooperatives, each cooperative and its members have unique experiences and connections with their organizations. This diversity highlights the importance of studying individual cooperatives to better understand their specific contributions and challenges. The Antalya Köy Pazarı Women's Cooperative, chosen as a case study in this research, provides valuable insights into these distinct dynamics. As the methodology, participant observation and semi-structured interviews were conducted with cooperative members, and the data obtained were subjected to content analysis. The experiences of women's food production cooperatives were analyzed under three themes: Motivation (1), Impact on Daily Life (2), and Cooperative Operation (3).

The findings of the study reveal that the primary motivation behind the participation of women in food producer cooperatives is economic independence. Additionally, the cooperatives are found to provide significant social benefits alongside economic empowerment. The results demonstrate that food producer women's cooperatives contribute positively to women's economic, social, and individual well-being. Furthermore, for cooperative members, the cooperative and their colleagues hold a value that extends beyond mere financial income. Considering the role of women within their families and society, women's cooperatives emerge as critical social initiatives that foster women's participation in the economic sphere and their empowerment within both familial and societal contexts.

Keywords:

Food Production Cooperatives; Gender Equality; Economic Empowerment

T_16 FOOD / 1413

Understanding the role of diverse cities for sustainable food security: a socio-ecological governance framework

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In face of compelling socio-ecological urgencies, including conditions of persistent food insecurity and (planetary) health crisis, cities are confronted with the mounting challenge of guaranteeing access to healthy and sustainable food for all (HLPE, 2024). Thousands of urban food policies and initiatives have emerged in the last decade to incorporate food related concerns into urban agendas, signalling the emergence of urban areas as key actors creating more equitable and sustainable food systems (Moragues-Faus et al., 2024). In this context, academic and practitioner demands for overcoming siloed approaches and for linking food with key socio-ecological and urban systems have become more pressing (Hawkes, 2023; HLPE, 2024). Yet, existing conceptual frameworks and practical approaches do not adequately account for the wider urban socio-ecological configurations and multi-scalar governance relations which largely determine sustainability and food security outcomes. In other words, urban food governance actors still face hard times to look 'beyond food' and grasp how place-based socio-ecological, economic, and political dynamics of diverse urbanisation processes condition food security outcomes and governance responses. Thus, the risk is that food system interventions remain a niche, losing the transformative potential of key urban processes.

With the aim to address this problem, in this contribution we seek to provide a deeper understanding of how different urban social-ecological, economic, and political configurations hamper or, on the contrary, enable sustainable food security outcomes; and, consequently, how actors can leverage diverse urban dynamics to shape adequate food security governance and policy responses. To do so, we propose a conceptual framework that informs theories and practices of urban governance for sustainable food security. Helped by research which connects urban food systems with critical approaches on socio-ecological systems (urban political ecology, urban metabolism, hybrid socio-natural assemblages ...), the framework will provide tools to illuminate how key urban and socio-ecological drivers impact on urban food security outcomes (Swyngedouw, and Kaika, 2014; Moragues-Faus and Marsden, 2017). These drivers –or layers –relate to: governance and institutional dynamics, networks and resource flows, urban infrastructure and form, socio-ecological dynamics. The governance layer will be particularly deepened by adopting urban and territorialized approaches to (food) sustainability governance (Cistulli et al., 2014; Sonnino and Milbourne, 2022), offering a place-based perspective on how governance arrangements deal with key drivers, accounting for their hybridity and complexity, so as to tackle the specific challenge of improving urban food security. The paper will then develop first insights on how this conceptual framework can begin to be operationalised in diverse cities. Particularly, we will illustrate the development of a food system monitoring framework in which key variables related to the abovementioned layers are considered and, potentially, can become vectors for a more transformative urban governance for sustainable food security.

Finally, the paper will conclude by highlighting key implications for an improved sustainable food security governance and policy-making in urban areas. We stress how urban food system action and monitoring should keep attention to the question of “who governs the city” in order to take advantage of key urban dynamics that can help to address food security more structurally.

Keywords:

Urban food systems; Sustainable food security; Socio-ecological systems; Diverse cities

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T_16 FOOD / 1732

Reclaiming the Peri-Urban Commons: Agroecology as a Pathway to Just and Sustainable Food Systems in Vicenza

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At the threshold between city and countryside, peri-urban spaces embody a complex interplay of tensions and possibilities. These territories, caught between land speculation, environmental degradation, and urban expansion, are also sites where alternative food futures are being envisioned. The case of Carpaneda, Vicenza (Italy) exemplifies this duality. Here, a grassroots movement—Assemblea per Cascina Carpaneda Bene Comune—has been reclaiming an abandoned public farmhouse and its surrounding land as a peri-urban agroecological commons. Their vision is to transform Carpaneda into a House for Agroecology, a place where food, knowledge, and social justice converge, laying the groundwork for a future Agricultural Park for the City of Vicenza.

The Assemblea per Cascina Carpaneda Bene Comune emerged in 2023, building on a process initiated in 2020 by the local activist group CVA -Comunità Vicentina per l'Agroecologia (CVA). In response to municipal plans to sell off Cascina Carpaneda and its adjoining land, CVA mobilized to oppose privatization and advocate for its recognition as a common, recognizing its ecological, agricultural, and social value. Over the following years, their efforts sparked broader interest and engagement, drawing in citizens, farmers, researchers, and local residents. This growing movement eventually led to the formation of the Assemblea per Cascina Carpaneda Bene Comune in 2023, consolidating the collective struggle to reclaim and protect the area. Since then, the Assemblea has woven a network of alliances, linking farmers, ecological organizations, and urban movements, while engaging in public actions, institutional negotiations, and collective knowledge production. Their approach extends beyond resistance; it is an affirmative reimagining of urban-rural relations, grounded in biodiversity conservation, agroecological practices, and community-led governance.

In 2024, to reinforce this vision and contribute to the Carpaneda Ecofestival, the Assemblea—together with La Piccionaia—joined forces with local and international researchers to launch CARPINO (CARPaneda for INclusion and Observation of biodiversity changes). CARPINO is a transdisciplinary citizen science initiative, designed to co-produce knowledge and support the movement's demands for land protection and commons-based governance. Funded by the HorizonEU project IMPETUS, the project bridges scientific inquiry, oral history, and artistic practice, forming a collective experiment in socio-ecological transformation.

Through a science camp, CARPINO applies participatory research to assess soil health, biodiversity, and water quality, generating community-owned environmental data to inform advocacy efforts. The school of oral history amplifies the voices of the human inhabitants of the area, directly impacted by the marginalization process that affected the Carpaneda area, documenting their relationships with the land and its transformations. Meanwhile, the artistic laboratory engages participants in creative

explorations of human-nature entanglements, fostering deep connections and new imaginaries for the site's future.

Beyond knowledge production, CARPINO is a tool for political mobilization, strengthening alliances between grassroots movements, scholars, and policymakers. By positioning agroecology as both a scientific practice and a socio-political movement, it challenges hegemonic urbanization patterns and advocates for commons-based governance models that resist land speculation and industrial expansion. Ultimately, CARPINO contributes to territorial food sovereignty, reclaiming peri-urban spaces as key sites of ecological resilience, social justice, and food system transformation.

This contribution situates agroecology as a counter-hegemonic planning tool, one that reconfigures urban-rural relations through bottom-up governance, participatory planning, and the recognition of food as a vehicle for socio-ecological justice. By examining the case of Carpaneda, it explores how peri-urban agro-ecological corridors, city-region food systems, and collective land stewardship can serve as models for more just and sustainable urban futures.

Keywords:

Peri-urban commons, grassroot initiatives, citizen science, transdisciplinary alliances, Vicenza

T.16 FOOD / 1690

Care for food: choices and perceptions of food security and sustainability in a changing world

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Food systems lie at the intersection of sustainability, food security, and climate change. In Western societies, consumption patterns have a significant environmental footprint, yet only a small proportion of consumers prioritize seasonal and locally produced food. Urban areas are more susceptible to food insecurity, with certain populations facing greater challenges in accessing healthier and more sustainable food systems. Meanwhile, in rural areas, aging populations encounter difficulties in accessing commercial food markets. As a result, individual food choices, shaped by their immediate food environment, have profound implications not only for health but also for the environment, contributing to greenhouse gas emissions, biodiversity loss, and resource depletion.

This study examines the impact of Portuguese households' food choices on climate change and explores whether food security—encompassing health considerations—aligns with concerns about environmental footprints. Additionally, it investigates whether socio-economic and environmental conditions act as barriers to or enablers of the transition toward more sustainable and healthy dietary practices.

To analyze these dynamics, a telephone survey was conducted between July and August 2024, gathering responses from 1,813 households across mainland Portugal (with a 2% margin of error at a 95% confidence interval).

The results reveal distinct spatial trends across different Portuguese territories, particularly between urban and rural areas, as well as between the northern and southern regions. These differences are evident in terms of food security, including access to

food, which is more constrained in metropolitan areas; perceptions of a healthy and sustainable food system; and the extent to which individuals' dietary habits align with sustainability principles. Notably, while some individuals who believe they eat healthily do adhere to better diets, the majority of respondents overestimated the healthiness and sustainability of their food choices.

From a policy perspective, the survey results indicate that 85% of respondents support state intervention in the food system, agreeing on the need for government policies to promote food security and sustainability. The most widely supported measures include soil conservation initiatives, urban gardening programs, and food literacy campaigns.

These findings highlight the need for targeted policies that account for regional disparities and the socio-economic and environmental realities that shape food choices in Portugal. By addressing both structural and behavioral factors, policymakers can foster a more sustainable and resilient food system—one that balances food security with environmental responsibility.

Keywords:

Food choices; perceptions; food security; healthy diet; sustainability; Portugal

T_16 FOOD / 195

Agroecological rewilding to create new urban food environments

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Agroecological rewilding can be understood as the integration of productive food plants into everyday landscapes to reinstate the latent, ancient understanding of the provenance of food, medicine, fibres and energy sources (Jin et al., under review). The deliberate collocation of the terms 'agroecology' and 'rewilding' is employed to stimulate an inquiry on the conceptual boundaries of agriculture and environmental management, creating opportunities for meaningful engagement with ecological processes through the incidental cultivation, preparation and consumption of food. Hawkes et al. (2015) describe food environments as consisting of everyday nudges that influence consumer food choices to shape dietary habits and preferences; on this basis, it is argued that agroecological rewilding has important potential to contribute towards creating healthier food environments that benefit urban populations. Downs et al. (2020) define food environments as "the consumer interface with the food system that encompasses the availability, affordability, convenience, promotion and quality, and sustainability of foods and beverages in wild, cultivated, and built spaces that are influenced by the socio-cultural and political environment and ecosystems within which they are embedded." While the distinction between built and natural environments is critical, I would question the division between 'wild' and 'cultivated', arguing that practices such as agroecological rewilding exist at the intersection of both, particularly in urban settings.

In this study, I investigate three projects in Australia, North America and the UK that demonstrate the practice of agroecological rewilding to understand their capacity to influence local food environments. The projects are first analysed according to the four key criteria for assessing agroecological rewilding initiatives—site context, growing systems, people and culture, and adaptive capacity—as previously proposed by Jin et al. (under review), who argue that the success of an initiative lies in the balance of these

criteria. The projects are then further assessed on the characteristics of their food environment according to the framework proposed by Downs et. al. (2020) which include measures of availability, affordability, convenience, promotion and quality, and sustainability. Findings reveal that agroecological rewilding has significant potential to directly enhance local food security and promote biodiversity in urban settings. However, challenges such as limited land access, inadequate policy support, and entrenched normative behaviours must be addressed to effectively scale and sustain these practices.

Findings from this study point to the need for future work in this area to measure the longer-term impact of such initiatives. Specifically, longitudinal studies are needed to assess how these practices and initiatives influences local urban food environments, including the effects on food access, dietary behaviours, and community engagement over time. Since the case studies are situated in specific urban and cultural contexts, this may limit the broader applicability of the findings. Future research may also focus on overcoming scalability issues so that initiatives can transition from standalone projects to commonplace practices across diverse contexts. Despite the challenges outlined, agroecological rewilding offers an important pathway with the capacity to facilitate much needed reimagining of urban food environments that better foster the health and wellbeing of both people and the planet.

Keywords:

agroecological rewilding; food environments; productive landscapes; sustainable food systems; urbanism

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T_16 FOOD / 699

The Evolution Characteristics and Planning Regulation of the Population-cultivated land-food (PCF) system in Rural Counties of China

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Food security is integral to national economic stability, livelihoods, and sustainable development, serving as a foundation for China's modernization. The population-cultivated land-food (PCF) system is a complex, semi-open framework operating within specific geographical boundaries. It relies on cultivated land resource utilization, with food production, consumption, and distribution as core components, ultimately aimed at meeting human food needs. At the county level, which is seen as the bridge connecting urban and rural areas, the PCF system influences rural economic sustainability, national food security, and social stability. Exploring the dynamic evolution of this system in China's counties and formulating targeted planning and regulatory strategies hold significant theoretical and practical value.

Industrialization and urbanization have profoundly transformed China's county-level population structures, land-use patterns, and food production systems. Variations in natural conditions and urbanization levels have resulted in uneven spatial distributions of population, cultivated land, and food production. Per capita cultivated land generally decreases from west to east, while per capita grain output is higher in central and western regions. Nationally, cultivated land and grain production are concentrated in mid-to low-economic areas, where regional differences in population demand exert significant pressure on agricultural resources. Rapid urbanization has led to labor shortages in rural areas, exacerbating regional imbalances and affecting agricultural sustainability. Simultaneously, the reduction of cultivated land and trends toward "non-grain" and "non-agricultural" land use pose challenges to stable and sustainable grain production. Despite these challenges, county villages remain vital spaces for grain production and rural labor retention. Addressing food security requires balancing the PCF system while accounting for the region-specific impacts of urbanization and rural development. Achieving this balance demands differentiated planning approaches tailored to diverse local conditions.

This study aimed to reveal the internal dynamics of the PCF system through an analysis of its evolution across 1,848 county-level units (excluding urban areas) during 2000, 2010, and 2020. Using an indicator system, it evaluated system coordination and classified rural areas into distinct types based on coupling modes. The cultivated land area, cropping structure, grain planting index, and multiple cropping rates directly influence land-use efficiency, determining grain output and its distribution. Grain output relative to population defines per capita grain possession, distinguishing grain surplus regions from deficit areas. Meanwhile, cultivated land area relative to the rural population reflects the feasibility of large-scale agricultural production. Urbanization-induced shifts in population and land-use patterns emerge as primary drivers of PCF system evolution. Key findings revealed that, from a total perspective, rural populations had declined significantly, cultivated land areas had increased with greater spatial imbalance, and grain output had generally grown. From an average perspective, per capita cultivated land for rural populations had increased, while per capita grain output exhibited substantial regional variation. The coupling modes of PCF system change—classified as "++," "+-," "-+," and "--"—demonstrated distinct spatial distribution patterns.

Building on these insights, the study proposed targeted planning and regulation strategies for counties with differing coupling modes, emphasizing system coordination. By integrating population, cultivated land, and food dynamics, this research established a dynamic evolution framework for semi-open composite systems. The findings provided theoretical and practical guidance for ensuring cultivated land and food security, promoting high-quality urbanization, and advancing county-level agricultural modernization.

Keywords:

Food Security; Population-Cultivated Land-Food System (PCF System); Urbanization and Rural Development; Planning Strategies

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T_16 FOOD / 848

Exploring the food-climate nexus through a justice lens: insights from urban experimentations

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Climate change is one of the most pressing challenges of our time, with scientists and experts emphasizing the urgent need to reduce greenhouse gas emissions, given the already devastating effects caused by global warming to our planet (IPCC, 2023). Food systems are increasingly recognized as major contributors to global anthropogenic greenhouse gas emissions, with food production alone responsible for approximately one-third of global emissions (IPES Food, 2016; Thornton, 2012; Garnett, 2011). In response to this crisis, urban areas have become pivotal in governance and planning efforts aimed at meeting the Paris Agreement targets of limiting global warming to below 1.5°C or 2°C (Bulkeley et al., 2012; Busch et al., 2018). In this context, several cities are adopting re-localized food systems as a vehicle to achieve climate goals, implementing initiatives like productive nature-based solutions, plant-based food procurement, sustainable food environments, net-zero food waste strategies, and more (IPES Food, 2023). However, despite the potential of these urban experimentations to bridge food and climate sustainability, the urban sustainability literature has largely overlooked the food-climate nexus as a critical arena for achieving place-based sustainability, and for addressing socio-ecological justice.

Highlighting this gap, this reflective paper examines how cities are experimenting with a new socio-ecological agenda at the cross-roads between food and climate, positioning themselves as potential agents of transformative change within this nexus. Particularly, this contribution explores the key governance and planning strategies that emerging urban experiments employ to implement a food-climate nexus. Additionally, it interrogates the central tensions and questions surrounding socio-ecological justice in this context. To address these aspects, this paper will draw on insights from literature spanning both the urban food and climate (justice) domains. First, the paper will draw from work on climate urbanism and mundane innovations (Castán Broto, 2020; Robin and Castán Broto, 2021) to shift the focus from mitigation or adaptation as policy frameworks, to the understanding of the innovative and transformative potential of on-the-ground actions. Second, the analysis will argue about the emergence of a recent wave of urban food movements visibly linking food systems to climate action through place-based experiments and networks (IPES Food, 2023). Bringing on board critical insights on justice from the urban food and climate literatures (Amorim-Maia et al., 2022; Avelino et al., 2024; de Bruin et al., 2024), the analysis will then highlight emerging tensions in combining diverse dimensions of justice through the food-climate nexus. Starting to connect theoretical reflections to empirical evidence, this contribution will briefly illustrate few examples of urban experiments at the food-climate intersection spanning different sections of the urban food system. Particularly, the paper highlights how these initiatives enact sustainability governance strategies and deal with issues of justice as outlined above. Based on the analysis, the paper will conclude by highlighting the importance of learning from place-based practices, and understanding justice as a dynamic and continuously negotiated nexus.

Keywords:

Food-climate nexus, urban experiments, socio-ecological justice, cities

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T_16 FOOD / 120

Caféscape in Transition: A Spatiotemporal Analysis of Hong Kong's Emerging Coffee- Manifested Wanghong Geographies

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The pervasive influence of social media is fundamentally reshaping the logic of urban space (re)production and (re)consumption. As physical spaces are increasingly mediated through social media platforms, their value and meaning become progressively contingent upon digital dissemination effects, transforming tangible spaces into consumable images and symbols. Within this digital-spatial nexus, cafés have evolved beyond their conventional role as dining establishments, emerging as crucial sites of social interaction and cultural production for Asian urban youth. Driven by platform economy and “check-in” culture, cafés, through their cultivated aesthetic distinction and role as spaces of cultural capital accumulation, have manifested as an emblematic spatial typology of “Wanghong Urbanism.” This phenomenon offers a compelling analytical lens for examine urban space (re)production in the digital age. Through a case study of Hong Kong, this research investigates the spatiotemporal evolution of café landscapes from 2014 to 2024 using POI data, exploring their dialectical relationship with socio-spatial restructuring processes and urban morphological characteristics through GIS analysis. The empirical findings reveal three key patterns: (1) café numbers have shown significant growth over the past decade, with particularly rapid expansion during 2018-2020; (2) spatial distribution patterns identify three typical models of “Wanghong” district development: established high-density zones (exemplified by Central-Wan Chai), rapidly transforming areas (notably the regenerated Kwun Tong industrial district and Sham Shui Po), and emerging clusters around new towns; (3) different types of cafés demonstrate distinct locational preferences—chain brands predominantly cluster in employment-intensive business districts, whilst independent speciality cafés tend to emerge in older neighbourhoods with lower rental costs. These findings not only reveal new logics of urban space (re)production in the social media era but also provide a novel interpretative framework for understanding contemporary urban cultural consumption transformation.

Keywords:

Wanghong urbanism; cultural capital; digital geography; socio-spatial transformation; cafe

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T_16 FOOD / 484

Strengthening Marginalized Urban Food Systems through Circular Development for Urban Regeneration: Insights from Migrant Workers in Chengdu, China

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The circular economy is increasingly recognized as an important approach for mitigating resource depletion in cities. In urban planning, Williams's circular development framework extends this concept beyond economic processes to encompass ecological and social dimensions, highlighting three core processes: resource looping, ecological regeneration, and adaptive action (Williams, 2021). Low-income communities often engage in grassroots circular practices aimed at conserving resources or sustaining their livelihoods, however, these practices are frequently overlooked.

For example, in informal settlements located in the suburban areas of Chengdu, one of the largest cities in Southwest China, a significant number of migrant workers from rural areas have moved to the city in search of job opportunities. Among them, some operate within the informal food system, sustaining their livelihoods through small-scale farming and selling locally produced goods. However, their homes and livelihoods are increasingly threatened by two factors: government-led initiatives to consolidate fragmented farmland for industrial-scale food production and real estate-driven urban village redevelopment projects, which replace affordable housing and informal markets. These pressures underscore the urgent need for alternative development strategies that recognize and preserve the value of grassroots circular actions within local food systems.

To address these research gaps and promote a new model for the regeneration of marginalized areas, this study examines an informal settlement in Yongdu Village, Chengdu. It explores how rural migrants contribute to and participate in the informal

food system. It further investigates the opportunities and barriers of adopting circular development approaches in stimulating a new model of urban regeneration by strengthening these grassroots practices.

This study uses a mixed-methods approach. First, field research—including street observations, interviews, and photo documentation—documents various grassroots practices, including composting, recultivating idle farmland, and operating informal street markets. These activities are categorized according to Williams's framework, and their collaborative dynamics are analyzed. Second, drawing on Research through Design, this research formulated a vision that proposes strengthening these local practices through a circular development plan centered on residents' needs. This vision explores the potential of circular development for sustainable urban regeneration by recognizing overlooked resources and enhancing the well-being of marginalized communities. Finally, this study conducted semi-structured interviews with urban planners and scholars to identify the barriers in China's planning system in accommodating such a circular development vision.

Research findings indicate that existing circular actions in urban villages—driven by local labor, indigenous knowledge systems, and underutilized land and space—offer valuable opportunities for initiating circular development. However, the current spatial planning system in Chengdu lacks sufficient planning tools and capacities in areas such as regional circular planning, waste resource recycling, land pollution regulation, and community vulnerability recognition, creating obstacles to improving these local circular initiatives.

Overall, this study contributes to the ongoing discussion regarding the interplay of circular development strategies, sustainable food systems, and the regeneration of informal urban areas. By emphasizing the circular practices of rural migrant workers in localized food systems, our findings highlight how grassroots initiatives could advance socio-ecological justice and enhance food security. Moreover, integrating a circular development perspective into urban regeneration strategies provides novel design approaches to reinforce local food systems and grassroots efforts. Consequently, this study calls for integrating circular development into spatial planning system and emphasizes the need to make use of top-down planning tools while identifying and supporting the bottom-up circular actions of marginalized groups. Such an approach aims to achieve sustainable resource flows and a just transformation of urban food systems.

Keywords:

Circular Development; Informal Food System; Marginalized Community; Urban Regeneration

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T.16 FOOD / 913

“Relationship Between Spatial Disparities, Unsustainable Food Environments and Obesity Contingency”

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“Relationship Between Spatial Disparities, Unsustainable Food Environments and Obesity Contingency”

Due to population growth, uncontrolled urbanization, climate change and insufficient governmental supports, the food security concerns are becoming more important around the world. As a result of major global events (e.g., environmental issues, economic shocks and conflict) and uncontrolled growth in some cities resulted in an increase in poverty, food insecurity, and unemployment rates in urban and peri-urban areas. According to FAO (1996), food security at all different levels is achieved “when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life”. Food insecurity and poverty not only contribute to the rise of undernutrition but also increase the prevalence of obesity by shifts in the consumption of unhealthy diets among the low and middle-income populations. Given the clear importance of both economic development and obesity prevalence, it is necessary to deeply and systematically study and understand how a country's income is connected to obesity and what macro-environmental factors affect this connection. To that end, the aim of this study is to extend the literature on national socioeconomic status and individual obesity by addressing the impact of spatial disparities and inequalities on food security. There are substantial and complex differences in the national-level factors and individual micro-level factors that affect obesity-related outcomes. Therefore, to explore the income-obesity paradox and the socioeconomic-obesity relationship across selected case studies, a quantitative method is assembled. The case studies are chosen based on The World Bank's classification of countries by per capita gross national income: Low-Income, Lower-Middle Income, Upper-Middle Income, and High-Income countries. In addition to Turkey as a focal case, the highest-ranking country from each classification is selected for further analysis. The Spearman's Correlation Coefficient (ρ or r_s) is used in order to assess the strength and direction, whether positive or negative, of the relationship between the dependent variable (obesity rate) and other independent variables. The variables used in Spearman's Correlation are Gini index, GDP rate (Gross Domestic Product), Obesity rate and Global Food Security Index (GFSI). Obesity data is sourced from the World Obesity Federation (WOF) and the World Health Organization (WHO), while data on GDP and the Gini Index is obtained from The World Bank. Results reveal a positive linear relationship between national income and population obesity prevalence, highlighting the significance of national economic status alongside individual factors in shaping food insecurity and obesity outcomes. Furthermore, the relationship between national economic status and obesity in developing countries show similarities with that in developed countries. The analyses indicate that high and upper-middle-income economies show the similar patterns of obesity rates compared to low-income countries. The persistent surge in food insecurity, driven by a complex interplay of factors, demands immediate attention and coordinated global efforts to alleviate and this critical humanitarian challenge and contribute to more effective planning policies.

Keywords: Food insecurity, Economic disparity, National economic status, Obesity.

Keywords:

Food insecurity; Economic disparity; National socio-economic status; Obesity, Turkey.

T_16 FOOD / 1050

Exploring the Impact of Built Environment on Community Food Delivery Environment: A Case Study of Hangzhou, China

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The food environment is a critical determinant of residents' nutrition and health. With the changing lifestyles and the rapid development of food delivery services in China, the food environment has expanded beyond traditional in-person dining and home cooking, necessitating a redefinition to include online dimensions for a more comprehensive evaluation and improvement of residents' dietary behaviors. This shift has become even more significant in the context of the COVID-19 pandemic, which has accelerated the reliance on food delivery services due to restrictions on mobility, social distancing measures, and changes in consumer behavior. The pandemic underscores the importance of understanding how online food environments influence public health, as they have become a primary source of food access for many urban residents.

From a spatial perspective, the built environment significantly shapes the distribution of food delivery outlets and the logistics of delivery process, further shaping the community's food delivery environment. However, the specific impacts and mechanisms remain to be explored. Understanding the interplay between the built environment and food delivery environments is essential for developing targeted interventions to improve dietary behaviors and public health. This includes addressing challenges such as the uneven distribution of healthy food options, the affordability of nutritious meals, and the quality of food delivered to different neighborhoods. This research aims to provide a framework for evaluating and optimizing online food environments, contributing to more resilient and equitable urban food systems in the post-pandemic era.

Using Hangzhou, China, as a case study, this research employs spatial analysis and clustering methods to evaluate the community food delivery environment across four dimensions: food accessibility, availability, affordability, and quality. The results reveal that the food delivery environment in Hangzhou's central urban area can be categorized into food oases and three problematic types: food deserts, food swamps, and food mirages. Further analysis confirms that problematic food environments are more likely to emerge in areas with higher levels of urbanization and greater land-use diversity, such as vibrant urban zones. Additionally, different facilities and land-use types surrounding communities, as well as street connectivity—such as walkability and the distribution of primary and secondary roads—significantly influence these food environment types. Finally, the study proposes strategies from a spatial planning perspective to improve community food delivery environments. Firstly, in areas with higher levels of urbanization and greater land-use diversity, such as vibrant urban zones, it is crucial to prevent the emergence of problematic food environments. This includes paying attention to the healthiness of food offered by delivery outlets and implementing regulatory measures to avoid excessive price inflation. Secondly, specific attention should be given to the accessibility and availability of food delivery services around leisure and entertainment facilities, the quality of food delivery near tourist attractions, and both the quality and pricing of food delivery in core areas concentrated with commercial, business, educational, and medical resources. Lastly, in transportation planning, reducing the clustering of primary and secondary roads while creating convenient environments for walking and electric vehicle use can help optimize the online food environment.

Keywords:

food delivery environment; built environment; spatial planning

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T_16 FOOD / 630**Informing Sustainable Regional Food Chains through Serious Games: The Play Marmara “Food”****Authors:** Ekin Güneş Şanlı¹; İrem Özdarendeli²**Co-author:** Ekim Tan ³¹ *Urban Planner*² *Urban Designer, Interior Architect*³ *Architect, Urbanist, Game Designer***Corresponding Authors:** iremozdarendeli@gmail.com, ekingunessanli@gmail.com

The food system accounts for one-third of global anthropogenic greenhouse gas (GHG) emissions, with significant contributions from agricultural production, land-use changes, and supply chain logistics, highlighting its critical role in the climate crisis (Crippa et al., 2021). Reports such as “Sustainable and Resilient City Region Food Systems” by FAO and RUAF underscore the need for multi-stakeholder participation, dialogue, and collaborative strategies to address urban and regional food system challenges (FAO, 2023). This dialogue is vital in building sustainable food chains, particularly involving local governments, NGOs, technical experts, logistics, cooperatives, retail groups, and consumers.

In Türkiye, the Marmara Region stands out as the most densely populated and urbanized area, housing over 25 million people and contributing significantly to the national economy. Intense urbanization places considerable pressure on the region’s food resources and systems, including procurement, production, and distribution processes. While the region’s fertile soils, climate conditions, and water resources allow for the cultivation of various agricultural products, rapid urbanization and industrialization in the area are leading to a reduction in agricultural land, decreasing quality of soil and underground water pollution, which have an impact on biodiversity and food safety. The region’s dual role as both an economic hub and a critical agricultural center underscores its importance in developing sustainable food supply chains at the national level (MMU, 2024).

To research these challenges and define urgent actions, the Play Marmara Food game, developed as part of the MARUF initiative and designed by Play the City, serves as an innovative tool for fostering multi-stakeholder collaboration. By engaging participants from diverse sectors in a serious game format, the initiative facilitates collaboration by gathering and visualizing high quality data, simulating real-world scenarios, encouraging dialogue, and fostering a shared understanding of challenges and opportunities, ultimately generating actionable strategies for sustainable solutions in regional food systems. This study examines the insights and outputs of the Play Marmara Food game, focusing on its contribution to informing food supply chains and advancing sustainable food system design in the Marmara Region.

Keywords:

sustainable regional food systems; food security; supply chains; serious game

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T_16 FOOD / 1171

Comparing the effectiveness of food policy networks on food system transformation in the mediterranean context.

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Over the past two decades, food policy networks have significantly contributed to transforming food systems globally. However, there remains a critical gap in understanding the precise impact and scope of these transformations, particularly when considering the diverse interfaces within the triad of science, policy, and action. This challenge becomes more pronounced during periods of environmental, political, and socioeconomic crises, marked by heightened uncertainty.

Although still underexplored in the literature, recent studies (e.g., Zerbian et al., 2024; Moragues-Faus et al., 2024; Oliveira, 2022) highlight that a key determinant of these transformations lies in the constellation of multi-actor urban food governance spaces. These spaces enable the co-creation of more inclusive and territorially embedded knowledge-policy interfaces, which are crucial for advancing sustainable food systems. Building on the framework of the European project FoodCLIC, which seeks to guide policy, planning, and practice-based interventions in urban food environments, this research investigates sustainable co-benefits, strengthened rural-urban linkages, enhanced social inclusion, and new connections between food systems and other complex systems. Specifically, we assess the effectiveness of food policy networks in the Mediterranean context, leveraging empirical data derived from structured interviews conducted in three city-regions: Lisbon (Portugal), Barcelona (Spain), and Pisa (Italy).

Drawing from the perspectives of representatives from science, policy, and action in each city-region, the study applies the analytical framework proposed by Moragues-Faus (2024), which emphasizes the principles of Time, Place, Relations, Diversity, and Power. This approach allows for a comparative analysis that sheds light on the dynamics of urban food governance and the opportunities for fostering socio-ecological transformation.

By contextualizing the findings within the broader theoretical landscape, this work aims to inspire reflexive initiatives tailored to the specific needs of each city-region. Ultimately, the goal is to identify and promote effective, long-term commitments and shared responsibilities that drive sustainable food systems while addressing the interconnected challenges of urbanization, inequality, and environmental sustainability.

Keywords:

Food Policy Networks; Urban Food Governance; Mediterranean context

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T_16 FOOD / 1250

Planning for living soils - Contributions from spatial planning to landscape agroecology through land management

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Soils are pivotal to multiple environmental processes and services, including carbon sequestration, water buffering, biodiversity, and food production. Yet they remain marginalized in planning practices, which, if they do, predominantly focus on erosion control and avoiding soil sealing. In the age of “wicked problems”, the need for innovative and systemic approaches, i.e. a nexus approach, is ever greater.

This research applies such a lens. It explores how spatial planning can address living soil issues in agroecosystems, a critical yet underprioritized issue in Flanders, with an emphasis on the capacity of planning to transcend policy silos, land-use boundaries and spatial scales. The study investigates possible planning instruments that can leverage public land ownership and existing land management strategies to contribute to the transition towards sustainable agroecosystems and the development of landscape agroecology. More specifically, the focus is on public land management and land acquisition policies for nature and water related policy objectives. The ongoing retirement wave in the agricultural sector presents a unique opportunity to grant access and long-term security on public land to farmers, enabling them to adopt regenerative practices and ensuring both ecological and economic viability. These possible transitions are also related to broader challenges and policy objectives such as water management, biodiversity and climate resilience, connecting farm-level interventions to regional planning objectives. This way, the study seeks to develop pathways in which these goals also entail a future for farmers, rather than the continuation of separate policy silos that only increase the struggle for land?

The research is conducted and put to practice on the level of a pilot area in the ‘Flemish Westhoek’, but findings will be tested against the broader scope of the Flemish agricultural sector throughout different regions.

Keywords:

Living soils; Landscape agroecology; Rural Planning; Cross-domain synergies; Public (farm)land

T_16 FOOD / 1329

Diversity & sustainability: Urban food sharing initiatives as care infrastructures for a just transition

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Whilst cities increasingly develop urban food policies to promote sustainable food systems, the role of local food-sharing landscapes remains underexplored, particularly in understanding how diverse urban populations engage in food-sharing activities.

In response, this paper examines local food-sharing initiatives (FSIs) as key actors in engaging diverse communities. By analysing FSIs' roles in both redistributing food and re-shaping relationships with marginalised groups, the study explores how these initiatives address food needs outside formal welfare systems and contribute to a just food transition.

Framing FSIs as care infrastructure, the paper investigates how their location, form, and function explicitly respond to the needs of various groups in Milan, including individuals with disabilities, ex-prisoners, women, children, young people, people experiencing homelessness, refugees, migrants, ethnic minorities, older people, and those facing poverty and social disadvantage. Using mapped data that geolocates and categorises FSIs with a digital presence in Milan—alongside policy analysis, small-area statistics, and a detailed examination of FSI online profiles—the paper presents an urban-scale perspective on the FSI landscape and the communities it engages.

The findings reveal that FSIs in Milan operate across a range of activities, including redistribution, growing, eating, and cooking, supporting diverse communities. Importantly, FSIs go beyond merely addressing food insecurity; they seek to foster solidarity and cultivate convivial, equitable relationships with the communities they serve, acknowledging their distinct needs and knowledge. In doing so, FSIs lay the foundation for more inclusive and sustainable food communities.

This study highlights the need for greater recognition of FSIs and the inclusion of diverse groups as essential components of the urban food ecosystem. By integrating FSIs into urban food policies, researchers, planners, and policymakers can better address immediate food needs whilst advancing broader goals of social inclusion and sustainable urban transitions.

T_16 FOOD / 1314

Revisiting the City-Region Concept in CRFS: Bridging Theory, Methodology, and Application in the Context of Turin, Italy

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This contribution is derived from my broader doctoral thesis on “Urban Food Policies” developed within the context of Turin, Italy, where the local food system and its emerging food policy are investigated using a City-Region Food System (CRFS) approach. The focus of this presentation is the effort, conducted in collaboration with colleagues involved in several projects within the Turin Food Atlas group, to innovate the theoretical-methodological framework behind the construction of the city-region concept within the CRFS context.

Specifically, I conducted a systematic literature review to understand what use of the city-region knowledge, per how understood in urban and economic geography, was made in the CRFS framework and how the latter reflects prior scholar discussions. The review revealed five distinct interpretations of city-region, with a notable dominance of the normative paradigm.

The finding starkly contrasts with earlier literature, which views the city-region as the result of an organic process rather than a normative construct, and highlights the critical need to discuss the methodologies that contribute in selecting the components that constitute a relevant city-region. Drawing on the FAO’s conceptualization of “Territoriality and City-Region”’s pillar, the discussion examines how territoriality shall support the normative delineation of the city-region, with the specific goal of understanding whether it successfully contributes to perimeter contexts that should otherwise emerge from a preceding process rather than be created ad hoc for the research’s purposes.

This theoretical framework, enriched with the Italian Territorialist School knowledge, was tested through the development of a methodology designed to delineate the CRFS using the territoriality concepts as proposed by geographic scholarship also in relation to food systems. This methodology was then applied to the case of Turin, where the CRFS delineation was analyzed across various potential scales (City of Turin, Metropolitan City of Turin, Piedmont Region, Italian North-West industrial triangle of Genoa, Milan and Turin), reflecting the interplay of urban and rural relations in multiple fields.

This research aims to address a significant theoretical gap by critically evaluating the shortcomings in the use of the city-region concept within CRFS studies. Furthermore, it proposes a methodology that, building on existing knowledge, supports the delineation of city-regions that reflect local specificities rather than being the top-down selection of external actors. This approach offers a nuanced tool for scholars and practitioners seeking to integrate territoriality into sustainable food planning at the city-region scale.

Keywords:

city-region; sustainable food systems; urban food policies; territoriality

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T.16 FOOD / 1681**Wine production and its dark side: the impacts of the “vineyard rush” in North-Eastern Italy****Author:** Matteo Basso¹¹ *University Iuav of Venice***Corresponding Author:** mbasso@iuav.it

In some territories, food systems characterised by highly competitive agricultural productions (as for instance grape and wine) have favoured –over the last years– a cascading local development process, projecting premier wine-regions into a global market. Supported by pro-growth local and national agendas, these territories –often referred to as agro-industrial– represent, to all intents and purposes, areas of specialised and intensive production, whose economies call for strong drives towards innovation, optimisation, and almost always outright exploitation in the use of resources. Policy agendas, however, often clash with the impacts that these dynamics generate. Market-led intensive agricultural productions, indeed, often pay very little attention to the socio-ecological impacts triggered by the so-called “monocultures”.

In recent years, the Veneto Region (North-Eastern Italy) has become the most relevant Italian Region in terms of wine production and exports. This result is mainly due to the increasing international demand for the Prosecco sparkling wine, that has undoubtedly contributed to Italy’s positioning among European Union Member States and other Countries. However, the “vineyard rush” affecting the Region has also led to several consequences in terms of land-use and landscape modifications, biodiversity loss, environmental degradation, and public health issues connected to the massive use of chemicals by wine-growers. This situation is also exacerbated by an intense social conflict that has spread throughout the territory.

This contribution makes public some of the results of a study conducted by the author in the last years, with the aim of mapping and assessing the spatial changes related to the intensification of wine-growing in Veneto. From a theoretical perspective, it seeks to draw new perspectives and connections between vineyard sprawl and land-use change, two categories whose links are still rarely investigated today within the spatial planning field. Empirical evidence derives from a cluster analysis performed to group Veneto Region’s Municipalities according to the different spatial patterns and trends of such a recent vineyard expansion. Specifically, through multivariate statistical methods (Principal Components Analysis and K-means clustering), five clusters of Municipalities were recognised in terms of geographical, demographic, urban characteristics, the spread of the surface under vines, and its consequences as regards the loss of biodiversity and the land-use substitution effect (namely the conversion of other crops and the progressive removal of natural habitats): i) hilly territories of the historical production areas with consolidated wine-growing specialisation; ii) flat rururban territories with a high density of vineyards and significant environmental impacts; iii) flat agricultural territories subject to the recent dynamics of vineyard sprawl; iv) flat urbanised territories with low diffusion of vineyards; and v) mountainous territories subject to recent dynamics of viticultural colonisation. Beyond quantitative data, a set of maps, satellite photos and evocative pictures will also be presented to help readers –especially those who are not familiar with these places and this phenomenon– better understand the pace and scale of the ongoing spatial transformations affecting the Region.

This study may be significant for two main reasons. On the one hand, research results seek to advance the planning scholarly research that deals with the land-use modifications associated with the spatial and economic intensification of intensive agriculture such as wine-growing. On the other hand, they provide a detailed overview of the territorial impacts generated by the wine economy in Veneto, according to different clusters of Municipalities. This knowledge can be used by policymakers at the regional scale to better design policies aimed at governing vineyard sprawl and promoting more sustainable (and just) viticultural practices, as well as enhancing the quality of life of citizens.

Keywords:

wine-growing; vineyard sprawl; Prosecco wine; cluster analysis; land-use change

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T_16 FOOD / 183**Gender mainstreaming in urban food policies: governance approaches and processes from three Spanish cities**

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This paper explores the integration of gender mainstreaming in urban food policies (UFPs) through case studies of three Spanish cities: Barcelona, Valencia, and Zaragoza. While UFPs are pivotal for addressing sustainability in urban food systems, attention to gender disparities within these frameworks remains insufficient. Using a qualitative comparative analysis of policy documents and interviews with policymakers, this study examines how these cities approached gender integration, the processes that enabled it, and the outcomes achieved. The findings reveal three diverse approaches varying in terms of bottom-up or top-down processes, types of actors involved and the comprehensiveness of gender integration in the resulting UFP documents. Challenges identified include limited local jurisdiction, insufficient administrative capacities, and the risk for gender mainstreaming to remain a façade. This research contributes to urban food governance literature by analyzing three examples of gender integration in UFPs, a topic that is scarcely addressed empirically and theoretically. It also contributes to gender mainstreaming literature by highlighting the importance of tailored policy tools and administrative training.

Keywords:

urban food policies; gender mainstreaming; urban food governance; Spain

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T_16 FOOD / 238

Crisis-Driven Transitions: Scale-up Innovative Alternative Food Models in Lebanon

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Since October 2019, Lebanon has been witnessing radical crises that revealed the fragility of the mainstream food system. The collapse of the banking sector, political instability, and the COVID-19 pandemic have drastically reduced purchasing power and exacerbated socio-economic vulnerabilities. Compounded by geopolitical tensions and the influx of Syrian refugees, these crises have intensified concerns about food security, with alarming indicators highlighting inequities at both national and sub-national levels. Amid collapsing public institutions and rising food insecurity, vibrant civil society organizations (CSOs) have played a significant role in planning for a more just and sustainable food system. These organizations have developed socially innovative practices tackling food issues. By leveraging socio-technical disruptions caused by the crises, some have successfully scaled up their models offering the potential for alternative food models to the mainstream food system. Although the Lebanese case is not unique, its radical crises and vibrant civil society offer exceptional moments and a compelling context for developing empirical analyses on planning for a just and sustainable food system.

Using a multi-disciplinary approach from planning and organizational development disciplines, this study examines how various CSOs in Lebanon mobilized to address institutional voids and explores their socially innovative practices to scale up their Alternative Food Models (AFMs) during radical crises. By linking Lebanon's food system transitions to global food regimes and applying the Multi-Level Perspective (MLP) framework, the study contextualizes crises-driven socio-technical disruptions as opportunities for niche innovations to scale up and develop alternative models. After mapping food-related initiatives developed by CSOs across Lebanon during the crises, the study applied Frake and Manissa's (2018) framework to examine the planning practices of 5 significant AFMs involved in scaling up processes, focusing on interventions, mechanisms, and outcomes. A mixed-method approach was employed, and fieldwork was conducted in two phases. In the summer of 2022, semi-structured

interviews were carried out with key stakeholders, including CSO representatives, donors, local producers, municipalities, and implementing partners. In the summer of 2023, the second phase involved participatory observation, further interviews, and a social media analysis.

The study identified five types of scale-up strategies the five selected AFMs developed, ranging from temporary measures to more sustainable approaches that might create systemic change. They mainly worked on expanding their spatial reach, diversifying food-related services, and increasing public awareness of local and agroecological practices. However, the type and sustainability of their approaches were shaped by the mechanisms they adopted, including governance restructuring, efficient resource management, knowledge development through experimental learning, and strategic networking. These scaling efforts aimed to address immediate food insecurity while contributing to broader food system transitions and/or the enhancement of local development.

This study offers critical insights into how civil society organizations can play a transformative role in addressing food system vulnerabilities in fragile and crisis-affected contexts. Understanding the socially innovative approaches of the different AFMs and their scale-up practices within a fragile context like Lebanon provides valuable insights into food planning during crisis-driven situations. By offering insights into scalable, community-driven approaches, it gives planners, policymakers, and practitioners with strategies to address complex food security challenges while promoting resilience, sustainability, and equity. These findings are globally relevant, offering transferable lessons for planning just and sustainable food systems in the face of escalating planetary crises.

Keywords:

Alternative Food Models; Scale-up; Radical Crises; Lebanon

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T.16 FOOD / 1349

The Paris sustainable agri-food strategy: the role of public lands and the rural-urban linkages.

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The Paris sustainable agri-food strategy: the role of public lands and the rural-urban link-ages.

Since 2008, the City of Paris has been working on a food policy for the procurement of public canteens, urban agriculture and open-air markets. This food strategy has recently been extended to the Seine basin, with the support of AgriParis Seine. Based on a cooperative and interterritorial model, this food strategy goes beyond the central place Parisian model and questions the role of rural stakeholders in the food governance. The paper is based on the work of a Doctoral student involved in the City of Paris. Using the case of public land, it will show how Paris is reclaiming its public land inside and outside of the administrative boundary for agri-food projects, drawing on the experiences of other stakeholders in the agri-food system. Food public land could be understood as all the land that hosts each step of the food supply chain : land for production, land for storage, land for cleaning and peeling, land for transformation or cooking. The methodological framework which is based on land databases and interviews will be presented, along with two results. The first will be related to the public farmland : inherited from social and environmental hygienist policies, Paris is rediscovering its potential to accommodate and contribute to the food strategy, rather than a financial value. The second will focus on the land responsibility involved in the trade-offs between the cooperative food policy and the public land management.

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Keywords:

public farmland; food governance; land justice; agri-food strategy; land responsibility

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T_16 FOOD (0) / 1996

Urban Agriculture and Multispecies Commoning in Public Housing Regeneration: Rethinking Ecologies of Care in Scampia

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In an era of planetary crisis, urban planning is increasingly confronted with the challenge of moving beyond extractive development models to foster new ecologies of care and relational urbanism. As cities attempt to integrate environmental concerns into regeneration strategies, urban agriculture is often instrumentalized within top-down greening policies, serving as a compensatory tool rather than an agent of transformative change. This paper critically explores the potentials and contradictions of embedding urban agriculture within public housing regeneration, focusing on the case of Scampia, a district in Naples historically marked by socio-spatial marginalization and speculative urban transformations. Through an analysis of the ongoing "ReStart Scampia" project, an urban transformation initiative that envisions the restructuring of open spaces through a new system of cultivated fields, urban forests, and collectively managed green areas, this research examines how urban agriculture can be conceived not as a compensatory greening strategy, but as a tool for multispecies urban commoning. This approach challenges mainstream narratives of sustainability, questioning whether urban agriculture in public housing contexts can genuinely foster socio-ecological justice, or whether it risks being co-opted within neoliberal redevelopment logics. Drawing on urban political ecology and critical urban studies, this research interrogates the governance structures that shape urban agriculture initiatives in marginal contexts. The study raises crucial questions: to what extent can agricultural practices refigure public housing neighborhoods as spaces of care and collective stewardship? How can urban planning accommodate the agency of non-human actors within regenerative processes? What governance structures are needed to sustain non-extractive, post-growth approaches to urban regeneration? While ReStart Scampia presents an ambitious framework for integrating agriculture into public housing redevelopment, the effectiveness of such interventions depends on the capacity to move beyond purely symbolic green policies and toward participatory, commoning-based governance models. By framing urban agriculture as a site of negotiation between institutional planning and grassroots ecologies, this research contributes to contemporary debates on post-growth urbanism, alternative economies, and socio-ecological entanglements. The case of Scampia offers insights into the challenges of designing urban environments that move beyond anthropocentric development, fostering new alliances between land, food production, and everyday life. However, for urban agriculture to serve as a genuine tool for commoning rather than a decorative greening strategy, planners and policymakers must address the tensions between top-down regeneration and bottom-up land stewardship, ensuring that these initiatives remain embedded in long-term, community-driven governance frameworks.

Keywords:

urban agriculture; public housing; multispecies commoning; socio-ecological regeneration; post-growth urbanism;

T_16 FOOD (0) / 1635**Urbanism and agriculture. Dialogues between Italy and France.**

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In the face of the ecological threats that are challenging today's inhabited territories, the agrarian question has nowadays been fully incorporated into the international urban debate and has become one of the privileged topics of discussion. This is certainly not the first time in history that urbanism has taken an interest in agriculture. However, the emergence of the agro-industrial system and the establishment of the relative food regime, which have become dominant in recent decades, have long contributed to keeping these two fields of knowledge - rural studies and urban ones - apart, confining them to different and, in some ways, opposed spatial spheres. Rather, as the work of several designers and scholars from different countries has recently shown, it is now evident that the knowledge of urban planning and agriculture are coming closer together to build new capacities for thinking about our common future. It is crucial to share this knowledge and to build new platforms for dialogue that will enable to chart the way for new international alliances and collaborations.

These initial reflections gave rise to the seminar 'Agriculture and urbanism. Dialogues between Italy and France', realised in the frame of the H2020 Cities2030 and the Vinci post-doc research projects, held at the Iuav University of Venice in March 2024. Focusing on the Italian and French scene, the event was built with the aim of bringing together two cultures of design and research in urbanism, calling upon different knowledges and positionalities - thinkers, researchers, professionals, but also activists and institutions - to share knowledge and fruitful intentions for the future.

Based on the main results of the conference and the different contributions, the paper explores potential interpretations and proposes some possible guidelines for the construction of an emerging field of research and design that cross traditional disciplinary boundaries. First of all, it shows why urbanism and agriculture are currently reuniting, both in the field of research and design and in the reality of different territorial municipalities. The paper then illustrates the emergence of new alliances between different actors - architects and urban planners on the one hand, producers and territorial collectives on the other, and between activists, urban planners and institutions - showing that the rapprochement between urbanism and agriculture contributes to the construction of unprecedented opportunities for exchange. The paper continues showing the rise of new tools that include agriculture, and more specifically agroecology, as a fundamental knowledge to accompany the transition of inhabited territories. Finally, some hypotheses are traced on a possible process of urban exodus that is underway and its future consequences for inhabited territories, a process that undermines the validity of most of the urban centralisation and densification policies currently in place.

The paper concludes by drawing some important lessons about the opportunities, but also the limitations, of bringing together fields of knowledge that have remained too far apart for too long. Returning to the European scale, it illustrates the need for a defined and specific operational and policy framework that cuts across the sectorial divide and advances the cause of an alliance that is still in its infancy, but which is crucial.

Keywords:

agriculture, urbanism, transdisciplinary approach, interdisciplinary dialogues

T_16 FOOD (0) / 1688

Foodtracks: exploring Mediterranean wetlands through four Artistic-Culinary Projects

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Mediterranean wetlands are extraordinary and complex ecosystems that perform a multitude of functions and provide numerous ecosystem benefits and services, as well as being important carbon sinks. At the same time, they are man-made spaces that promote recreation and leisure, regulate flooding and erosion, purify water and provide valuable water and food resources for local human and non-human food systems. However, these territories are under severe pressure due to high population density, continuous population growth and a severe increase in tourist influx. They are also territories affected by a drastic reduction in the availability of fresh water due to climate change, which is much more intense in these areas than the world average.

It is therefore necessary and increasingly urgent to accompany these territories in a transition towards more sustainable and resilient models of habitats, economies and local food systems that put the ecological value of these precious areas of the planet back at the centre.

In this context, the contribution advances a reflection on four Mediterranean wetlands: the Ria Formosa in Portugal, the Guadalquivir Marismas in Seville, the Camargue and the Venice Lagoon. These four food production landscapes are explored through a transdisciplinary perspective between landscape and art. In these four territories, a series of artistic-culinary projects that are redefining, from a socio-cultural point of view, the relationship between gastronomy, landscape and sustainability are investigated.

This article first analyses the tools and strategies adopted by these projects to promote the transition to more sustainable local food systems and redevelop productive landscapes. Indeed, these four projects have developed heterogeneous initiatives that integrate artistic actions, landscape design and culinary practices to strengthen local economies and rediscover the culinary identity of their regions. At the same time, these initiatives function as devices for territorial mediation and political and cultural awakening in territories affected by processes of overtourism, commodification and land grabbing that are severely undermining local ecosystems. These cultural practices represent light and flexible infrastructures that operate as catalysts for new relationships and synergies by creating unprecedented connections between producers, inhabitants-eaters and the landscape itself through sensorial and educational experiences.

Finally, the article analyses the challenges and opportunities offered by these projects from an economic and ecological perspective, as well as their social acceptance (empathy) and potential replicability in other wetlands in Europe.

Keywords:

Wetlands, Local food systems, Landscape, Gastronomy, Spatial mediation, Art

Track 17 | PUBLIC SPACE

T_17 PUBLIC SPACE (A) / 259

A Study on the Supply-Demand Relationship of Recreational Services Supported by Ecological Public Spaces: A Case Study of Nanjing, Jiangsu Province, China.

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With the rapid advancement of contemporary society, urban residents are increasingly demanding a better quality of life. Recreational services offered by ecological public spaces play an essential role in enhancing collective human well-being. However, given the rapid economic growth, rising levels of urbanization, and swift population expansion, the imbalance between the demand and supply of these recreational services has become increasingly evident. Significant disparities have emerged in the quality of recreational services accessible to residents in different locations, giving rise to certain inequalities that run counter to our pursuit of social equity. Moreover, there is a notable dearth of research on the supply-demand relationship of recreational services, and studies focusing on changes in this relationship across various urban administrative districts are virtually absent. To address these issues and achieve social inclusivity and balance in ecological public spaces, this study conducts an in-depth examination of the supply-demand relationship of recreational services. Such an investigation holds significant theoretical and practical value for rationally planning and managing ecological land within a given region, promoting social equity in recreational services, and advancing ecological civilization.

Taking Nanjing, Jiangsu Province (China), as the study area, this research integrates 30-meter land use raster data with spatial population data and adopts a 1 km × 1 km grid structure as the primary standard of analysis. Five distinct modes of travel—walking, bicycling, electric cycling, public transit, and driving—are thoroughly investigated. In this process, three service radii of 2 km, 5 km, and 10 km are selected for evaluating the accessibility of ecological land. It is assumed that ecological land within the specified radius of a particular grid cell can provide various recreation and entertainment opportunities to local residents. Meanwhile, residents of that grid cell are also entitled to make use of the entire ecological land area within that radius, thereby allowing the quantification of the supply of recreational services. A per capita ecological land standard of 60 m²/person is set as a measure of demand, and then these two metrics are combined by employing the supply-demand ratio (R) to quantify the balance between the supply of and demand for recreational services. Furthermore, spatial distribution characteristics of the supply-demand relationship in each administrative district of Nanjing are examined across different service radii.

The results indicate that: (1) In 2020, the supply-demand relationship of recreational services in Nanjing exhibited distinct spatial distribution characteristics, with a pronounced mismatch between areas of high demand and high supply. (2) As the service radius in Nanjing increased from 2 km to 10 km, a significant improvement in the overall supply-demand relationship was observed. This improvement is primarily reflected in a decreasing extent of deficit areas and a continuous decline in the population whose recreational needs remain unmet. (3) In light of the variations in the supply-demand relationships in different administrative districts across multiple service radii, four types of areas were identified: local-satisfaction, medium-range satisfaction, long-range satisfaction, and unsatisfied. Furthermore, for each of these four categories of regions characterized by distinct recreational service supply-demand relationships, targeted planning recommendations were proposed to enhance equity in ecological public spaces.

In the context of growing emphasis on fairness and justice in public spaces, this study proposes the judicious planning of ecological public spaces and the enhancement of decentralized management of regional ecological land. Meanwhile, it is crucial to strengthen ecological compensation and economic cooperation among various administrative regions to achieve a balanced supply-demand relationship for recreational services within ecological spaces, uphold fairness and inclusivity in ecological public spaces, and embody the principles of sustainable development.

Keywords:

ecological public space, equity, recreational service; supply and demand relationships

T_17 PUBLIC SPACE (A) / 360

Beyond Anthropocentric Placemaking: Integrating Non-Human Agency in the Participatory Urban Design Processes of Public Space

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As urban areas face rising environmental challenges—including biodiversity loss, climate change, and the uneven distribution of resources—there is an increasing need to rethink approaches to designing public spaces that foster inclusion and resilience for both human and non-human communities. Urban environments, shaped largely by human priorities, often overlook the roles that non-human beings and multispecies relationships play in creating vibrant and inclusive public realms. In response, this paper critiques anthropocentric practices in participatory urban design and placemaking, arguing for an expanded framework that accounts for the diverse forms of agency exhibited by different species.

Central to our argument is the introduction of a “Spectrum of Non-Human Agency.” This conceptual framework systematically evaluates how non-human actors shape design interventions at different phases of the design process. While well-established participatory models like Arnstein’s Ladder emphasize different degrees of human involvement and empowerment, they largely omit the possibility that non-human actors might also shape urban landscapes. We propose that recognizing and facilitating these ecological contributions is key to creating more resilient, sustainable, and inclusive public spaces.

Empirically, our study draws on a review of 30 nature-inclusive projects, each intentionally aimed at benefiting non-human communities. These projects range from community gardens designed with pollinators’ habitats in mind to larger-scale interventions of nature-based infrastructure—like bat-friendly bridges—aimed at fostering biodiversity in publicly accessible settings. To explore these initiatives further, we focus on four case studies located in the Netherlands—Four Siblings, Le Roy Garden, Mosaic Mowing, and Lok-tuin—to examine what role non-human actors play within the design process. Our analysis centers on identifying at which phases (e.g., concept development, prototyping, implementation, post-implementation) non-human agency manifests more actively, and how designers can encourage or limit this agency.

Key findings indicate that non-human agency is often overlooked in early ideation phases, where non-human entities are mainly considered as an inspiration for designers or an object of research to passively inform the design process. However,

implementation and post-implementation frequently reveal the autonomy of species such as plants and animals, which may alter space conditions in ways that go beyond initial human planning. These shifts can improve ecological functions, enhance biodiversity, and promote inclusive social-ecological interactions. Crucially, our study shows that realizing the potential of non-human agency depends on a designer's willingness to embrace humility, recognizing that non-human actors have their own capacities and agendas. It also requires creating conditions—such as habitat features, nature-friendly materials, and ongoing stewardship—that actively support ecological processes.

By situating these findings in the context of public space planning for inclusion and transformation, this paper contributes to planning theory and practice in several ways. First, it highlights the transformative potential of non-human agency to strengthen social-ecological resilience, encourage equitable coexistence, and nurture shared hope for more sustainable urban futures. Second, it offers actionable insights for landscape architects, urban planners and designers seeking to involve non-human actors alongside human needs. Finally, it indicates how non-human perspectives can be integrated systematically throughout the design and management of public spaces.

Keywords:

Non-Human Agency; Participatory Urban Design; Placemaking; Public Space; Nature-Inclusive Projects.

T_17 PUBLIC SPACE (A) / 1510

Planners and the moral power of the “unpleasant”

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In the last years, aesthetics has paid increasing attention to negative sensations (Berleant's negative aesthetics) and to individual judgements that cannot aspire to universal validity (Saito's everyday aesthetics). The agreeable or pleasant, and especially its converse the unpleasant, have considerable motivating power for action and creativity (Forsey, 2016), despite the limited consideration it received from Kant (1790) in its Third Critique and from mainstream aesthetics afterwards.

For pragmatic aesthetics (Dewey, 1934; Shusterman, 1992), action and not only judgment are part of the aesthetic experience. In *Everyday Aesthetics*, Saito (2007) points out that aesthetic responses “prompt us towards actions such as...repairing things like dilapidated buildings...” Within the categories (the ugly, the disgusting...) relevant for negative aesthetics, the unpleasant is unique in that it has not a disinterested note, does not destroy all aesthetical satisfaction, and does not impel us to reject the object. For Forsey (2016, p.19, 21), the unpleasant “provokes an aesthetic response that is uniquely motivating”, requires a response.

In planning, judgments about the quality of public space open a door towards the ethical-aesthetic connection. In *everyday aesthetics* (Saito, 2007), this applies to issues such as dilapidation or dirt. Such ethical dimension provides a basis to consider such judgments as not purely individual, but open to some kind of “community of others.” The unpleasant arises discomfort and arouses our will for transformative action. It is strengthened by an ethical dimension in our judgment: whereas the merely aesthetical judgement of the unpleasant- as a personal judgment- does not legitimize our action in the public sphere, the addition of the morally wrong does. The aesthetic judgment of the unpleasant complemented with ethical considerations enables collective action, leading to the attainment of small by rewarding wins providing immediate aesthetic satisfaction together with strong ethical symbolism. Ultimately, the aesthetic-ethical connection serves to realize that the urban or rural landscapes are a medium in which power relations are physically revealed.

Contrary to the stability of the ugly, the merely unpleasant sends a message of provisionality, of waiting for our engagement and action. One example is tactical urbanism, especially in street design: the aesthetic perception of a few people moves them into action by highlighting obvious (ethical) inconsistencies through provisional action with some minor painting and cheap street furniture. This does not create a pleasant perception, but rather the opposite: the clear provisionality of tactical interventions serves to expand and universalize the need for (now aesthetic rather ethical based) action, whereas the new (ethical based) power relations, once that the tactical action has established are consolidated.

This presentation illustrates the aesthetic power and ethical dimension of the unpleasant through three cases studies in Madrid, in which the planning response is ethically charged in different ways. The first case study illustrates the tactical urbanism response provided by a street redesign in the south of Madrid (Vallecas, Arboleda street) in which power relations are revealed and transformed. The second case study (Puerta del Sol) shows the accommodation of the public space to the pressure and colonization of touristification, this time changing power relations on the ethical grounds of fostering economic opportunities. The third case study (Green Southwest Boulevard, A-5) shows the successful strategy of blighting through decades of inaction, turning the unpleasant into the socially unbearable, paving the way to the acceptance of the consolidation of the existing power relations (an ethics of respect to the status quo).

Taken together, these case studies show the relevance of the unpleasant as a key aesthetic and also as an ambivalent category, able to unchain different kinds of action, all of them ethically, and not only aesthetically, charged.

Keywords:

planning; ethics; aesthetics; unpleasant; pragmatism

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T_17 PUBLIC SPACE (A) / 270

Assessing Perceptual Differences Between Residents and Tourists in Urban Street Walking Environments: Towards a Balanced Public Space Design

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Public spaces have always played a central role in shaping vibrant urban experiences. As the primary venues for residents' daily public activities, city streets offer multiple functions, including commuting, leisure, socializing, and exercise (Hassen & Kaufman, 2016). High-quality street environments not only improve residents' health and quality of life but also directly affect urban livability and community vitality (Hornýák et al., 2023). At the same time, streets serve as important urban tourism attractions (Qi et al., 2022; Chen et al., 2022). By walking through city streets, tourists immerse themselves in local

visual landscapes and cultural atmospheres, interacting with the environment and enhancing their travel experience. Especially in the post-pandemic era, as global tourism recovers and “urban walking” gains popularity, the quality of street environments has become a critical factor influencing tourist experiences (UNWTO, 2024; Wu, 2023). Given that most journeys are on foot, further investigation into perceived walkability of the street environment is urgently needed. Existing research on street environment perception has predominantly focused on residents, particularly specific groups such as the elderly or children, with relatively limited attention to differences between tourists and residents in street environment evaluations. Moreover, traditional methods (e.g., questionnaires and walking diaries) are often time-consuming and labor-intensive, making large-scale urban applications challenging. This study develops an innovative approach to more broadly and accurately evaluate how urban street environments influence walking perceptions among residents and tourists, while also analyzing the similarities and differences in their perceptions. Subsequently, we explore key factors driving these perceptual discrepancies and propose design strategies and guidelines to enhance urban street walkability. This evaluation method consists of three steps. First, we use OpenStreetMap road network data and ArcGIS to generate street sampling points and obtain corresponding street-view images, forming a comprehensive base dataset. Second, we recruit volunteers to provide walkability ratings for a subset of these images, creating a training dataset to feed a random forest model that predicts walkability scores for all street images in the study area, accompanied by a spatial pattern analysis. Third, by applying image semantic segmentation, we extract street elements and integrate them with built environment features and perceived walkability scores using elastic regression, thereby identifying crucial factors influencing the differences in perceptions between residents and tourists. Considering factors such as residential density and tourist numbers, we select the Ming City District of Xi'an as our empirical study area. Enclosed by ancient city walls, this district functions both as a tourist destination (receiving 211,000 visitors over five days during holiday periods) and as a residential area of approximately 306,000 permanent inhabitants (as of 2022). This research is part of an ongoing project, and a comprehensive review of the data is still in progress. We anticipate that the findings will reveal significant differences in residents' and tourists' perceptions of walking environments and elucidate key factors contributing to these variations. By focusing on these perceptual differences, this study aims to highlight the complexity of dynamic urban flows and provide valuable insights for urban planners and policymakers. Ultimately, we seek to design inclusive and walkable public spaces that simultaneously satisfy residents' needs and enhance the tourist experience.

Keywords:

Street view image; Semantic segmentation; Elastic network regression

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Migration and Public Space: Inclusion and Exclusion in Martim Moniz Square through Urban Policy and Design

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Urban public spaces, which naturally draw diverse users and activities, remain a key topic of discussion, especially as migration and urban unpredictability continue to rise. Theories on public space highlight the importance of social interactions in all urban environments, including superdiverse examples. However, particularly in ethnically diverse, disadvantaged communities, urban policy and design tools aimed at addressing the complexities of diversity and socio-spatial inequalities are often insufficient. For this, details of everyday use and actual users of urban public spaces that are attracting diverse populations to foster inclusion in public space.

At the intersection of urban public space and migration, this paper focuses on Martim Moniz Square located in a highly diversely populated neighborhood in Lisbon. Almost 90 different nationalities are mentioned to live in the area. The rhythm of everyday life in this area sets it apart from other parts of central Lisbon. The businesses and activities in the square are primarily run by non-Western communities, attracting a diverse crowd for work, leisure, and social interactions. Martim Moniz Square exemplifies city's multicultural identity by serving as a dynamic urban square and center where history, culture, and modernity come together, making it a distinctive site. The square's evolution reflects periods of urban renewal, various master plans, design competitions and influences from both modernist and postmodern design, accompanied by debates over privatization. In 2020, a participatory project for Martim Moniz resulted in an international urban design initiative envisioning a "world garden" in the square. However, these efforts coexist with persistent socio-political challenges, as the square has recently become a focal point for xenophobic incidents, racist rhetoric, and public protests against such exclusionary behaviors. This juxtaposition highlights the tensions between urban renewal efforts and the area's complex social realities.

To critically explore the concept of micro-publics, as discussed by Amin (2002), this study evaluates the everyday use patterns, spontaneous appropriation, group behaviour and created borders within the physical space of Martim Moniz Square through an ethnographic lens for which a field study has been realized. The square reveals a tension between modern and traditional notions of public space, challenging static or stereotypical definitions, while also highlighting its role as migrant infrastructure. The main findings discuss the diverse meanings and potential of public spaces within migration context, highlighting its ordinary role and power to stimulate socio-spatial patterns in everyday life, beyond predetermined design and planning solutions.

Keywords:

public space; migration; Lisbon; micro-publics; diversity; inclusion; exclusion

T.17 PUBLIC SPACE (A) / 1382

Recreational Vitality Measurement and Enhancement Strategies for High-Speed Rail Hub Areas under the Station-City Integration Framework: A Case Study of Hongqiao Business District

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Against the backdrop of global sustainable development, China has proposed the concept of “Station-City Integration,” aiming to promote the functional integration of cities and high-speed rail (HSR) hub areas, attract foot traffic, and create new urban vitality centers. As a sub-center of Shanghai, the Hongqiao Business District serves as a high-level urban public activity center.

However, China’s HSR hub areas are predominantly characterized by strong transportation attributes, which weaken their commercial and residential service appeal, and caused a core issue persists: despite their designation as new urban public activity centers, local residents exhibit low activity frequency, resulting in weak recreational vitality.

This study takes Hongqiao Business District as an example to explore the recreational vitality of HSR hub areas from the spatiotemporal behavior perspective of recreational populations, focusing on the urban contribution to foot traffic in these areas. Recreational populations are defined as those who stay within the district’s public activity center for over one hour. By examining their spatiotemporal behavior characteristics, this study identifies recreational demands and provides targeted strategies for enhancing public activity facilities in HSR hub areas.

(1) Measurement of Recreational Vitality in Hongqiao Business District

By using mobile signal data, the study identifies the origin-destination distribution and spatiotemporal characteristics of the recreational population. The service area of public activities within the hub is delineated, and recreational vitality is measured. The recreational activity volume at each base station is calculated, weighted by the duration of stays—higher activity volumes indicate longer and more frequent stays.

(2) Recreational Characteristics and Influencing Mechanisms of Local Residents

The study identifies the resident population within the service area and analyzes their spatiotemporal behavior characteristics. A residential-recreational functional network is constructed, and the recreational vitality of public activity centers is measured as the dependent variable. Independent variables include land use, service facilities, spatial connections, and development intensity, derived from the strength and direction of network’s edge. A regression model is built to analyze the formation and influencing mechanisms of the residential-recreational network.

Field surveys are conducted to investigate the travel and activity patterns of residents within the service area. Travel logs capture outdoor mobility information; Activity logs provide insights into indoor activities and multi-purpose trips; And time-use logs detail indoor activities and the “stages” constituting travel. Questionnaire surveys further refine the findings from big data analysis, enabling a more sophisticated study of residents’ spatiotemporal behavior characteristics.

(3) Strategies for Enhancing Recreational Vitality in Hongqiao Business District

Perspective of Residents: Enhance the functional richness of high-speed rail hub areas to strengthen their core competitiveness as urban functional nodes. Optimize the provision of living service facilities within the high-speed rail hub areas to satisfy the diverse travel demands of local residents.

Perspective of Space: Promote integrated land-use development in and around high-speed rail hub areas, emphasizing three-dimensional development of public activity centers, both above and below ground. Additionally, establish a well-connected slow-traffic network to improve spatial organization.

Perspective of Connectivity: Enhance the public transport and pedestrian accessibility of high-speed rail hub areas and associated public activity centers, ensuring arrival and entry for residents.

This study analyzes the activity characteristics of residents in HSR hub areas from a spatiotemporal behavior perspective, investigates the influencing mechanisms of recreational vitality, and proposes strategies to enhance vitality from 3 dimensions: urban areas, station areas, and station-city areas. The findings enrich the theoretical framework of urban vitality studies, provide practical references for the development of public activity centers in HSR hub areas, and optimize the interaction between station and city. Ultimately, the study offers insights into the evolution of station-city relationships and contributes to the theoretical advancement of station-city integration.

Keywords:

Station-City Integration; Recreational Vitality; Spatiotemporal Behavior; Residential-Recreational Network;

T_17 PUBLIC SPACE (A) / 1370

Contribution of Urban Parks to Exercise Habits in Istanbul

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Daily physical activity is essential for a healthy society. In recent years, exercise habits have diversified, with people working out at home, in gyms, and in open public spaces. However, not everyone has the time or financial resources to go to the gym, and increasingly smaller homes often lack the space for indoor exercise. As a result, governments must implement public policies that promote active living to support healthy aging for all. As a guide, the World Health Organization has published a global action plan on physical activity, stating that increasing green and blue spaces boosts active living. In this context, urban parks, with their spatial and infrastructural features, offer great potential for promoting exercise. Despite their benefits, urban parks do not always serve as effective exercise spaces. Factors such as inadequate sports facilities, lack of security, poor accessibility, noise, and overcrowding can discourage people from using them. Therefore, understanding the motivations behind park usage is key to assessing whether parks encourage physical activity and identifying areas for improvement.

This paper investigates to what extent public spaces in Istanbul contribute to public health through exercising and how fair distribution is ensured within the framework of physical activity. To achieve this, an analytical framework was developed, incorporating four key components: (i) spatial attributes of urban parks, (ii) socio-economic characteristics of districts, (iii) exercise habits of residents, and (iv) park usage tendencies, derived from open-source and Volunteered Geographic Information (VGI) data. The study relies on multiple data sources, including survey results from the Data-Based Management Model (VDYM) of Istanbul Metropolitan Municipality (IMM), Google Map reviews, socio-economic data of districts, and sports infrastructure information from the IMM Open Data Portal. The methodology was carried out in two stages, using GIS based mapping for visualization, text mining and correlation analysis. In the first stage, the largest urban parks in each district, along with their available sports facilities and the socio-economic status were identified. These results were then mapped in a GIS environment to visualize spatial relationships. The second stage focused on exploring residents' exercise habits and park usage preferences. The VDYM survey provided data on how frequently residents exercise, presenting the average number of workout days per week for each district. Additionally, Google Map reviews from July 1, 2021—when COVID-19 restrictions were lifted in Türkiye—were collected for each park, using the Apify Data Scraping environment. A word frequency analysis was conducted with Orange Data Mining to identify exercise-related terms in park reviews. These results were then compared with district-level exercise rates using correlation analysis to determine whether urban green

spaces contribute to physical activity. With this work, more than 70,000 comments were evaluated by utilizing a text-mining method for urban parks in Istanbul. This paper provides valuable insights into park usage patterns in Istanbul. By utilizing this methodology, challenging areas in Istanbul can be detected more rapidly and implementing policies becomes more cost-effective for municipalities when compared with traditional methods. The effective use of VGI and open-source data helps to assess more precisely the deficiencies/potential of parks and create a roadmap for a healthy society.

Keywords:

green exercise; text mining; urban green; Google Map reviews; Istanbul

T_17 PUBLIC SPACE (A) / 1538

Enhancing urban resilience: the role of open spaces in mitigating Urban heat islands

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Open spaces inner cities are having a crucial role in reducing the negative effects of urban heat islands (UHIs) in cities, creating conditions for easier sustainable commuting people inner cities. Green areas, such as parks, urban forests in cities are providing cooling effects and help to lower the temperature in urban climate by providing shade and facilitating evapotranspiration (Gherri, 2024). High vegetation in open areas inner cities improve the quality of air by absorbing pollutant and releasing oxygen and at the same time enhance urban biodiversity enabling ecological balance for improving healthier urban environment (Yuan, 2024).

Europe is the continent experiencing the most rapid warming, with temperatures increasing at twice the global average rate. The summer of 2024 was recorded as the hottest on record, according to the Copernicus Climate Change Service (C3S, 2024), resulting in detrimental effects on public health, urban functionality, natural ecosystems, and the economy (Heaviside et al., 2017; Karimi et al., 2023; Ramly et al., 2024).

Recognizing that European cities are among the most vulnerable to the UHI's negative effects, 19 partners including 10 cities from 12 countries of the Danube microregion to jointly develop solutions for reducing the negative effects of the UHI through the Be Ready project co-financed by the INTERREG Danube Programme (Be Ready, 2024). The main aim of the project is to collaboratively co-develop strategies to enhance climate change preparedness and resilience of 10 participating cities, Chisinau (Moldova), Galati (Romania), Heviz (Hungary), Kranj (Slovenia), Niš (Serbia), Podgorica (Montenegro), Ratibor (Czech Republic), Sofia (Bulgaria), Zenica (Bosnia and Herzegovina), and Varaždin (Croatia).

The Urban Heat Island (UHI) effect is a well-documented phenomenon wherein urban areas experience elevated temperatures relative to their rural surroundings (Oke, 2011). Urbanisation processes were leading toward loss of pervious areas and increasing build-up and impervious areas. Different construction materials have higher capacities of absorbing heat compared to natural materials and emitting it into the urban climate, especially during the night, and contributing conditions to the UHI.

The lack of holistic methods and tools for assessing urban areas vulnerable to the UHI negative effects was leading scientific partners involved in the Be Ready project (BOKU, UIRS, STUBA and Science and Technology Park Niš) to develop a methodological approach and an assessment tool easy to use for cities on different levels, city, district and neighbourhood level from different aspects. One of the aspects is devoted to the build environment with surrounding. Urban form, green urban spaces and vegetation were two criteria proposed for assessing the urban environment allowing to identify risk zones inner cities including open spaces. The paper aims to identify opportunities and

barriers of existing data for the risk assessment, drivers of the UHI on open spaces and opportunities for developing strategies and interventions for reducing UHI negative effects.

The results of the assessment will contribute understanding to the role and potentials of open spaces to mitigate UHI negative effects, enabling better urban planning, policy development, strategies, development and efficient implementation of interventions in cities.

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Keywords:

open spaces; urban heat island; climate change; urban resilience; cities

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T_17 PUBLIC SPACE (A) / 1580

Social Networks and Public Space Appropriations: Insights from Informal Street Vendors and Performers

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This study subjects the appropriation practices of informal street vendors and performers (ISVP) who take part in the routine of urban life within the context of territorialization in public space. Beyond the realm of urban management, the appropriation practices of ISVP hold importance in challenging and reshaping existing socio-spatial systems. Multiple factors shape such practices, including the material setting of urban space, representative daily interactions, and the reorganization of power relations.

In this context, as a self-regulating practice, urban space appropriation has constantly changing character due to the interplay of conflicts such as “order/disorder, formal/informal, legal/illegal and local/global.

Besides these, ISVP appropriation practices are at the forefront due to the features of

duration and repetition. A street vendor or performer performs actions with a certain pace, period, or repetition. The same person becomes a part of the rhythm of daily life in the same place in similar ways each day. Urbanites are constantly confronted with the practices of appropriation. By appearing along the everyday experiences of the city, like the rush hour of comings and goings of work, the periodic arrivals and departures of public transport, street markets, crowded match exits, public performances, and mealtime pauses; ISVP contribute to the everyday pattern of the city.

From this view, the study investigates how informal street vendors and performers built social networks as they engaged with and negotiated in public spaces. For this purpose, the case study is conducted in the Istanbul district of Kadıköy and adopts a spatial ethnography approach combined with social network analysis to offer an inclusive lens on public space, bringing the experiences of underrepresented groups to the forefront. To answer the research question, spatial and temporal data were gathered through field observations, during which semi-structured interviews were conducted, and visual and auditory documentation was collected.

Initially, the spatial characteristics and time intervals of appropriation practices were documented. Following this, the clustering patterns of distributions were identified. Afterward, in selected clusters, interviews were conducted with ISVP to explore their interactions and relationships with residents, shop owners, and others working informally. Based on these interviews, social network analyses were performed using Gephi software. The findings were then compared with the responses to open-ended questions and the spatio-temporal distributions.

The findings show that appropriation practices consist of place-based identities by locally organized groups. Accordingly, territories of ISVP are part of or based on a local setting, which contributes to the sense of place for residents, shop owners, and people who work informally. When an appropriation is based on repetition and provides continuity for a long time, it helps the development of permanent relationships. Informal street vendors and performers working downtown for a long time have been acquainted with the residents and former business owners. They get help from formal business owners and share their territory with them from time to time. Over time, the sharement is embodied in local communication points, contributing to local identity.

As a result, this study is believed to contribute to the discipline of urban design by linking the spatiotemporal rhythms of informal appropriation practices with the underlying social dynamics in a local context. By highlighting how everyday negotiations and power relations shape public spaces, our findings underscore the transformative potential of grassroots practices in fostering more inclusive and meaningful urban environments.

Keywords:

Urban space appropriation; street vendors; social network analysis; urban design

T_17 PUBLIC SPACE (A) / 1596

Medellín's Social Urbanism: Analysing the Urban Planning Concepts and Multiple Narratives of a Policy Paradigm Shift

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Over the past three decades, the city has transformed from the most dangerous city in the world to a globally celebrated example of integrating social inclusion into urban

transformation. This study explores Medellín's Social Urbanism as a transformative urban planning paradigm shift, accommodating multiple narratives while adapting to an ever-evolving reality. Social Urbanism is characterised by participatory planning, equitable public space design, and bold, innovative solutions prioritising social infrastructure in the most vulnerable neighbourhoods. Drawing from the theoretical framework of policy paradigm shifts and multiple discourse analysis, this research examines the concept's elasticity in accommodating diverse narratives while aiming for continuity in its transformations across political terms. The case study research includes observational photography, mapping and expert interviews with key stakeholders to capture the interplay between governance, design, and community dynamics.

Medellín's sustained efforts demonstrate significant agility and resilience in pursuing social innovation by responding with adaptive narratives of one transformative concept. Successive city councils promote projects with differing characteristics, such as target groups, locations, and scales, reflecting evolving narratives. Some projects persist across administrations, such as the well-known cable cars, a flagship project that reconnects informal settlements to the formal city. Other projects fluctuate with political currents, creating opportunities to incorporate increasing challenges like ecology, climate adaptation, and active mobility modes.

The findings reveal that Social Urbanism was not a pre-thought model but a resulting synthesis, with urban projects evolving through five distinct eras, each characterised by differing focuses and responses to evolving urban challenges. Perceptions of more recent policies suggest that the paradigm shift is at risk, with a potential reversion to narratives of repression and symptom control, instead of continued bold infrastructural projects, thereby threatening to undermine ongoing efforts to reduce poverty, conflict, and inequality.

However, this article underscores Medellín's significance as a global reference for policy mobility, identifying critical insights for cities in diverse contexts seeking to replicate or adapt Social Urbanism principles. Importantly, interviewed experts emphasise the uniqueness of Medellín's profound challenges and strong responses within the city's unique historical and sociopolitical context. Thus, the concept's transferability lies not in replicating Medellín's solutions but in drawing inspiration from the city's transformative power, characterised by academic capacity building, international knowledge exchange, visionary and bold political leadership, prioritisation of efforts in critical neighbourhoods, a robust participatory approach, and intense collaboration with resourceful institutions.

Ultimately, this work contributes to the discourse on urban resilience and equity, emphasising the role of transformative urban policies in addressing the multifaceted crises of contemporary cities. By unpacking the layered narratives of Social Urbanism and confronting them with the mapping of the implemented urban projects, the study provides a nuanced understanding of how paradigm shifts can redefine urban futures, even in agile, conflictual, and contested contexts.

Keywords:

Social Urbanism, Medellín, Policy Paradigm Shift, Multiple Narrative Analysis

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T.17 PUBLIC SPACE (A) / 1643

Spes non confundit. Hope does not disappoint. Transformative potential of Jubilee public spaces in Rome.

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Public spaces have always played a central role in shaping urban quality providing a range of socially valuable services. However, in an age of growing social inequalities, environmental challenges and political polarization, the question of how public spaces can foster inclusion, equity and positive change becomes more critical than ever. Public spaces have the potential to inspire hope by regaining a role to integrate multiple layers and functions.

The paper explores some of the public projects currently underway in Rome for the Jubilee year 2025. The Jubilee of Hope is expected to attract 35 million people over the duration of 2025. The event started in January and goes through December 2025. In Rome History “...the Jubilee has always been an event of great spiritual, ecclesial, and social significance in the life of the Church...The faithful...draw from the spiritual treasury of the Church by passing through the Holy Door.... Down the centuries, millions upon millions of pilgrims have journeyed to these sacred places, bearing living witness to the faith professed in every age... Pope Francis Letter).

Rome is preparing this event with significant interventions aimed at improving the quality of the infrastructures, the visitor facilities and the cultural and the tourist offer. The Jubilee public projects are a wide range of interventions types (600): squares and public spaces, infrastructures, tram tracks, bike lanes. These are just some of hundreds of improvements to Rome that were planned in conjunction with the Jubilee Year: a new pedestrian square and walkway connecting Rome’s historic center to the Vatican. Piazza Pia, the square in front of St. John Lateran archbasilica with ground-level fountains for summer-heat mitigation, the renovations around Rome’s major Termini Train Station, Trevi Fountain. The ambitious undertaking at Piazza Pia in front of the Vatican converted one of the area’s busiest roads to an underpass, allowing pilgrims to walk freely in the space from Castel Sant’Angelo down to St. Peter’s Basilica. The public square at Piazza Pia is now car-free area full of benches, trees, as well as two fountains. Another renewed space close to Vatican City was Ottaviano Street and Risorgimento Square. The street and square, located to the north of the Vatican walls in between St. Peter’s Square and the entrance to the Vatican Museums, are some of the first-place people see after emerging from the subway stop closest to the Vatican. Some of the projects are improvements that will benefit locals such as: a new bicycle path connecting the area south of the Vatican to an existing walkway in Monte Ciocchi Park, the pedestrian-and-biking path along the banks of the Tiber River. Some smaller upgrades are the re-pavement of streets, updated street lighting and new buses and trams, a pedestrian bridge and path connecting the station to the Vatican basilica.

The paper explores the potential of these new spaces on assembling and recombining

different elements to structure the contemporary fragmented city. The paper presents preliminary result of an ongoing research project, dealing with recent processes of public space development in Rome's metropolitan area.

References:

- [illegible]

Keywords:

public space; hope; transformation;

T 17 PUBLIC SPACE (A) / 1720

Mapping, evaluating and planning historic public spaces in small towns: Borgarnes, Iceland, as a case study.

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As part of the European project “Human Cities-SMOTIES: Creative Works with Small and Remote Places,” Alternance Architecture and Urban Planning, in collaboration with the Faculty of Planning and Design at the Agricultural University of Iceland, conducted a project on historic public spaces in the small town of Borgarnes, Iceland.

Titled “Sögötorgin” (Historic Squares), it aimed to design a preliminary plan to enhance historic public spaces in the town’s oldest district. In recent decades, this area had been affected by the relocation of activities to a new town center along the country’s main road. Today, the historic city center contains many abandoned or temporarily used buildings. It also suffers from a lack of quality public spaces, most of which are currently poorly planned or designed for cars.

The overall objective of “Sögutorgin” was to contribute to the revitalization of the old town through the enhancement of historic public spaces. It also aimed to test and develop methods for mapping, evaluating, and planning historic public spaces in collaboration with local communities.

For the sustainable regeneration of small towns, developing public spaces is crucial, and heritage is undoubtedly an asset. Research on sense of place and place attachment shows how strongly people connect with heritage, which in turn enhances the livability of communities. Moreover, studies on cultural tourism and urban regeneration emphasize the economic value of heritage. Therefore, improving historic public spaces is a

valuable strategy for developing the quality of life in small towns.

Undertaken between 2021 and 2024, the project progressed through several stages, from site analysis to the preliminary design of public spaces. It involved collaboration among specialists in the human sciences (history and environmental psychology), planning, and urban design. The project employed methods from these disciplines and fostered continuous dialogue between researchers in the human sciences and designers, ensuring a seamless connection between site analysis and design.

Initially, the team conducted research to map historic public spaces and identify those with significant development potential. Methods from urban morphology and urban design (concept of Imageability), along with a sensitive map created by the residents' association in 2021, were used to map these spaces and identify those conducive to a positive sense of place. Several public spaces were highlighted for their historical and environmental significance, the presence of key activities, and their importance to the local community.

The selected public spaces were then assessed to identify areas for improvement. The evaluation involved field surveys to analyze users behavior patterns and the quality of the spaces (Quality Criteria Index), as well as surveys to gather insights on how the local community experienced them and what were their expectations.

Finally, the team undertook the preliminary design of these public spaces with the active participation of residents and other stakeholders. Several information meetings, exhibitions, co-design workshops and one-on-one meetings were organized to engage the local population in the creative process and ensure that the preliminary design was grounded in the community's values.

The interdisciplinary approach and the use of mixed methods for mapping, evaluating, and designing historic public spaces are promising. Regarding those used for public participation, the results indicate that they have been successful in several ways. For example, the 3D presentation played a crucial role in improving participants' understanding of the plan, and it also made them feel more involved in shaping its underlying assumptions. Furthermore, the participants expressed their willingness to support other planning projects using a similar participatory process. On the other hand, the results also show that there is still room to bring together disparate interest groups and expand their opportunities to contribute to the design of public spaces.

Keywords:

Historic public spaces; small towns; heritage

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T.17 PUBLIC SPACE (A) / 1764

Empowering the Disempowered? Hawkers' Self-Empowerment and Self-mobilised, Community-led Plan-making in Hong

Kong

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Public spaces, including (in)formal temporary hawker bazaars on publicly owned land, serve as important sites for transformative urban changes and inclusive community-building. This paper examines the Saving Pang Jai Campaign, a self-mobilised, community-led planning initiative in Hong Kong in the mid-2010s that sought to preserve and reimagine the Yen Chow Street Temporary Hawker Bazaar (Pang Jai), a 44-year-old (in)formal temporary fabric market facing demolition.

In the mid-2010s, Pang Jai bazaar was proposed for demolition to make way for public housing under the city's housing shortage crisis. From the government's perspective, the bazaar was a public space temporarily designated for fabric trading for 44 years. From a bottom-up perspective, however, it was a lived 'community commons', where hawking accumulated social capital and fostered connections between fabric-related industries and the wider community. These social values underpinned the Saving Pang Jai Campaign, which sought to explore alternative futures for the bazaar. Through participatory planning workshops and collaborative advocacy, hawkers, many of whom were unlicensed and excluded from formal decision-making on the bazaar's demolition or relocation, co-developed an alternative vision, and reimagining the bazaar as a 'commons' for fabric trading and other disadvantaged communities in the surrounding neighbourhood, addressing broader communal needs in the community level.

Drawing on interviews and observations conducted in 2019, this study analyses how non-institutionalised planning processes empower marginalised and disempowered urban actors like hawkers to dream the community futures. It argues that community-led planning enables hawkers to assert their rights by leveraging place-based knowledge, expanding social networks and collectively shaping urban futures beyond state-defined planning frameworks. The self-mobilised community plan also served as an 'intellectual commons' within the hawker community, fostering a more stakeholder-inclusive fabric market space. The campaign not only contested top-down redevelopment but also illustrated how informal public spaces can be sites of hope, fostering social resilience and alternative economic possibilities with hope.

By situating Pang Jai's plan-making experience within debates on self-empowerment and community-led planning, this paper highlights the transformative potential of grassroots urbanism in resisting dispossession and turning 'dystopian outcomes' into community assets. Although the market was forcibly relocated to a formalised market by the government in January 2023 and the community plan was ultimately disregarded, Pang Jai's legacy and its stakeholders offer valuable lessons for urban planners on engaging with 'informal' and 'temporary' spaces. Despite Pang Jai's unsuccessful attempt to turn the plan into implementation, it contributes to conversations on how informal spaces, often overlooked in planning, can serve as catalysts for inclusive and sustainable urban transformation.

Keywords:

community-led planning; empowerment; informal economies; social justice; Hong Kong

T_17 PUBLIC SPACE (A) / 1895

Rethinking the Urban Periphery: A Theoretical Matrix of Nuanced Urban Regeneration Models Exemplified in Post-Socialist Urban Spaces of Belgrade

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The contemporary urban paradigm is undergoing a significant shift from traditional design standards to more flexible, context-sensitive, and participatory approaches, especially in response to challenges arising from the COVID-19 pandemic. In this evolving context, urban regeneration strategies necessitate a reconsideration, particularly in post-socialist cities where public spaces frequently fail to address the socio-spatial complexities found in peripheral areas.

This study investigates the evolving notion of the urban periphery—not merely as a geographic boundary, but as a multi-faceted socio-cultural construct shaped by historical transformations, economic fluctuations, and the appropriation and management of public space through urban design. Peripheral urban public spaces, often perceived as residual or marginal, are identified as critical sites for rethinking contemporary regeneration practices. These spaces are characterised by heterogeneity and are not uniformly disadvantaged; instead, they embody diverse urban conditions shaped by distinct cultural interpretations of publicness, accessibility, and social interaction.

Drawing upon comparative literature and case studies, this research emphasises the imperative to transcend outdated centre-periphery dichotomies and adopt nuanced regeneration models that prioritise spatial justice, inclusivity, and long-term resilience. To this end, a variety of open public spaces within the urban fabric of Belgrade (Serbia) have been systematically identified and mapped as peripheral public spaces. These locations illustrate varying types of open public areas based on morphological and qualitative indicators, encompassing the specific size of urban pockets and their liminal positions within pedestrian networks across diverse functional zones, ranging from the neighbourhood and social spaces to transport infrastructure.

The analysis critically examines existing approaches in the literature and practice to evaluate the role of urban design in the regeneration of peripheral spaces. It identifies different topics across several frameworks, including cognitive patterns within psychological approaches, place-based strategies, cultural and creative industries, local collective action initiatives, tactical urbanism, and principles of proximity. The key concepts of these approaches are exemplified within a post-socialist context, where fragmented urban structures and socio-economic disparities pose significant challenges to conventional planning paradigms.

This research introduces a matrix that connects empirically observed spaces with theoretical frameworks, offering guidelines for enhancing fragmented areas through more refined regeneration models. Furthermore, it underscores the necessity of shifting focus from large-scale projects to micro-scale interventions aimed at improving the everyday usability of public spaces, thus fostering increased community engagement and promoting long-term adaptability.

The findings indicate that effective urban regeneration models must incorporate hybrid approaches that balance top-down policies with bottom-up initiatives, thereby facilitating public-private-civic collaborations. By delineating various methodologies and case studies, this study contributes to a more comprehensive understanding of how peripheral urban spaces can function as catalysts for equitable and sustainable urban transformation. In conclusion, this research advocates for a paradigm shift in urban planning that acknowledges the regenerative potential of peripheral public spaces, reconceptualising them from overlooked margins into dynamic nodes of urban life, particularly within the context of post-socialist environments.

Keywords:

urban periphery; public space; urban regeneration; urban space quality; post-socialist

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T_17 PUBLIC SPACE (A) / 1369

Public Drinking as a Transformative Practice of Placemaking

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Global economic instabilities are causing various changes in individuals' daily lives, and public space is also being affected by these transformations. One of these transformations is the evolving practices of alcohol consumption, influenced by both rising alcohol prices and the search for alternative social gatherings. Public drinking is not just about consuming alcohol; it is also a form of placemaking. This practice reshapes public space and challenges traditional boundaries of urban life. It serves as an intermediary institution, enabling people from different income groups and ages to gather and engage in social interaction, thereby transforming streets from mere transit routes into socially engaging environments.

Within the scope of this study, the concept of public drinking, which has become more prevalent in recent years, is examined through the lens of “**heterotopia**” (Foucault & Miskowiec, 1986) and “**third place**” (Oldenburg, 1989) theories to explore how it creates another space. To achieve this objective, two streets in Istanbul, catering to different income groups on both the European and Asian sides of the city, were observed to understand why they are preferred for public drinking. The study examines how spatial attributes direct the occurrence of group behaviors and explores which characteristics of these streets align with being third places and heterotopias. Observations were conducted during different seasons—winter, spring, and summer—and at various time intervals to account for the temporal and seasonal effects on behaviors in both cases.

In the initial stage of the study, Ahmet Fetğari Street, located on the European side near Nişantaşı, was examined. This area is predominantly frequented by individuals aged 25–35 and is characterized by a mainstream socio-economic profile. This street is used as a gathering space by this particular group even during the daytime. However, due to the recent opening of an all-day drinking venue, an evening pattern of purchasing drinks from the venue and spilling out into the street, forming groups on the sidewalks, has emerged. The desire to generate social capital by being seen on the street, along with drinking, has transformed the space.

In contrast, the second street examined is Dr. İhsan Ünlüer Street on the Asian side, which is frequently visited by students and others of all ages for pre-drinking, especially

due to its proximity to a bar district. A nearby convenience kiosk sells alcohol, and groups that cannot afford to drink in the bars but still want to enjoy the music or be part of the community gather on the street. The absence of a designated sidewalk results in groups spilling into the roadway, forming spatial patterns influenced by proximity to the kiosk. Furthermore, the practice of drinking on the street extends to the stairs of nearby apartment buildings. Transforming from a mere transit route into a gathering space for disadvantaged groups and ensuring spatial justice, the street also invades the semi-public areas of residents, causing disturbances. This dual function underscores the street's evolution into a heterotopia, reflecting the intersection of social, economic, and spatial contradictions.

In conclusion, through public drinking, these streets become 'third places' and 'heterotopias'. This practice fosters communication and reinforces social capital (Bourdieu, 1986) through lowered inhibitions associated with intoxication and a shared sense of group identity. While Ahmet Fetgari Street exemplifies mainstream visibility and social prestige, Dr. İhsan Ünlüer Street serves as a more accessible and contested urban space. These cases highlight how economic pressures and social dynamics reshape urban environments, positioning them as inclusive and contested spaces. By bridging theories of third place and heterotopia, this study highlights the fluid nature of urban spaces.

Keywords:

public drinking, heterotopia, third place, İstanbul

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T_17 PUBLIC SPACE (A) / 1310

Public Spaces as Catalysts for Spatial Identity: A Case Study of Slovenian Settlements

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This research investigates how public spaces act as catalysts for the formation and evolution of spatial identity within the context of Slovenian settlements. Focusing on the dynamic interplay between historical and contemporary urban development, the study examines how the design, use and social significance of public spaces contribute to, and are influenced by, the nation's unique cultural identity.

Beyond the traditional focus on architectural styles, this research expands the scope to encompass the multi-layered influences of contemporary processes such as globalization and socio-economic transformations on the built environment, with a particular emphasis on how these forces have shaped the character and function of public spaces. Recognizing that public spaces can serve as powerful tools for strengthening social inclusion, environmental sustainability and community resilience, this research explores how they can contribute to a more hopeful and equitable future for Slovenian settlements.

To achieve this, the research employs a multi-faceted methodological approach that combines rigorous quantitative analysis with qualitative insights. A key component is

the “Mappi Method,” a novel approach utilizing Geographic Information Systems (GIS) to analyze spatial patterns in detail. By examining various settlement typologies ranging from small villages to large cities, the research focuses on analyzing key morphological characteristics, including building types, densities, street patterns, uses and distribution of greenery, to understand the interplay between the spatial identity and urban form defined by the characteristics of its public open spaces.

These in-depth analyses, complemented by in-situ observations, historical document analysis and interviews with locals, aim to identify the distinctive spatial signatures that characterize Slovenian settlements and to understand how public spaces contribute to these unique identities. Beyond mere description, the research delves into the underlying socio-economic, cultural and historical processes that have shaped the evolution of public spaces in Slovenian settlements. It investigates the interplay between local traditions, external influences and the impact of key historical events on the design, use and social significance of public spaces. By examining how these factors have interacted with the physical landscape and existing built environment, the research seeks to understand the complex forces that have shaped the character of public spaces and their role in establishing a strong sense of place within Slovenian settlements.

By identifying the essential role of public spaces in shaping Slovenian spatial identity, the research will provide valuable insights for spatial professionals in developing strategies for future urban development that prioritize the creation and revitalization of high-quality public spaces. The research findings will inform the development of evidence-based guidelines for sustainable urban development, with a particular focus on integrating the principles of inclusive and equitable public space design into national and local spatial planning policies.

By applying the innovative and widely applicable “Mappi Method” and the research framework developed in this study to other cultural contexts, the research aims to contribute to a more informed understanding of how public spaces, as integral components of the urban fabric, shape cultural identity. By emphasizing the critical role of public spaces in establishing a sense of place, has a clear human-centered approach while applying a morphological principle, thus offering a vision of hopeful urban futures where public spaces serve as catalysts for positive change.

Keywords:

spatial identity; urban morphology; public space; identity by design

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T_17 PUBLIC SPACE (A) / 1159

Exploring Meanings and Experiences of Public Spaces: Topic Modeling Insights from Museum Gazhane

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Public spaces have always constituted a fundamental component of urban life, providing a platform for social interaction, cultural expression, and the formation of collective identity. They function as both material and symbolic environments for community activities, serving as sites where individuals construct and share meanings through their experiences. This study focuses on the symbolic and experiential meanings of public spaces by examining how Museum Gazhane -historically known as Hasanpasa Gasworks- is perceived and interpreted by its users.

Museum Gazhane stands out as a critical case due to its transformation from an industrial heritage site into a vibrant public space, the challenges and opportunities of preserving historical significance while addressing contemporary urban needs. The conservation and restoration of the Hasanpasa Gasworks which is one of the important industrial heritages of Istanbul, initiated as a neighborhood-based collective movement, evolved over time under the influence of several institutional actors. The site has been refunctionalized as 'culture-art-oriented living space' and reintroduced to public use under the name 'Museum Gazhane' by the Istanbul Metropolitan Municipality (IMM) in 2021. The evolution of Museum Gazhane from a grassroots-driven initiative to a municipally-led project highlights the dynamic interplay between community efforts and institutional interventions in shaping symbolic and experiential meanings of public spaces.

The study employs a dataset of 3,025 Google Maps user reviews, collected via the Google Maps Reviews API (2021–2024), to examine predominant topics representing user perceptions of Museum Gazhane. These user-generated reviews provide valuable insights into the perceived quality, user satisfaction, and symbolic meanings of the site within a societal context. Using text mining and Latent Dirichlet Allocation (LDA) topic modeling, the analysis identifies five dominant themes, including the site's historical significance, its transformation process, and its multifaceted roles as a public space. Further qualitative interpretations of the LDA topics reveal how individual and collective experiences contribute to shaping the symbolic meanings attributed to Museum Gazhane.

The findings draw attention to the potential of insights derived from user reviews to inform the design and management of public spaces, providing valuable input for navigating the complex challenge of balancing the multifaceted roles of public spaces with contemporary urban demands. Museum Gazhane is recognized by its users as a multifaceted public space, with user perception of the space is characterized by a multilayered structure.

Beyond its empirical findings, this study presents an innovative methodological approach to the analysis of user-generated data by integrating analytical and qualitative methods. Through the examination of Google Maps user reviews, it offers a robust framework for uncovering the complex dynamics of public spaces and understanding how public perceptions intersect with broader societal discourses. This dual contribution significantly enhances both theoretical understanding and practical applications in urban studies.

Keywords:

Public space; symbolic meanings; topic modeling; Museum Gazhane

T_17 PUBLIC SPACE (A) / 1165

Utilizing Assembly Areas as Catalysts for Building Resilient Communities

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This research addresses the dynamic transformations and interventions in urban spaces, tackling urban, environmental, ecological, and social challenges. These chal-

allenges often limit the ability of urban residents to influence city planning and design decisions, underscoring the critical need for active civic participation. The concept of the right to the city advocates for residents' direct involvement in decision-making processes centered on public welfare. Public spaces play a vital role in reinforcing urban rights, fostering interpersonal relationships among citizens, and enhancing solidarity. Empowering public spaces thus emerges as a strategic approach to managing crises and cultivating social resilience in urban settings.

The 2023 earthquakes in Turkey highlighted a significant shift in the role of public spaces. Traditionally vibrant in normal circumstances, these spaces became facilitators of community gatherings and promoters of solidarity in the aftermath of the earthquakes. Drawing on these observed experiences, this study aims to design a public program focused on earthquake preparedness—an urgent issue in Istanbul. The program seeks to foster a sense of belonging and strengthen community ties within public spaces. By diversifying scenarios for public space usage, particularly in designated disaster assembly areas, and strengthening connections between individuals and these spaces, the initiative aims to enhance local communities' capacity to respond to crises effectively.

This study proposes a three-module public program titled Meet, Share, and Connect, designed to raise awareness and enhance community readiness. The Meet module facilitates interactions among diverse actors sharing the space, fostering mutual understanding and cooperation. The Share module involves learning programs that bring together residents and experts for mutual education on disaster preparedness and resilience. The Connect module focuses on content related to community-building practices, aimed at ensuring sustained relationships and strengthening the sense of community. Collectively, these modules are designed to foster awareness and drive demand for participation rights in local decision-making mechanisms, enabling neighborhood residents to influence urban policies and practices formulated by local and central authorities.

The program is being implemented as a pilot initiative in Bakırköy Kartaltepe Mahallesi, a neighborhood identified for its strong potential to foster local solidarity. A central component of the program is a participatory disaster simulation game, designed to simulate disaster scenarios. Through this game, residents can explore roles, responsibilities, and decision-making processes in a controlled environment. This approach not only enhances disaster preparedness but also encourages cooperative problem-solving and a shared understanding of local capacities and needs. By promoting collaboration and engagement, the simulation fosters stronger bonds among community members, ensuring that public spaces are actively utilized as hubs of solidarity during crises.

The project outcomes include practical outputs such as board games designed to promote communication among community members and to strengthen their ties with public space(s). Key challenges identified during the project include the limited timeframe for implementation and the necessity of long-term engagement to tailor content for diverse social groups. The findings also emphasize the importance of a gradual handover process from the initiating team to local residents to ensure the sustainability of the initiative. By fostering a sense of belonging, enhancing local interactions, and promoting shared responsibility, the project aims to transform the way individuals relate to and use public spaces.

In conclusion, this study highlights the critical importance of empowering public spaces in building resilient communities capable of navigating crises. By focusing on strengthening local motivations for appropriation and engagement, the initiative seeks to create a replicable model for urban resilience. These methods, emphasizing belonging, community interaction, and shared responsibility, have the potential to be scaled and adapted to other urban areas, demonstrating the transformative power of public spaces in enhancing social resilience.

Keywords:

Public space; assembly areas; right to the city; community resilience

The age-friendly public city: initial reflections of a medium-size city as Bergamo

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It is projected that between 2015 and 2050, the proportion of the world's population over 60 years old will nearly double, rising from 12% to 22%. By 2030, 1 in 6 people worldwide will be aged 60 or older. Consequently, the number of people aged 60 years and over will increase from 1 billion in 2020 to 1.4 billion. By 2050, the global population of people aged 60 years and older is projected to have doubled, reaching 2.1 billion. The number of people aged 80 years or older is expected to triple between 2020 and 2050, reaching 426 million (WHO, 2024).

The demographic trend of aging is a global phenomenon, but it manifests differently across countries. Italy is one of the "oldest" countries in the world, experiencing a much faster aging process compared to the rest of Europe. This phenomenon is even more pronounced in urbanized contexts (Cangialosi, Tronu, Vacca, 2023).

At the same time, in Italy, most people over 65 live in medium-sized cities, they continue to age at home (Aging in Place). The spatial and functional organization of urban areas significantly influences the daily lives of individuals, even in old age, and shapes health trajectories related to longevity. This influence is also evident in public spaces, which can either support or hinder daily practices and life in these spaces.

This paper aims to present the first phase of the research funded by the Next-Generation EU initiative, titled "CASA Aging in Cities-Medium: How Housing Conditions and Urban Spaces Can Reduce or Increase Opportunities for Longevity in Health". The research is developing a multiscalar and interdisciplinary analytical model to explore the role of urban space in promoting healthy aging and neighborhood attachment among older populations. The study focuses on the analysis of an average Italian city, Bergamo, particularly through direct and indirect observation of several neighborhoods, which exhibit characteristics common to other medium-sized Italian cities, making them significant for developing an analytical model.

Beginning with the selection of neighborhoods in Bergamo, the research employs an interdisciplinary approach (urban planning, geography, aging psychology, statistics) that includes various interconnected activities:

- Physical analysis: Examining the system of public spaces in selected neighborhoods (types, usage, organization);
- Functional analysis: Investigating how populations use these spaces (through interviews and urban ethnography);
- Performance analysis: Addressing issues related to urban temperatures and challenges in these spaces (heatwaves, temperatures, LST);
- Decision analysis: Identifying strategies, actions, and projects planned for public spaces.

Through this integrated analysis, the aim is to define and understand the characteristics and role of public spaces, particularly in relation to their actual use and non-use due to specific issues (heatwaves, architectural barriers, etc.), within the broader context of neighborhoods with varying characteristics. The research also aims to highlight the diversity that exists across different neighborhoods within an apparently homogeneous medium-sized city, especially in terms of the presence and organization of public spaces.

Keywords:

aging in place; elderly; medium-sized city; neighborhoods; public spaces

T_17 PUBLIC SPACE (A) / 626**Fostering Multicultural Integration in Transforming Context: Community Participatory Museum as a Bridge****Author:** Xinhang Yan¹**Co-author:** Yi Huang¹¹ *Tongji University***Corresponding Authors:** 2330328@tongji.edu.cn, huangyi@tongji.edu.cn

Since the establishment of diplomatic relations between China and South Korea, a significant number of South Korean immigrants and enterprises have moved to Qingdao, forming an economic and community network marked by distinct South Korean cultural characteristics. This phenomenon has resulted in a “parallel adaptation” model, which, while maintaining ethnic cultural boundaries, has hindered interactions with local residents and led to accumulated tensions and misunderstandings (Li, 2022). Around the time of the 2008 global financial crisis, the mass exodus of South Korean enterprises caused economic losses that further aggravated local residents’ dissatisfaction with the Korean community. Subsequently, as labor costs in Qingdao continued to rise, many South Korean businesses relocated, leading to a steady decline in the Korean community. This intensification of cultural divides and conflicts has rendered the “parallel adaptation” model unsustainable, necessitating a transition to a cultural adaptation model (Jang, 2012; Zhou and Tang, 2023).

Most Korean residential enclaves in Qingdao were developed around the early 2000s, and their public activity spaces are typically limited to narrow, unadorned sidewalks, scattered stone tables and benches, or small open spaces in front of shops (Chen and Fang, 2024). These spaces are insufficient for promoting cross-cultural exchanges. To explore the role of public spaces in improving intercultural interactions, this study adopts the theoretical framework of cultural adaptation and examines a transitioning Korean residential enclave in central Qingdao using a mixed-methods approach.

Before conducting fieldwork, a literature review was performed using keywords such as “Qingdao,” “Koreans,” “transnational migration,” “cultural adaptation,” “internationalized community,” and “public space.” The aim was to investigate the role of public spaces in enhancing social interactions within cross-cultural communities. GIS spatial analysis was employed to identify cultural resources within the community, and behavioral observations were conducted to document residents’ use of public spaces at different times of the day. Additionally, questionnaires and structured interviews were utilized to gather residents’ perceptions of the community environment and their spatial preferences. The PLS-SEM model was then applied to analyze the effects of spatial environments and activity programs on cross-cultural interactions (Fornell and Bookstein, 1982; Jo et al., 2018).

The findings reveal that multifunctional, inclusive, and highly interactive public space designs can significantly improve the quality of interactions between cultural groups, fostering community integration while preserving cultural identity through social engagement. Based on these findings, the study proposes alternative strategies centered on narrative design and community participation. Drawing inspiration from the TV series *Reply 1988*, iconic scenes were reinterpreted and combined with community needs to create 12 multifunctional spaces, including shared kitchens, craft workshops, and venues for cultural and artistic activities. The study also recommends establishing a

“community participatory museum” and implementing acupuncture-style urban interventions along streets to rebuild neighborhood relationships in mixed Chinese-Korean communities. These strategies aim to serve as a reference for transforming the cultural adaptation model in similar communities.

Keywords:

Intercultural Interaction; Cultural Adaptation; Community Participatory; Narrative Design; Transnational Migration

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T.17 PUBLIC SPACE (A) / 1211

Changes and Challenges in Major Public Spaces in Warsaw, the Emergence of New Narratives A. D. 2025

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Background

Public Spaces have the empirical role of crossroads and functional hubs, as well as symbolic and cultural meaning of defining the community that creates and uses them. Warsaw, as a city with a turbulent history, has experienced in the last century massive destruction of the majority of its urban tissue. In the earlier XIX. century its surface was limited due to the occupants' military regime (Russian) and oppressive management, later widely expanded in surface and intensely built. During WWI (Prussian) and WWII its space was illustrating the historical, political and economical challenges. The half of the XXth century occupation (German) resulted not only in the majority of its inhabitants' dispersion and dispersion, but also an almost total destruction. The post-war half of the XXth century regime (People Republic of Poland, politically dependent of the USSR) was realising the task of reconstruction, correcting the historical appearance in the communist way of doing and social-realist art doctrine, with limited means of massively destroyed and impoverished country. The centralised economy and governance allowed the coordination of works on an unprecedented scale. The fall of the communist regime (end of the XXth century) left the country and its capital unadapted to the upcoming, returning after almost half a century - democracy and capitalism. The opening towards formerly limited by the Iron Curtain division economic and cultural exchanges Western countries influences, together with the spontaneous grassroot governance, resulted in chaotic development of the urban landscape.

Aim

Warsaw's emblematic space (in the center of the town) - Defilades' Square with the Palace of Culture (later registered monument) crowning its emptied from the war-surviving tenements' houses no longer served massive military defilades. It was quickly adapted to the enormous bazaar of goods.

Continuous debates of the prerogatives of the re-organisation of this space adapting it to rapidly changing social needs and urban functions, together with numerous dis-continuities of urban planning tools framework resulted in the multiplicity of Municipality-led concept competitions, without the application of their results. The aim of the presented study is to illustrate the complexity of these processes in the light of teachings for next transformations.

Question

In the name of the Hope for socially adaptive investments, the formulated research question regards the resulting process of the urban management of this space. Is it a lesson to be repeated? Can the project be adapted to the contemporary challenges of social inclusivity and climate adaptability?

Method

The applied method of conducting research uses the urban space theories (literature study), the on-going press and social media publications monitoring, completed with the site visits and architectural analysis.

Results

Presented results allow to "read" through urban and procedural complexity of the process of re-shaping the central urban space. The shared work helps achieve understanding of the threatened liberty in the age of next war in Europe, climate change and social instability. The construction of the Modern Art Museum, new theatre (TR) and square organisation as a part of the New Warsaw Centre project remain controversial to capitals' inhabitants. The study explains chosen aspects of the social perception of this public investment and expectations towards XXI. century public spaces transformations, expected to be more sustainable.

Discussion

Different approaches may be adapted to analyse the urban public spaces, being realized during the study process. The proposed presentation aims to enhance discussion of adaptive future models of design and management of public spaces with rich heritage. The conducted research and presentation illustrate the potential of transformative power of public spaces, ways of adaptive planning hoping for inclusion, equity and social integration with their downfalls or lost chances to be sustainability flagships.

Keywords:

public space; cityscape transformation; social justice; sustainability; hope for inclusion

T_17 PUBLIC SPACE (A) / 627**Over the rainbow: Urban oasis as an inclusion hub**

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The cities exposed to multiple transitional flows have been facing various challenges which especially affect vulnerable and marginalised groups. The strong division between the winners and the losers of the neoliberal mechanisms reflects in urban setting and its

public spaces, where the discrepancies between the reality and the globally announced mantras of sustainability, resilience, equity and justice become extremely visible. Belgrade, the capital of Serbia, represents one of the multilayered examples of this practice, fuelling the atmosphere of growing uncertainty, far away from the postulates defined by SDGs, 2030 Agenda or the New European Bauhaus framework. However, the improvements are possible and their effects - channeled through the matrix of co-creation, co-production and co-benefits, could make a difference on a smaller scale, gradually influencing comprehensive societal and environmental changes.

Focusing on the case of a new urban oases (2024), situated on the site of a Drop in Shelter for the street children, the paper will examine a relationship between marginalised group(s), neighbourhood community and multidisciplinary professionals, involved in a project launched by the EUNIC Serbia (European Union National Institutes for Culture) and the Goethe Institute. Teamed up with the Belgrade International Week of Architecture (BINA), the Center for Youth Integration, the Italian Institute of Culture, the Embassy of Portugal, as well as a group of the second-year undergraduate students of the University of Belgrade - Faculty of Architecture, they activated and upgraded a small open space creating a unique hub of/for social inclusion, safety and inter-neighbourhood interaction. The project was structured around several phases related to research, design and implementation, consisting of participatory workshops, lectures, exhibitions, presentations and public events. The newly created public space is conceptualised and shaped according to the specific needs of all identified users, representing a common good for the entire local community. Its design and program stimulate exploration, play and learning through the application of art, ecology, recycling and digitalisation. As a new popular place, the urban oasis also raises both the environmental awareness and the quality of space, while connecting the different groups which share their personal experiences of the space and the activities. The selected case will be presented through the lenses of the educational process, highlighting the synchronisation between the expected environmental and social outcomes, a comprehensive participation of future users (both the marginalised children and the local community) and the estimated/achieved sustainability of the implemented project.

Keywords:

Integration; Inclusion; Public Space; Children; Education

T.17 PUBLIC SPACE (A) / 1385

Public Space in Motion: Music and Chrono-Urbanism in Industrial Regeneration

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The transformation of underused industrial sites into vibrant public spaces is a growing challenge in contemporary urban planning. While traditional regeneration approaches often prioritize physical rehabilitation, this study introduces chrono-urbanism and music as dynamic triggers for reactivating industrial sites as inclusive, dynamic public spaces. Chrono-urbanism emphasizes the temporal rhythms of urban life, ensuring that regenerated sites evolve in sync with social, cultural, and economic cycles (Muliček et al., 2015; 2016). When combined with music and cultural programming, this approach fosters long-term engagement, flexibility, and inclusivity in urban public spaces (Bolderman, 2024; Ballico & Carter, 2021).

Building upon research from the EU-funded ReCITYing Creative Europe project, this study analyses ten European case studies where industrial spaces were reactivated through music-driven public engagement. The selected cases include MeetFactory (Prague, Czech Republic), Friche Belle de Mai (Marseille, France), Bergson Kunstkraftwerk (Munich, Germany), Kulturwerft Gollan (Lübeck, Germany), Axis Music Studio (London,

UK), Le Quartier Libre (Rouen, France), Opera Eiffel Art Studio (Budapest, Hungary), Edelfettwerk (Hamburg, Germany), Park Spoor Noord (Antwerp, Belgium), and WUK Gunpowder Depot (Belgrade, Serbia). The findings demonstrate that these spaces successfully transitioned from neglected industrial voids into multifunctional cultural hubs, adapting to diverse user needs across different timeframes. Strategies such as event layering, temporal accessibility, and participatory cultural programming played key roles in ensuring their sustainability (Plevoets & Sowinska-Heim, 2018; Oevermann & Mieg, 2021).

The study also addresses the challenges of gentrification, governance, and policy frameworks, highlighting the role of social innovation and community-led initiatives in sustaining these new public spaces (Gravagnuolo et al., 2021; Scaffidi, 2024; Scaffidi et al., 2024). The results offer valuable insights for urban planners, policymakers, and cultural practitioners seeking to integrate temporal urbanism into underutilised sites and heritage regeneration. Additionally, this work expands upon findings from a forthcoming publication in *Cities Journal* (Scaffidi et al., 2025), reinforcing the potential of chrono-urbanist principles and music-led regeneration in shaping the future of public space.

This contribution invites discussions on how post-industrial spaces can be strategically reclaimed as dynamic public spaces, bridging urban history, contemporary culture, and social sustainability (Allam et al., 2023a; Moreno et al., 2021).

Keywords:

Music and Public space, ReCITYing, Chrono-urbanism, Industrial Sites Regeneration

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T_17 PUBLIC SPACE (A) / 39

How Sensory Environment and Playfulness Influence Cognitive Health of Older Adults: Planning Empathetic, Ability-Building and Inclusive Public Housing Neighbourhoods in Singapore

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Providing opportunities for rich and meaningful interactions with physical and social

environment is crucial for supporting the physical, psychological and social well-being of people of all ages, and particularly the vulnerable populations, such as older adults. Associated declines in sensory and cognitive capacities that occur as people age affect profoundly older adults' quality of life and everyday functioning (Kwon et al., 2015). This paper outlines an interdisciplinary study that investigated the effects of sensory environment and playfulness on cognitive health of older adults living in densely built and populated public housing communities in Singapore.

Here, sensory environment refers to sensory richness of any physical setting and its capacity to trigger bodily, emotional and mental reactions in users and encourage interactions with space and among users. On the other hand, playfulness is a psychosocial and behavioural construct referring to a personality trait, which enables a person to translate any situation or activity as playful and enjoyable (Proyer et al., 2018; Van Vleet and Feeney, 2015). Our hypothesis was that sensory environment and playfulness are interrelated mechanisms that can affect cognitive health of older adults positively, including reducing depressive symptoms and slowing down cognitive decline. Moreover, we explored how users' visual perception and viewing behaviour can further enrich our understanding of sensory environment and playfulness, and older adults' interaction with their familiar built and social environment.

The study had two phases. In the first phase, we employed a cross-sectional survey and path analysis to investigate the potential effects of exposure to sensory environment and playfulness on health-related variables (self-rated memory, cognition) through intermediates (depressive symptoms, loneliness, at-homeness and neighbourhood cohesion), using available validated scales. We conducted surveys with 400 healthy adults aged 55 and above in 20 typical public housing neighbourhoods in Singapore. In the second phase, which is the focus of this paper, we conducted a small mobile eye-tracking study, which involved naturalistic walks through the neighbourhood followed by interviews with 20 survey participants from 4 selected neighbourhoods.

Path analyses revealed that sensory environment and playfulness are important factors for cognitive health of older adults at both neighbourhood and individual levels. While no statistically significant direct associations were found between sensory environment and playfulness, statistically significant correlations indicate that both sensory environment and playfulness can improve cognitive health through increased neighbourhood cohesion, sense of at-homeness, and decreased loneliness and depression. The eye-tracking study further explained the level of multi-sensory interaction and the reasons behind such engagement with the familiar spaces, beyond visual attention. The results reaffirmed the need for better understanding of the mechanisms of multi-sensory engagements and playful behaviour towards better cognitive health, in order to inform planning of residential neighbourhood designs in high-density contexts that are healthful, ability-building, empathetic and inclusive.

Keywords:

sensory environment; playfulness; cognitive health; housing neighbourhoods; social cohesion; eye-tracking

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T.17 PUBLIC SPACE (A) / 46**The application of Minimalist philosophy in public space design****Author:** Zhaoxi Li¹¹ *PhD Candidate***Corresponding Author:** jyelzx@gmail.com

This research builds on three main contexts of the recent decade. Firstly, there is a recognition that the contemporary world is becoming increasingly complex, accompanied by an overload of sensory inputs that can lead to negative consequences. Secondly, the impact of aesthetic quality on human well-being and behaviour is recognised, with many urban design agendas and guidelines outlining the importance of aesthetically attractive public spaces. Thirdly, the crisis of over-consumption of resources and sustainability is receiving increasing attention. As a result, the philosophy of minimalism, increasingly seen by many as a solution for private interior spaces, promises to be explored as a remedy for urban complexity, aiming to enhance the aesthetic quality of outdoor public spaces and pursue sustainable development.

Minimalism was often referred to as a design style with features such as extreme simplicity in form, materials and means of production. The concept of minimalism is widely used in art, architecture, interior design and has recently become a fashionable way of life, with many believing that living a minimalist lifestyle is good for mental wellbeing and health. However, the concept and philosophy of minimalism remains unexplored in the field of urban design. Thus, this study is an attempt to seek a link between minimalism and urban design to explore more possibilities and potentials for future public space design.

This research builds on three key contexts that have emerged over the past decade. Firstly, there is a growing recognition that the contemporary world is becoming increasingly complex, with an overload of sensory inputs often leading to adverse consequences. Secondly, the influence of aesthetic quality on human well-being and behaviour has been widely acknowledged, with numerous urban design agendas and guidelines emphasising the importance of aesthetically pleasing public spaces. Thirdly, the escalating crisis of resource over-consumption and the urgency of sustainability have become central to global discourse. In response to these challenges, the philosophy of minimalism - often embraced as a solution for private interior spaces - offers promising potential as a remedy for urban complexity. Minimalism aims to enhance the aesthetic quality of outdoor public spaces while fostering sustainable development. Traditionally, minimalism has been associated with a design style characterised by extreme simplicity in form, materials, and methods of production. The concept of minimalism is widely applied in art, architecture, and interior design and has more recently evolved into a popular lifestyle movement, with advocates suggesting that minimalist living contributes positively to mental well-being and health. However, the concept and philosophy of minimalism remain largely underexplored in the field of urban design. This study seeks to bridge this gap by investigating the relationship between minimalism and urban design, uncovering new opportunities and potentials for future public space design.

To examine the applicability of minimalism in public space design theory and practice, this research addresses three key questions: 1) How do existing theories of urban design relate to minimalist ideologies? 2) How are minimalist features currently applied in public space design, and what are their implications? 3) How can theories and practices of urban and public space design learn from minimalist ideologies to respond to the increasing complexity of cities? This research aims to develop both a conceptual framework and a practical toolkit to guide future public space design, enabling the achievement of aesthetic, sustainable, and resilient outcomes in an increasingly complex urban context.

A mixed-methods approach was adopted, incorporating systematic online research, on-site observations of four minimalist public spaces, and semi-structured interviews with various stakeholders. The findings explore the application and impacts of minimalist

principles in public space design, providing insights into broader trends and deeper understandings within the field.

Keywords:

Minimalism; public space design; urban aesthetic; sustainability; urban complexity

T.17 PUBLIC SPACE (A) / 112

Transforming Infrastructure into Public Space: Evaluating the Impact of a Highway Cap Park on Physical Activity

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Highway cap parks are emerging as transformative urban green infrastructure, addressing environmental challenges while promoting physical activity (PA) and public space utilization in dense urban areas. This study examines the impact of the Bundang-Suseo Highway cap park in South Korea on residents' PA levels, focusing on walking, moderate-intensity, and vigorous-intensity activities. Using pre-post comparisons, within-group analyses, and individual-level difference-in-differences (DID) modeling, the study evaluates changes in PA among households near the park (experimental group) and those farther away (control group), accounting for demographic and health-related characteristics.

The findings indicate a significant increase in walking-related activities in the experimental group. Average walking duration rose by 13.95 minutes per day, and days with at least 10 minutes of walking increased by 0.69 days per week. In contrast, no notable changes occurred in the control group, underscoring the park's localized effect. While moderate- and vigorous-intensity activities remained largely unaffected, the park effectively promoted low-intensity activities, particularly among previously inactive individuals, demonstrating its potential to address physical inactivity and improve public health outcomes.

DID analysis further supports these trends, showing a marginally significant increase in walking frequency (0.41 days per week, $p=0.070$) but statistically insignificant changes in walking duration and overall PA scores. Despite modest effects, the park emerged as an accessible and inclusive public space, fostering informal exercise and social interaction. Its design prioritizes usability for diverse groups, including older adults and families, strengthening community cohesion and expanding opportunities for social engagement.

Beyond promoting PA, the cap park highlights the broader role of public spaces in enhancing urban livability. By repurposing underutilized infrastructure, it addresses spatial inequities, creating equitable access to recreational opportunities. Notably, walking activity in the experimental group eventually surpassed that of the control group, which initially benefited from proximity to an existing linear park, underscoring the cap park's role in reducing disparities in green space access.

These findings offer important insights for urban planners and policymakers. Incorporating green infrastructure into urban design can simultaneously improve public health and expand high-quality public spaces. Ensuring equitable access to such spaces should remain a priority, complemented by features supporting diverse activities, such as fitness stations and organized programs, to further increase participation across different activity levels.

While this study highlights the short-term impacts of highway cap parks, further research is needed to explore long-term behavioral changes and broader social, environmental, and economic benefits. As multifunctional public spaces, cap parks present sustainable and equitable solutions for promoting physical activity, fostering social connections, and improving urban livability. These findings emphasize the need for integrated green

infrastructure strategies to create more resilient, inclusive, and active urban environments.

Keywords:

physical activity; highway cap park; public health; DID; green infrastructure

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T_17 PUBLIC SPACE (A) / 788

Comprehensive Evaluation of Child-Friendly Public Spaces: The Zumrutevler Case as Istanbul's First Permanent Two-Stage Street Transformation

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The transformative potential of public spaces, especially street transformations aimed at making cities child-friendly, lies in their ability to reimagine urban environments to better serve all inhabitants, particularly children. Streets, as children's first public spaces, are crucial to their experience of the city. In vehicle-dominated cities, these spaces often become unsafe and inaccessible for children, limiting their opportunities for play, mobility, and social interaction. This has led to the increasing importance of child-friendly cities, where public spaces are reimaged to prioritize children's needs and well-being. Child-centred street transformations aim to restore these spaces for children's independent mobility and play, while also benefiting people of all ages by promoting safer, more inclusive environments. For successful transformations, design with attention to detail and support by comprehensive strategies and realistic action plans are essential in guiding these transformation processes. These transformations can be temporary, like "Play Streets" events that close streets to traffic for children to play, or permanent, using tactical urbanism methods to test changes with low-cost materials before making lasting alterations. Both approaches enhance pedestrian accessibility, ensure children's safety, and promote environmental sustainability through alternative transport options like walking and cycling.

This research questions whether the environment that emerged after the permanent implementation of the child-friendly street transformations carried out in two stages can still be sustained as child-focused. In this context, it is aimed to understand which criteria should be taken into consideration in the decision-making process and implementation process of child-friendly street transformations and to understand the possible obstacles in front of them in fulfilling the requirements of these parameters. Following it, the research evaluates the sustainability of the transformation's child-friendly character after permanent implementation and aims to answer two main research questions: (1) How can child-friendly street transformations be evaluated from decision-making to implementation? (2) Do these transformations retain their child-friendly identity in their permanent form?

The objectives of the research include defining parameters for evaluating the design and implementation of child-friendly streets, determining how these parameters can be measured, and understanding the relationship between user behaviour and design

outcomes. The research specifically focuses on the child-friendly street transformation in Zümrütevler, a densely populated neighbourhood in Istanbul. This transformation which converts a huge intersection area into a square, the first of its kind in Istanbul, was implemented in two stages: a rehearsal phase followed by permanent changes. The research aims to evaluate whether the permanent transformation maintains its child-friendly identity and how child-friendly street transformations can be evaluated across all stages—from decision-making to implementation—by using an original evaluation scale. This scale integrates design parameters from existing guides and assesses how well these criteria are met in practice. User behaviours, pedestrian movements, and public space usage were closely observed to understand how the design choices impacted the area's functionality and accessibility, as a questioner analysis method to the results of evaluation scales.

The research highlights the idea that designing for children often benefits everyone, reinforcing the importance of inclusive public space design. In child-focused public space transformations, especially street transformations, since the urban habit is in vehicle-focused design solutions and this transformation also expresses a change in perspective on the city, it is observed that some design details are abandoned from thinking child-focused. Despite this, it is an important step for child-friendly transformations to become widespread in cities and for these areas to become a part of the life flow of the city dwellers with such transformations. Ultimately, the study demonstrates the transformative power of public space design, showing how thoughtful, child-centred transformations can create safer, more accessible, and more vibrant urban environments for all.

Keywords:

child-friendly; street transformation; public space; streets for kids; design guidelines

T_17 PUBLIC SPACE (A) / 1026

Sensitizing officials to spatial problems: A participatory approach to Green Infrastructure planning in Adriatic Cities

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Adriatic cities face critical environmental and spatial challenges, mainly urban heat islands, flood risks and pollution, driven by urbanization and climate change. Green Infrastructure (GI) delivers critical ecosystem services to mitigate these issues. However, the planning and implementation of GI in the region often lack coherence, resulting in fragmented and suboptimal outcomes. To address this, the Interreg SI-HR ZeleNatura project developed a handbook to standardize GI planning and management in Adriatic cities while tackling the lack of awareness and understanding among decision-makers, municipal staff and other stakeholders required to engage with spatial issues. It focuses on equipping stakeholders with tools to understand the spatial dimensions of challenges and the transformative potential of GI. By fostering spatial literacy, the handbook facilitates informed decision-making and promotes more optimal implementation of GI.

Central to this research approach is the participatory process that bridges the gap between spatial expertise and local knowledge. The methodology actively involves local stakeholders, including municipal representatives, urban planners and community members through focus groups which include participatory mapping. This ensures that

GI planning addresses specific local challenges and integrates the needs and priorities of diverse stakeholders by serving three critical functions:

1. Problem identification: Engaging non-spatial professionals in focus groups sensitizes them to pressing urban issues, such as flood-prone areas, heat islands, and zones with insufficient green spaces. Stakeholders collectively define priority areas for intervention based on the issues recognized, fostering a shared understanding of urban challenges.
2. Solution development: Using spatial analyses and a toolkit of GI elements (e.g., green roofs, urban forests, permeable surfaces), participants collaboratively propose tailored interventions for identified priority areas. Interactive tools, such as transparent mapping overlays and ecosystem service evaluations of GI elements facilitate context-sensitive and multifunctional GI solutions.
3. Validation and integration: Proposed GI solutions are reviewed with professional guidance to ensure alignment with spatial plans, local policies, and environmental goals. This iterative process strengthens the feasibility and acceptance of GI strategies.

Results of the participatory process demonstrate its transformative impact on research and practice. Stakeholder input has been instrumental in identifying underrepresented urban issues, refining GI designs, and ensuring interventions are not only ecologically effective but also feasible. For example, the mapping exercises revealed nuanced community priorities and showed where certain types of green infrastructure are deliverable in terms of spatial availability.

The key contribution of the handbook is its ability to transform the way local stakeholders and non-spatial professionals engage with urban planning. The participatory process plays a pivotal role fostering a shared understanding of urban challenges and aligning perspectives towards GI implementation, serving both as a practical tool and a strategic guide for standardizing GI planning.

The handbook synthesizes the Problem identification, the Solution development and the Validation steps of the participatory approach and translates them into a practical framework, structured around three questions:

- Where GI? Participatory mapping and spatial analyses identify priority areas for GI interventions.
- What GI? A participatory toolkit supports the selection of GI types, optimized for local needs and ecosystem services.
- How GI? Guidelines emphasize participatory implementation, connectivity, multifunctionality, and integration across spatial scales.

This research will first outline contextual conditions under which Adriatic cities face pressing environmental challenges, emphasizing the role of GI in addressing these issues. It will then describe the participatory methods employed to bridge the gap between spatial professionals and local stakeholders highlighting how awareness-raising and stakeholder engagement were integral to identifying and solving spatial problems. Lastly, the research will evaluate the outcomes of this participatory approach, showcasing its effectiveness in developing tailored GI solutions and fostering a deeper understanding of spatial challenges among decision-makers.

Keywords:

green infrastructure; participatory mapping; green infrastructure toolkit; sensitizing decision-makers

Evaluation of Emotional Attachment Characteristics of Urban Vitality Complexes Based on EW-GRA-TOPSIS Model in the Context of Stock Renewal: A Case Study of Five Typical Urban Complexes in Beijing and Shanghai

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The construction of vibrant urban spaces is an important component of humanistic urban development, especially for China's first-tier cities in the context of stock renewal. In response to the lack of quantitative evaluation methods for the emotional attachment between people and the built environment in small-scale urban vitality spaces, this study proposes a new method to quantify the attachment between people and the built environment as an evaluation index of vitality space and thereby evaluate its comprehensive attachment level. The study selected five representative urban renewal vitality complexes in Beijing and Shanghai to demonstrate the feasibility of this method. The study first constructed an emotional attachment evaluation index system for small-scale urban vitality space based on the emotional attachment theory from a multidisciplinary perspective, including 14 indicators describing the degree, dimension, and intensity of attachment to specific built environment characteristics. Secondly, SPSS is used to process and analyze the data of each indicator, and the specific correlation between indicators is calculated to provide support and explanation for the subsequent evaluation results. Then, the TOPSIS evaluation model improved by combining the entropy weight method (EW) and the grey relational model (GRA) was used to calculate and organize the index results, and the evaluation results of the emotional correlation level of the five complexes were obtained. Last but not least, the evaluation results, specific values of each indicator, correlation analysis results, and local observation and interview results were analyzed comprehensively. The preliminary results of the study show that small-scale built environment can effectively promote the vitality of urban spaces by establishing emotional attachment with people. Specifically, the role of material characteristics is highlighted by reinterpreting historical material and structures or introducing new ones, deepening people's emotional experience and promoting spatial vitality through place identity or novel emotional connections. While the non-material characteristics of space are closely related to its material characteristics, their impact on the vitality of space changes dynamically over time and with the surrounding environment. At the same time, this study further expanded the quantitative method framework in the research and evaluation of vitality space, combining the scale method and multi-criteria decision analysis method for mining emotional attachment characteristics and evaluating attachment level. The results not only reveal the built environment characteristics that affect people's emotional experience in urban vibrant spaces in a more scientific and objective manner, but also provides a more humane methodological reference for the renewal, design, management and evaluation of future urban vibrant spaces.

Keywords:

emotional attachment; urban vitality evaluation ; EW-GRA-TOPSIS evaluation model

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Rethinking Urban Living Environments: Investigating the Influence of Built Environment Features on Physical Activity Levels – Evidence from a Cross-Sectional Study in Ankara, Türkiye

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Background Information and Relevance to the Track:

Urban planning and design processes have always incorporated the principles of healthy living and enhancing quality of life. In recent years, particularly during the COVID-19 pandemic, the connection between public health and urban planning has gained significant attention, complying with the Sustainable Development Goals. This has led to a growing focus on built environment (BE) epidemiology, supported by accumulated experience and evidence, calling for innovative and transformative actions to address emerging challenges.

BE epidemiologists seek to identify the pathways through which BE characteristics are associated with the prevalence of chronic diseases (Sarkar and Webster, 2017).

One pathway points to the physical features influencing individuals' geospatial behavior and environmental perception, affecting healthy habits assessed by PA levels and walkability. Physical inactivity is the fourth most significant risk factor for non-communicable diseases (NCDs) worldwide, contributing to approximately 3.2 million deaths; it can also influence the rates of diabetes and obesity [Ewing et al., 2014]. A city with a high level of walkability, cycling, and green spaces can reduce these rates.

Purpose:

Based on TÜBİTAK-funded research (2019-2023), our study aims to specify urban living environments' direct and indirect effects on individual health indicators, such as people's physical and mental health perception, PA levels and selected chronic disease prevalences.

Method:

Our cross-sectional geospatial study involved 4015 residents of Ankara (aged 18-92). Data covered information on the residents' locations, demographic and socioeconomic statuses, health status, healthy lifestyle behaviors, and evaluations of urban living environments. BE variables included distance to urban amenities (parks, fast-food outlets, eateries, schools, local health centers, shopping centers) and street morphology (street connectivity and betweenness). We fitted linear models to assess relationships between these factors and health outcomes.

Findings:

We found a significant relationship between BE characteristics and health status, the prevalence of chronic diseases, and individuals' socio-economic statuses, PA levels, and obesity prevalence, assessed by Body Mass Index (BMI). For example, selected findings show that people with chronic diseases tend to use green areas for walking more than people without chronic diseases (59,8%, non-chronic disease %49,6; $p>0,05$) and also show that people with high BMI use parks more often, in particular during summer months. On the other hand, people with low BMI tend to walk to urban facilities, such as markets and food chain stores (94,4% and 89,9%; $p<0,001$). Availability and accessibility of green spaces significantly affect PA levels; people with high PA levels stated that they live close to a park (21,4% and 9,3%; $p<0,001$). Housing conditions also affected the results. People living in high-rises are less likely to use these parks than people living in low-rises (60,0% and 50,0%; $p<0,001$).

Interpretation:

Based on experience, our research merges public health with urban planning and design guidance to reflect on a new urban agenda. We conclude that compact urban forms with high walkability, street connectivity, centrality, and land use diversity support perceived health and PA levels and diminish chronic disease prevalence.

In particular, if an urban living environment has diverse urban facilities and higher connectivity, people are more likely to walk and be physically active. The evidence points to the value of mixed-land use and proximity to urban facilities. In our study, we explore the role of urban planning and design as a transformative tool to foster active living, equal access to urban facilities, and support high-quality, walkable, and equitable urban living environments.

Keywords:

urban health; built environment epidemiology; geospatial analysis; land use diversity

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T.17 PUBLIC SPACE (A) / 797

Navigating the Dynamics of Place-Making in Public Spaces: Interactions Between Formal and Informal Practices in Public Spaces in Huifang, China

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Public spaces are critical components of urban life, serving as venues for social interaction, cultural expression, and community engagement. This study examines the interplay between formal and informal practices in place-making within public spaces, focusing on the urban context of Huifang, China. The research situates public space as a dynamic entity shaped by appropriation, governance frameworks, and socio-cultural practices. It emphasizes the role of bottom-up place-making strategies, contrasting them with formal, top-down approaches. Formal practices, characterized by structured, state-led interventions, prioritize functionality, safety, and aesthetics. In contrast, informal practices emerge organically, driven by community needs and grassroots adaptation.

This paper employs a mixed-methods approach, integrating qualitative data from interviews (semi-structured, unstructured and go-along interviews), structured observations, and geo-narrative mapping, supplemented by the photo voice technique. These methods reveal the nuanced dynamics of public space appropriation, highlighting the interaction between residents, tourists, and formal authorities. Case studies in Huifang illustrate diverse trajectories of place-making, ranging from resident-led grassroots initiatives to tourism-driven development.

Key findings underscore the complementary and conflicting dynamics between formal and informal practices. Formal initiatives, such as heritage preservation and urban redevelopment, often clash with informal activities and community events. However, synergies emerge in collaborative projects that integrate community input into formal planning processes. In Huifang, the transition from community-focused usage to tourism-oriented development reveals the complexities of balancing economic imperatives with cultural preservation.

The study highlights appropriation as a critical process in place-making, enabling communities to adapt and personalize public spaces. This fosters inclusivity, cultural continuity, and local identity, while also rethinking about the power asymmetries that challenge equitable governance. The research also emphasizes the role of temporality, creativity, and collaboration in sustaining vibrant public spaces, particularly in the context of rapid urbanization.

By contextualizing place-making within Chinese governance frameworks, the study sheds light on the tensions between state-led objectives and grassroots practices. Authoritarian governance prioritizes efficiency and economic development, often sidelining community voices, while democratic systems encourage participatory planning but face challenges in reconciling diverse stakeholder interests.

This research contributes to the broader discourse on urban place-making by elucidating the interplay between formal and informal practices in shaping public spaces. It provides actionable insights for urban planners, policymakers, and community

organizations, advocating for inclusive strategies that harmonize governance priorities with the needs and aspirations of local communities. The findings underscore the importance of participatory frameworks and adaptive policies in creating resilient, significant public spaces that support equitable urban development.

Keywords:

Public spaces; Informal practices; Urban governance; Community appropriation

T_17 PUBLIC SPACE (A) / 844

Restorative effect of biophilic design in community green space from the multisensory perspective: A case study of Shanghai Hongxu Habitat Garden

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Abstract

The rapid urbanization process and decreasing opportunities for human-nature interactions have intensified global concerns about mental health. While biophilic design is widely acknowledged for its potential to support psychological restoration, the dominance of vision in human perception often leads to the neglect of other sensory modalities in design, particularly the role of active tactile engagement. Research has gradually demonstrated the interdependence of human senses, highlighting that the effects of multisensory stimuli are not merely additive. To address this gap, we systematically investigate the impact of visual-auditory interactions on restorative environments, emphasizing how the incorporation of tactile stimuli influences restorative outcomes in different types of urban community green spaces, using Shanghai's Hongxu Habitat Garden as a case study.

We conducted a 35-minute on-site experiment to explore how visual, auditory, and tactile stimuli affect restorative experiences and sensory comfort across diverse urban green spaces. Participants underwent a 10-minute standardized stress-induction task before entering the experimental site for a 7-minute environmental experience, followed by questionnaire completion. Throughout the process, physiological data were continuously monitored using wearable POLAR sensors. The experiment involved five groups: a roadway control group, and groups exposed to visual-auditory and visual-auditory-tactile stimuli in two different green space types (i.e., activity-oriented green spaces and recreation-oriented green spaces). Activity-oriented green spaces were characterized by vibrant colors, low-growing vegetation, water features, and diverse tactile elements like flowers, water, pebbles, wooden stakes, and tree bark. Recreation-oriented green spaces, in contrast, featured tall and dense vegetation, muted tones, a sense of enclosure, and tactile opportunities such as walking on grass, sitting under trees, or hugging them. Both types of green spaces shared a natural soundscape dominated by birdsong, wind, and rustling leaves, with highway noise mitigated by sound barriers. Subjective data were collected through standardized questionnaires (e.g., Perceived Restorativeness Scale [PRS], State-Trait Anxiety Inventory [STAI]), while physiological data were captured using POLAR wearable sensors. A total

of 96 valid questionnaires and 87 physiological datasets were analyzed to explore the dynamic restorative effects of community green spaces.

Results demonstrate that recreation-oriented green spaces significantly outperform activity-oriented green spaces in promoting restorative effects, particularly when tactile stimuli are introduced. Tactile interactions notably enhance the dimensions of Being Away and Compatibility—two critical indicators in the PRS—in recreation-oriented green spaces, fostering a sense of mental detachment from daily stressors and alignment with user needs. However, in activity-oriented green spaces, tactile stimuli exhibit mixed effects. The analysis further reveals that tactile stimuli amplify the impact of visual and auditory comfort in recreation-oriented green spaces, creating synergistic effects, while occasionally disrupting auditory comfort in activity-oriented green spaces.

Additionally, personal preferences for natural environments were strongly correlated with improved restorative outcomes. Interestingly, the study identified a nontraditional pathway for managing state anxiety: roadway environments, although less restorative than green spaces, offered unique psychological recovery benefits for certain high-anxiety individuals.

This study emphasizes the critical interplay between multisensory biophilic design and psychological restoration, providing actionable insights for sustainable urban design. By integrating these findings into urban policies and design practices, urban community green spaces can advance transformative actions that foster mental health and well-being.

Keywords:

Biophilic Design; Multisensory Interaction; Experimental research; Psychological Restoration

T_17 PUBLIC SPACE (A) / 1410

Public Space as Social Infrastructure for Urban Well-being, transformation and resistance in Athens under persistent austerity

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Southern European cities have been hit hard by economic austerity, climate-related events, impact of migration flows, as well as socio-sanitary damages during the Covid-19 pandemic. In this multiple-crises context, public open spaces in Athens, Greece, become sites of transformation and resistance under an ongoing commodification, supported by a persistent 'austerity urbanism' (Peck, 2012) which reflects broader patterns of uneven geographical development (Brenner et al., 2010). Due to privatization and deregulation of planning processes since 2010 (Gemenetzi, 2021) public spaces have been impacted, while simultaneously catalyzing forms of civic engagement and collective action for social inclusion, environmental and spatial justice.

This contribution aims to analyze the socio-spatial dynamics in *Plateia Protomagias* (Protomagias Square) at Pedion tou Areos park in Athens and how these interconnected spaces have emerged as pivotal sites for contesting socio-spatial inequalities. Protomagias Square has been a highly appropriated space by its multiple and diverse users, especially during the years after the crises of 2010, a space where diverse elements could develop ways to coexist and create relations.

The case study focuses on the latest transformation of the square, since 2023, when almost one third of the public square was unexpectedly fenced off by Attiko Metro S.A.

until 2030. This area was designated to be used in auxiliary works for the construction site of a new metro station, as well as for storage and office space of the company, further shrinking the already scarce public space and disabling the social life, especially of the more disadvantaged inhabitants of the city.

Following the mobilization of local associations and inhabitants' initiatives to reclaim their right to public space, the research examines how these urban spaces function as laboratories for grassroots initiatives that both advance social inclusion and assert collective rights to public space, manifesting what Latham and Layton (2019) conceptualize as 'social infrastructure' for civic empowerment and spatial justice. The role of urban wellbeing and care as drivers of urban planning is being addressed, acknowledging the transformative understandings of society and democracy that can leverage spaces of relations and collective time and thus improve wellbeing through solidarity bonds and increased sense of belonging and owning in a commoning sense.

Drawing further on theories of socio-spatial justice (Soja, 2010) and biopolitics framework (Foucault, 1978), the paper contributes to understanding how public spaces shape and are shaped by daily negotiations of transformative urban changes under restrictive conditions and despite facing what Madden (2022) terms "systemically induced fatigue." The study suggests that understanding of care as a social capacity directed at maintaining collective welfare (The Care Collective, 2020) and integrating restorative life-values into urban planning (Bianchetti, 2020) can create more inclusive and sustainable public spaces that serve as catalysts for social justice and collective well-being. Urban planning approaches focusing on improving city dwellers' wellbeing and creating alternative visions of urban development that prioritize collective welfare over market-driven transformations should strengthen public spaces' role in promoting equity and environmental sustainability.

Keywords:

public space, spatial justice, collective well-being, Athens

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T_17 PUBLIC SPACE (A) / 1425

Spatial recognition towards emotionally healthy city: the case of Vigne Nuove in Rome

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The COVID-19 pandemic highlighted health challenges, renewing attention to mental

health issues, impacting particularly on younger generations. In the face of increasingly rapid processes of urbanization and de-urbanization though, isolation and social disconnection are emerging as a structural public health issue. The anxieties inherited from the cities of the 20th century thus add to new fears related to climate change, depicting a geography of loss that invests both the social and urban fabrics. For cities to be resilient and prepared for today's "grand challenges", the creation of places of hope becomes an essential element (Rao, 2022) that pairs with the need to revise governance and welfare models on the basis of new paradigms of publicness, collaboration, and flexibility. As recalled by recent communication by the European commission, mental health prevention and support require an integrated approach across different policies, including those related to sustainable urban development (European Commission, 2023).

Reaffirming the active and biopolitical role of the space (Viganò, 2023), the contribution presents the first evidence of the European funded project We-Z: emotional WELLbeing of generation Z: reconnecting communities and spaces through imperfect health *(EUI-IA 2023-2027). To combat increasing mental health conditions especially of young people, We-Z aims to test an urban regeneration model based on the intersection of place and heritage making as remedies to human-urban fragmentation. Driven by the principles of the New European Bauhaus, the project develops the public spaces (open and not) of Vigne Nuove, a public housing complex built in the 70s in the northeastern periphery of Rome. Although characterized by the high experimentalism of Modern Italian architecture, the area remained incomplete and today is well known for its closeness and neglect, which is also reflected in prevalent feelings of mistrust between residents and public authorities.

To understand the potential of the city in supporting emotional wellbeing, the project advances a co-creation process based on the theory of recognition (Honneth and Fraser, 2004), exploring alternative ways to enhance human and urban patrimonies. In order to re-activate affective bonds between people and places, the new realised attractors (green, public, welfare spaces and related facilities) become durable transitional devices that foster new common goods and productive ecosystems. Following the life-lines emerging in the district, the paper reflects upon the nexus between public spaces. To this end, it delves into the results of a research activity developed through the Living Lab methodology along three main trajectories: 1) "hidden dwelling": through a process of mapping of the transformations from public to private space with the objective to recognize the housing emergency of the occupants and, revealing the hidden while opening a path towards possible scenarios of future affirmation; 2) memories collection and archiving: a qualitative process of valorizing the collective knowledge situated in the territory, through the collection of material (photos, objects) and immaterial (oral history, interviews) testimonies; 3) co-design: a process advanced with the newly built community.

The methodology combines participatory research with design interventions, emphasizing the transformative power of co-producing relational spaces. This aligns with Geddes's (1915) transdisciplinary vision of education engaging hands, heart, and mind to facilitate social change. Through experimentation, heritage is understood as a dynamic process rather than a static condition, which shapes and is shaped by daily negotiations of urban space and socio-spatial relations.

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Exclusion of the vulnerable from public space with the added influence of urban transformation: The case of sex workers in Istanbul's Pera

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Cities have many layers, networks, and relations that include different activities while they house diverse groups that constitute the minority or majority of society. Cities also create their own written and unwritten rules while they are formed and reformed from their unique relations and networks. These rules are usually set by the majority and/or the authority, excluding—and even criminalizing—some groups in public spaces. Regardless of the pursuer, vulnerable individuals and groups are often left ignored, marginalized, and displaced not only from public spaces but also from the neighborhood and city they live in. Even if they remain in their city, their vulnerability deepens through deprivation of economic and social circles, narrowed living spaces, and increased risk of crime and loneliness. Adding to this the gentrification- and displacement-induced urban transformation practices, the conditions become even more dire.

Consequently, the overarching exclusion of vulnerable individuals from public and private spaces suggests that the city is usually a public domain ruled by the majority and authority. However, urban theorists argue that public space should promote democratic interaction and inclusivity. For instance, Lefebvre's 'right to the city' emphasizes fair access and participation (Lefebvre, 1996), while Soja's 'spatial justice' advocates for spatial arrangements that foster social inclusion and challenge systemic inequalities. Based on such speculations and the aspiration to fulfill the premises of social inclusion, this study aims to examine the concept of public space in relation to the socio-spatial exclusion of vulnerable groups at different levels, contexts, and geographies. It offers a multi-faceted investigation involving an international comparative analysis of legal and governmental frameworks and a close-up examination of a local case study in central Istanbul fueled by urban regeneration, focusing on a specific-but-immanent vulnerable group at both levels: laborers of the sex industry.

Today, there are estimated to be upwards of 40 million commercial sex workers worldwide, and the annual global income of the sex industry they work in is thought to be between 40 and 50 billion dollars (Taylor-Robinson et al., 2021). Despite high figures, the taboo around sex and sex work translates into social stigma, resulting in socio-spatial exclusion of sex workers. Furthermore, the majority of the sex industry is not regulated or under-regulated by the governments. By shedding light on the realities and perceptions of this vulnerable group, this study aims to address deep-seated inequalities and advocate for social and spatial justice in the case of the historic Pera quarter of Istanbul. One of the most well-known sex work areas of Turkey and located in central Istanbul, Pera has gone through urban transformations that affected the centuries-old sex work in the area, particularly in the last two decades.

The study's methodology is divided into four main phases. The first phase examines various perspectives and regulations on sex work from a global standpoint, incorporating both social and authoritarian approaches, with a particular focus on Turkey and Istanbul. The second phase explores spaces associated with sex work within the historical development of the Pera quarter. The third phase analyzes urban infrastructure and transformation projects in Pera, particularly in relation to the displacement of sex workers. The final phase synthesizes the findings by a superposed mapping exercise of sex work nodes in public space, urban regeneration projects, and their connection to the exclusion of sex workers. The results show the gap between urban regulations and the spatial needs of sex workers in Istanbul, highlighting social equity's role in reducing systemic exclusions to encourage more inclusive practices. It thus hopes to enrich the discourse on the sustainable development of public space by advocating for the implementation of inclusive, accessible, and socially equitable spaces.

Keywords:

Sex workers; socio-spatial exclusion; urban transformation; public space; Istanbul

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T_17 PUBLIC SPACE (A) / 1445

Public spaces and proximity in remote areas: a model for the Healthy City at the edge of urban density

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Public open and green spaces have been identified as being essential to the promotion of the well-being of urban areas and their communities (UN-Habitat, 2025). When integrated into public health-oriented urban planning strategies (WHO, 2020), they have been shown to be capable of mitigating spatial, environmental and health inequalities (UN-Habitat, 2023). The presence of an accessible network of usable public spaces, regardless of citizens' socioeconomic status, has been demonstrated to promote healthy lifestyles.

Numerous studies have underscored the environmental and health benefits of meticulously designed public spaces, including the reduction of atmospheric particulate matter and mitigation of local temperatures through the presence of vegetation (Junior et al., 2022). The facilitation of active mobility through the provision of safe and accessible walking paths has been shown to reduce air pollution and contribute to the prevention of chronic diseases (Sallis et al., 2016). In addition to the physical benefits outlined above, public spaces have been shown to have a significant impact on mental well-being by promoting socialisation (Roe et al., 2021).

The paper interprets public spaces as an integrated system of elements, including parks, pavements, sports areas and streets, with the capacity to ensure accessibility and inclusion, as well as facilitate access to essential services such as schools, health facilities and workplaces (Moreno et al., 2021).

In an urban context characterised by a dense fabric, planning an integrated network of public spaces for a health-oriented strategy presents significant complexities. This challenge is further compounded in sparsely populated remote areas, where services and public spaces are often distant, public transport networks are underdeveloped, and walking is impractical. In Italy, remote areas encompass approximately 60 per cent of the national territory (Lucatelli et al., 2022). These regions face significant challenges, including limited access to essential services, particularly in the domains of health and education. The limited connectivity with urban areas underscores the necessity to establish a network of social and health services, particularly in light of the ageing population and logistical challenges.

The paper presents the initial findings of the research 'THE -Tuscany Health Ecosystem', which is currently being conducted at the Department of Architecture in Florence as part of a partnership between the Universities of Tuscany and is financed by the National Recovery and Resilience Programme.

This study explores the concept of the healthy city in relation to issues of inclusiveness, integration between actors and the need to intervene on the accessibility of open spaces,

the quality of road infrastructure and public spaces in inner areas. The analysis is based on the application of the “HNH model” (Macchi et al., 2024), with a focus on the “X minutes” city (Moreno, 2024) investigating the concept of proximity and networks of public spaces. The model is interpreted as a useful tool for two main purposes: firstly, to carry out field investigations aimed at analysing the permeability of proximity public spaces and their interactions with social and health services; and secondly, to support co-design activities conducted with stakeholders, citizens and institutions. The model was subjected to an experimental process in an inland area of Tuscany, with the Municipality of Bibbiena designated as the case study. The objective of this experimentation is to enhance the quality of life of citizens by promoting healthy lifestyles, facilitating access to social and health services in inland areas and developing shared visions that are oriented towards the design of a close and healthy city. The central aim of the present paper is thus to contribute to the Healthy Cities urban planning debate by proposing a methodology that can also be replicated in low-density urban settings.

Keywords:

healthy city, proximity, remote areas

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T_17 PUBLIC SPACE (A) / 1405

The Italian Integrated Water Service Companies as a Promoter of Soil Unsealing Processes

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As the adverse effects of climate change intensify in a globalised context of substantial urban expansion, urban mitigation and adaptation measures are becoming increasingly imperative (Short & Farmer, 2021). In the context of surface water management, the ‘sponge city’ principle is gaining popularity, often in application of the Low Impact Development (LID) principle (Liu et al., 2017). The objective of LID is to achieve ‘natural’ hydrology through design and control measures (Fletcher et al., 2015). Natural hydrology is

defined as the balance between runoff, infiltration and evapotranspiration volumes pre-urban development, achieved through a functionally equivalent hydrological landscape. Within the Italian system, the management of water resources is the mandate of the Integrated Water Service (IWS). The IWS is responsible for the collection, supply and distribution of water for civil uses, sewerage and wastewater purification. The entities responsible for the oversight of these services can be either public or private companies, operating within designated 'Optimal Territorial Areas'. These areas are characterised by an ideal management dimension, considering the physical characteristics of the water cycle and ensuring economies of scale (D. lgs. 152/2006). It is therefore evident that these societies are supra-municipal in nature. A strategic shift in focus, away from their traditional core business, has recently been initiated by a number of these companies. This strategic shift is characterised by the promotion and implementation of actions with the objective of enhancing urban drainage systems, mainly on public space. These policies, aimed at achieving a harmonious city-water relationship, are implemented through a combination of conventional 'hard' engineering interventions, e.g. detention basins, and more contemporary and sustainable approaches, e.g. LID, NBS, and SUDS.

This contribution aims to explore the ways in which the actions and projects of Integrated Water Service Companies (IWSC) are able to promote public space initiatives that enhance resilience to climate change and environmental sustainability. The selection of the case studies will be based on two criteria: the optimal territorial areas of IWSCs - those that are highly urbanised, and the effective role of IWSCs as promoters of soil unsealing processes. The analysis will be conducted on a selection of case studies, chosen to ensure geographical diversity - in order to provide a comprehensive overview of the most significant actions based on stakeholder involvement, urban planning tools used, spaces involved and actions applied.

The analysis will proceed according to fourfold criteria. Firstly, a classification of the type of interventions implemented and their relation to other benefits in addition to urban drainage (e.g. temperature regulation, enhancement of urban biodiversity, etc.). Secondly, the identification of regional and local policies that enabled and supported the success of the projects. Thirdly, the mapping of relevant stakeholders (including the public, private and civil society sectors) alongside the level of interest and involvement in the planning, execution and maintenance of soil unsealing initiatives. Finally, the evaluation of the projects' effectiveness, equity and scalability.

The analysis is expected to generate three primary outcomes: namely, the identification of pivotal success factors, prevalent barriers, and pioneering solutions. The objective of this study is to synthesize the conditions for successful IWSC-led soil unsealing projects, thereby providing actionable insights for policymakers, urban planners, and water management professionals. This will contribute to sustainable and equitable urban development in response to climate change within the Italian urban context.

Keywords:

Soil Unsealing; Urban Water Management; Climate Adaptation; Integrated Water Service

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T.17 PUBLIC SPACE (A) / 366**Resilient hope: sustaining neighborhood living rooms as everyday activism****Author:** Louwrens Botha¹**Co-author:** Oana Druta¹¹ *Eindhoven University of Technology***Corresponding Authors:** l.botha@tue.nl, o.druta@tue.nl

Neighborhood living rooms ('buurthuis kamers') are a distinct form of public space in urban neighborhoods in the Netherlands. As social and community spaces of meeting, encounter and connection, they play an important role in maintaining feelings of home and liveability in urban neighborhoods under austerity and neoliberal governance regimes, allowing communities to 'weave new networks of trust and care amid the alienating pressures of the capitalist cityscape' (Huron, 2015). At the same time they represent spaces of *hope*: existing somewhat beyond the conventions and restrictions of both the market and the state, 'buurthuis kamers' offer participants the opportunity to 'act otherwise' and to enact and embody preferred forms of social relations, governance and priorities. In this way they function as 'everyday utopias' (Cooper, 2014) which demonstrate alternatives to the neoliberal status quo and offer tangible hope for transformed everyday realities.

Based on a year-long ethnographic study in four such neighborhood living rooms, we show how the continued existence of these spaces is made possible by the physical, emotional and administrative labor of dedicated organizers, facilitators and volunteers who work to keep the space open, facilitate social relations, organize activities, produce and reproduce a feeling of home, and fight further cuts, austerity and privatization. What motivates these actors to become involved in this kind of work, and to keep doing it in the face of these challenges and the potential for burnout and despair? This paper draws on embedded fieldwork and interviews with key actors to explore the meanings and motivations of their work, demonstrating how their personal backgrounds and experiences, the pleasures of participation and togetherness, and their desire for and belief in change inform their continued efforts. These accounts illustrate the ways in which 'buurthuis kamers' constitute prefigurative spaces of hope which cultivate and sustain their participants' belief in 'another world in the world' (Moten, 2013), and how this belief in turn allows community actors to sustain these spaces.

Keywords:

everyday practice; community spaces; activism; prefiguration; hope

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T.17 PUBLIC SPACE (A) / 1621**From Car-Centric to People-Centric: Developing Street Transformations through environmental and community involvement ap**

proaches

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The majority of urban open spaces are designed for motorised vehicles, highlighting the role of the street as a means for maximising car efficiency and space for transportation, stripping it of its social dimension and placing people in the margins of public spaces. Various problems, including high levels of environmental pollution, noise, high energy consumption and inactive lifestyles have arisen from this car-centric urban planning. To address these issues, cities worldwide have started to develop and implement different strategies and models to transform the streets into more liveable and healthy public spaces by reducing areas devoted to cars and reallocating them to soft mobility. These interventions aim to reclaim the spaces dedicated to motorised vehicles, reshaping the role of the street from strictly functional to an open public space that generates different aspects of urban life, affecting the quality of the urban spaces, social interaction, physical activity, economic and environmental factors.

The scoping review previously performed by the authors on the topics of the already implemented street transformations for active mobility indicated significant gaps related to community involvement and environmental impacts. On the one hand, the articles highlighted the importance of participative processes and community involvement in the development of street interventions for active mobility to create inclusive spaces, catering to the needs of the citizens (Lunetto et al., 2023; Vásquez et al., 2024). On the other hand, no article was found evaluating thermal comfort improvement in these interventions, even though previous literature indicated the potential of such transformations to mitigate heat stress (Nieuwenhuijsen, 2021). These aspects, thermal comfort and environmental health on one side, and mobility and social use on the other, are rarely studied together. However, both factors directly influence the experience, behaviour and appreciation of users of urban spaces.

To address these gaps, we are proposing a citizen science approach for the development of street transformation plans and projects, as a bridge between the different scientific approaches and social requirements. In recent years, citizen science has been increasingly used and researched as a tool for empowerment, behavioural change and collective action, increasing scientific knowledge and awareness of the public while crowdsourcing data for research purposes (Sardo et al., 2024). The citizen science approach has been already used in different projects and research in the fields of microclimate (Květoňová et al., 2024) and sustainable mobility (Sardo et al., 2024), demonstrating the importance of citizen involvement in the co-design of the projects and policies. Integration of citizen participation into street redesign processes could facilitate more inclusive, context-sensitive, and scientifically informed urban planning practices. Furthermore, the contribution of citizen science has been recognised by several scholars within the so-called Post-Normal science approach, which deals with the social soundness of applied science, science-based professional advice and scientific policy advice in situations of high stakes, high uncertainty and contested values (Hakalay, 2023). Such framework can be recognised in the domain of street rethinking, often characterised by public controversies and complexity.

The paper will illustrate the research process underway in the northern suburbs of the city of Turin (Italy), aimed at measuring, simulating and mapping the urban microclimate during hot seasons and heat waves by researchers with groups of citizens, mainly high school students. The goal of the research is to promote awareness of the necessary changes in the characteristics of public spaces in terms of use, mobility modes, shape, vegetation and surface materials. The interests and differences between the viewpoints of young citizens, scholars and experts will be discussed to reveal barriers and gaps in approaches to street redesign that meet the needs of communities and the environmental sustainability of cities.

Keywords:

street transformation; microclimate; thermal comfort; citizen science

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T_17 PUBLIC SPACE (A) / 979

Community Reading Spaces as Social Infrastructure: A Case Study Based on Nanjing, China

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With the rapid societal changes and the progress of urbanization, traditional libraries are increasingly unable to meet the diverse cultural service needs. The public's perception of the role of public reading spaces has gradually shifted from venues that store books to being a form of social infrastructure that promotes social interaction. In recent years, a large number of community reading spaces have been developed in China. These spaces not only carry out traditional libraries' functions but have also evolved into essential platforms for promoting community interaction, supporting social engagement, and fostering cultural innovation. This study focuses on community reading spaces, conducting a comparative analysis of different operation models to explore how these spaces contribute to social equity and social interaction, with particular attention to design and service.

Grounded on social infrastructure theory, the study interprets the social benefits of community reading spaces from the perspectives of social justice and social support. As social infrastructure, community reading spaces should ensure equal access to cultural resources for all community members, especially in low-income communities. Through decentralized and localized designs, these spaces improve the fairness of cultural services. Secondly, the design of community reading spaces should not only focus on knowledge transmission but also emphasize social support and community interaction. Through flexible layouts and multifunctional space designs, these spaces promote interaction among residents.

The research selected several typical community reading spaces in Nanjing for case comparison and analysis, examining their social justice and social support from three dimensions: operational model, spatial design, and service provision. The cases include public service facilities, creative bookstores, and community cultural centers, which represent

service-oriented, profit-driven, and mixed-function types, reflecting the involvement of different stakeholders in the implementation and operation process of community reading spaces. In terms of spatial design, this study analyzes the space layout, functional zoning, and the setting of communication areas, exploring how these elements facilitate social interaction and cultural sharing among community members. Furthermore, the study collected feedback from community residents through surveys and interviews, analyzing the effectiveness and shortcomings of different types of spaces in terms of service quality, cultural function, and social support. The user feedback data also provides strong support for assessing the effectiveness of space design and the fairness of social services, particularly in optimizing space layouts to meet the needs of various community groups, such as the elderly, children, and people with disabilities.

The research results not only reveal the pathways through which different operation models fulfill their functions as social infrastructure but also provide theoretical support for future community reading space designs. Specifically, by enhancing collaboration among different stakeholders and emphasizing the flexibility of space design and the inclusivity of service configuration, community reading spaces can better serve their role as social infrastructure and drive the development of urban culture.

Keywords:

community; reading space; social infrastructure

T_17 PUBLIC SPACE (A) / 1475

Production of public spaces in marginal territories in Santiago de Chile. Learning from the city's and society's visions generated from self-organization and the opportunities for their integration into planning.

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The role of public space continues to be significant amidst substantial transformations in political systems across various European cities (Madanipour & Knierbein, 2004; Svirsic, Zlatar, and Niksic, 2021). In current discussions and in response to that, even the term 'public space' has increasingly evolved into 'common space' (Castro & Martí, 2016; Hardt & Negri, 2011; Foster & Iaione, 2016; Heyden, 2017; Stavrides, 2016, 2017). There is a notable tension between the capitalist model, which prioritises profit, and the emancipatory efforts held by the agency among organised inhabitants. Concerning public spaces, this theme is a discussion point in Europe and Latin America as both continents navigate various political models. In Chile, the transformation from a state-centred model to a neoliberal approach has had obvious impacts (Rodriguez & Rodriguez, 2009). As a result, inequalities have become particularly visible in peripheral urbanisations, and, at the same time, that is where emancipatory strategies have become more evident, too. These are territories where memories of collaboration with the state in the 1960s evolved, and a strong self-organisation emerged, confronting the imposition of the subsidiary model during the dictatorship. Today, the original way of producing community life and common space in squares, streets, courts and social centres in these urbanisations has become more complex. While the founding generations built their lives around solidarity networks and economies of exchange, newer generations face the dilemma of either continuing to foster this original lifestyle or adopting more individualistic and consumption-oriented contemporary lifestyles. Our research highlights the process of producing common spaces through the agency of residents and their interaction with urban decision-makers. The findings focus on processes that have enhanced inclusion

and aim to identify the particular self-construction practices and the resulting spaces to drive future change. Understanding this 'reservoir of the commons' also allows for a re-examination of the role of urban planning and its potential to support the aspirations of the city and society that communities represent. Learning from these experiences allows us to discover the keys to moving up the ladder of more active participation (Arnstein, 1969; Hordijk et al., 2015). We seek to understand the visions of the city and society that underpin everyday actions by residents concerning the use and appropriation of squares, streets, social venues, and sports spaces. Aligning with other authors (Hou, 2010; Makakavhule in Landman & Mady, 2022; Dodd, 2020), our research initially aims to adopt the perspective of residents' agency. We examine what motivates inhabitants to influence the spaces of the "commons," the specific spaces where this agency is visible, and the current crises it encounters.

On a second level, we aim to identify how urban planning actors recognise the significance of local knowledge and residents' creative abilities to connect with their sense of agency in constructing common space, thereby contributing to an ongoing debate about planning transformation (Hordijk et al., 2015; Hanzl, 2007; Cruickshank & Coupe, 2013). This socio-spatial study of a dozen common spaces within a community participating in an 'Operation Sitio' settlement in Santiago has been analysed by field observation and qualitative methods longitudinally over five years and transversally concerning its inhabitants, leaders, and planners. The significance of this case lies in its potential for replication, as there are over 460 neighbourhoods of this nature, covering 52 km² in Santiago and a total of 91 km² in Chile.

Keywords:

common space, participation process, self-organization, peripheral urbanizations, Santiago Chile,

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T.17 PUBLIC SPACE (A) / 1438

Disparity and Gap Between Urban Planning and Publicity: The Case of New Central District of Izmir

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Production of public space especially in a city center is a long-lasting process which needs to provide a balance between private and public sphere and space through the planning and urban design process. After the privatization has become prevalent, the publicity sense and acceptance have been changed dramatically in terms of the private profits and the public concept has lost its importance. However, a comprehensive planning paradigm accepts that urban planning process is mainly a public activity based on public benefits. Comprehensive planning discourse has tried to create a public space as a most ontological component of public context. On the other hand, the post-neoliberal urbanization process dismissed production of public space as a policy based on the capital demands.

Old city center of Izmir, from Roman to end of the Ottoman period, mainly consists of a historical quarter (Kemeraltı and Basmane) and a modern planned quarter to the north, dated in early Republican period -both of which are well integrated. This central district is rich in diversity, public places and intensity of usage. As the city grew, capital demands began to put pressure on the historical center and its environs, and in the 1960s and 1970s, planning decisions were developed to reduce this pressure. In this period, rationalist, positivist and inclusive urban planning approach widely accepted in the world also affected Türkiye's planning practice. Being associated this reflection, a comprehensive plan was produced for Izmir city. In 1973, this new plan proposed a new, modern, and dense center in the north part of Alsancak behind the harbor area, which was also a part of first industrial zone of Izmir and thus very rich in terms of publicly- owned spaces. Planners and decision makers made this decision to prevent the transformational demands of the capital on the historical center. High-scale plan decisions continued this proposal, but these decisions could not be implemented until the 2000s. In 2001, an international urban design competition was launched that challenged urban planners and architects to find a medium-density public and private balance for this area. However, regardless of the proposals of the winning competition project, a process of high-density construction has begun in the new central district, including the Bayraklı Turan areas behind the harbor, where large-scale public spaces have been rapidly occupied by the private. As a result the NCD has been plagued by many problems such as lack of public places, etc.

This paper aims to discuss mainly the changing publicity context in urban planning through the transition of capital accumulation process over the case of New Central District (NCD) of Izmir. For this purpose, this paper will examine the changing planning process, objections, judicial process, and related actors'discourses on the basis of private/public conflict. The plan decisions will be examined in terms of the parameters which represent the publicity and public space concepts such as accessibility, quantity, qualities, inclusiveness, conservation dynamics, and disaster resilience of place. As a result, in the NCD of Izmir, large-scale public areas have been transformed to the private spaces and a new form of publicity such as the privately owned public space (POPS) has emerged. In this framework, this paper will discuss following questions:

1- Is Planning process without a public context the end or a new beginning, ontologically speaking?

2- Does new capital accumulation need to create public space anymore? Or are new privately- owned public spaces a new form of public space?

In conclusion, this case will allow us both answer the aforementioned questions and give us a comprehensive perspective about how urban planning practice has transformed in public context in Türkiye.

Keywords:

Public space, urban planning, new city center, Izmir

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T_17 PUBLIC SPACE (A) / 820

Where do different income groups encounter each other? Assessing the impact of new metro lines on income-based activity-space segregation

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With the rapid urbanization and increasing population mobility, cities worldwide are facing severe challenges related to segregation and inequality (Florida, 2017). A diverse population composition is vital for fostering social cohesion within urban areas (Moro et al., 2021). **Income segregation, stemming from the uneven spatial distribution of income groups, could profoundly undermine urban residents' equitable access to amenities and resources (Lees et al., 2013).** This phenomenon manifests not only as static residential segregation tied to housing disparities (Wong and Shaw, 2011), but also as dynamic segregation in daily activity spaces. Such activity-space based segregation may impede spatial integration among diverse groups (Wang et al., 2012), utterly eroding urban vitality.

In recent decades, the rapid expansion of urban rail transit networks has not only significantly enhanced urban mobility, but also exert profound influences on regional economies and social structures. **Urban rail transit provides residents with a more efficient and sustainable travel option and reshapes the spatial distributions of income groups by altering urban economic activities and population flows, thus potentially affecting the income segregation within activity spaces (Deng and Zhao, 2022).** Some research posits that rail transit development could accelerate gentrification, exacerbating wealth disparities, and intensifying income-based activity space segregation (Heilmann, 2018). Conversely, other studies highlight the potential for public transport infrastructure to improve urban mobility and accessibility, thereby alleviating income segregation and fostering social integration (Loo et al., 2024). **Nevertheless, the causal mechanisms driving these impacts remain unclear, highlighting the need for further investigation.**

To address the research gaps, the study aims to answer the following three research questions using Shanghai, China as a case study:

- 1) How does the opening of new metro lines affect income-based activity-space segregation?
- 2) How does the new metro opening influence daily activities of different income groups across the temporal and spatial dimensions?
- 3) Do the metro effects show heterogeneity across metro stations and urban locations?

Shanghai, a key economic and financial hub in China, faces pronounced challenges related to urban social spatial segregation. In this study, we leverage a large-scale mobile signaling dataset for millions of users and difference-in-differences (DID) models to analyze the causal impact of the inauguration of Shanghai Metro Line 15 on income-based activity space segregation and its heterogeneity across income groups and urban locations. **Preliminary research results indicate that opening of new metro lines can foster the encounter and interaction of different income groups, thus mitigating the activity-space segregation.** Specifically, the opening of Metro Line 15 has reduced the dominating concentration of low-income individuals in the station areas in pre-opening period, while increasing the visiting frequency and duration of the low-to-middle-income group. Moreover, the findings suggest that the opening of metro lines may have initiated an early-stage gentrification effect.

The study provide useful insights into the social equity implications of rail transit development. When planning for new metro lines, governments and relevant agencies need to fully consider the impact of new rail transit development on the socio-economic structure of the corridor. It is crucial to ensure the mobility and activity space of low-income groups, allowing diverse income groups benefit from the new transit infrastructure and facilitating their encounters and interactions.

Keywords:

Income segregation; Activity-space; Metro ;Mobile signaling dataset; Difference-in-differences

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T_17 PUBLIC SPACE (A) / 418

Study on the Vitality of Urban Public Space Based on Crowd Behavior Trajectories —A Case of Three Gorges Plaza in Shapingba District, Chongqing, China

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With the rapid progress of urbanization in China, the demand for urban public spaces has grown significantly. However, many public spaces lack the vitality needed to meet the diverse needs of residents. Enhancing public space vitality is crucial for optimizing relationships between people and between people and spaces. Establishing a scientific quantitative assessment framework and indicator system is a key step toward achieving this goal.

Crowd behavior trajectories, as an essential characteristic of public space vitality, serve as a vital link connecting human behavior and spatial elements. By analyzing crowd trajectories, the spatiotemporal distribution of activities can be uncovered, and the underlying spatial environmental factors can be evaluated. The point-line network model constructed from activity trajectories provides an intuitive representation of the physical and dynamic attributes of urban vitality.

This study uses Three Gorges Plaza in Shapingba District, Chongqing, as a typical case. Data on crowd activity trajectories and the spatial conditions of the plaza were collected through field observations and surveys. Key activity nodes and flow relationships were extracted. By integrating GIS technology and Gephi software, and employing spatial morphology analysis and complex network analysis methods, the study constructed a weighted complex network model comprising 123 nodes and 605 directed edges. Through visualization and analysis of the model's spatial vitality distribution, key factors influencing vitality were identified, leading to the development of a quantitative index system for public space vitality. This system spans both overall and localized levels, encompassing three indicator categories—accessibility, cohesion, and contact opportunities—and employs metrics such as graph density, average path length, degree centrality, clustering coefficient, and betweenness centrality to quantify spatial characteristics and activity patterns.

In the empirical analysis of Three Gorges Plaza, the study applied the inverse distance weighting (IDW) method to conduct spatial interpolation analysis of each indicator. The findings reveal the spatial distribution patterns of vitality: nodes with high accessibility are concentrated in central areas and entrances/exits; nodes with strong cohesion are located in functionally diverse public spaces; and nodes with high contact opportunities are concentrated at critical hubs, such as road intersections.

The results show that high-accessibility nodes in Three Gorges Plaza play a pivotal role in connecting surrounding areas; variations in the cohesion index are significantly correlated with the distribution of functional modules; and nodes with high betweenness centrality serve as core hubs for pedestrian flow conversion and aggregation. Based on these insights, the study proposes the following optimization strategies: (1) enhance the utilization of peripheral spaces by adding entrances to shopping malls and improving the quality of street-level businesses, thereby optimizing transitions between internal and external spaces; (2) increase the functional diversity of the plaza to boost usage frequency and stimulate spatial vitality; (3) strengthen traffic management and evacuation capacity in high-vitality areas to improve traffic mobility; and (4) explore the latent potential of the space by adding leisure facilities to balance vitality distribution.

Through the empirical study of Three Gorges Plaza, this research addresses the limitations of traditional spatial assessment methods in terms of quantification and objectivity. It provides new perspectives and methodologies for the quantitative evaluation of public space vitality, offering significant practical applications and reference value.

Keywords:

Urban Vitality; Crowd Trajectories; Spatial Morphology; Network Analysis

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T.17 PUBLIC SPACE (A) / 1696

Reclaiming or Excluding? The Evolution of Waterfront Redevel-

Development and Public Space in Genoa

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The ever-changing relationship between the water body and urban hinterland has been weakened by the increasing presence of industrial and port spaces in the inner-city waterfront that pushed cities away from the water and ended up as enclaved spaces in the longer term. Changing conditions in the inner-city waterfronts over the last half-century gave the possibility of re-integrating water-urban interfaces into public life, particularly through waterfront redevelopment processes. The projects and policies developed under the motto of reclaiming waterfront areas and reintegrating them into urban life for public use have been significantly altered over time. Especially recent waterfront regeneration strategies and practices demonstrate the opposite tendencies of the prior examples in the field regarding their profound impact on built environments, urban programs, and open spaces. Consequently, inner-city coasts are again defined by new enclaves that exclude the public realm.

Within this context, this research revolves around the question of how the waterfront redevelopment concept has chronologically shifted and their direct impact on public grounds. Increased influence of the market, changing involvement weights of stakeholders, the underlying rationale for waterfront regeneration, and their reflection on the hinterland's spatial and programmatic development of the waterfront projects from the emergence of the phenomenon to the current timespan are discussed by addressing back to the main idea of the "reclaiming waterfronts for the public".

This issue is examined in the case of Genoa, which has undergone different canonical waterfront projects since the late 1980s. It comparatively evaluates the public nature of the transformed spaces, from the Porto Antico regeneration to the ongoing Waterfront di Levante redevelopment, by focusing on the key dimensions of public space- ownership, accessibility, management, and inclusivity. Thus, the research employs digital humanities methodologies to advance spatial mapping strategies for the longitudinal analysis of public spaces emerging from waterfront redevelopment processes and their dynamic interrelations with broader urban hinterlands. The intergenerational shifts in Genoa's waterfront projects are analyzed within a broader framework to assess their impact on public ground, integration, and exclusion.

Keywords:

Genoa, waterfront redevelopment, public space, Waterfront di Levante, Porto Antico

T_17 PUBLIC SPACE (A) / 1721

Quests for Improving Visual Quality in Streets

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Streets are one of the important public spaces of daily life (Jacobs, 1961). Visual quality is an important factor that determines the attractiveness of these spaces and represents

a perceptual value that represents the visual experience resulting from street views (Qi et al., 2023). In urban perception studies, street views provide indicators that allow spatial quality to be evaluated from a human scale and make significant contributions to urban planning and design processes (Biliecki et al., 2021; Jiang et al., 2022).

Lothian (1999) suggests a mixed approach in which both objective and subjective paradigms are used together in evaluating the visual quality of the natural and built environment. The literature review reveals that mixed method approaches to the aesthetic environment are limited. Nasar (1998) examined the effects of street views on people by addressing psychological factors that include subjective evaluations in the evaluation of environmental perception.

It is stated in the literature that studies on the effects of different seasons on individuals' urban perceptions and aesthetic preferences provide important findings (Zhao et al., 2017; Kuper, 2020). Seasonal change of green spaces on the streets is an important component of landscape perception and aesthetic evaluation in studies on visual quality (Junge et al., 2015). How people perceive the aesthetic value of a green space depends on both the physical characteristics of the green space and the perceptual processes that these features evoke in the viewer (Daniel, 2001). However, it has been observed that comparative studies addressing seasonal differences are limited in studies evaluating visual quality through street images (Junge et al., 2015; Palang et al., 2007; Stobbelaar and Hendriks, 2007). In the detailed literature search conducted with the keyword "seasonal differences", a total of 131 sources were reached in the Web of Science (WoS) database. However, the deficiencies in existing research limit our ability to fully understand how human perception and aesthetic preferences are affected by different seasons. In contrast, comparative studies addressing seasonal differences are reported to provide important information on how they affect people's perceptions and aesthetic tastes (Zhao et al., 2017; Kuper, 2020).

This study aims to analyze the effects of seasonal changes on visual quality through street images in Mebusevleri Neighborhood, one of the planned neighborhoods of Ankara during the early Republican period. By comparatively examining street images from different seasonal periods, the elements that determine the visual quality of urban spaces will be revealed. Fractal analysis (Cooper et al., 2010) and image statistical analysis will be applied to objectively evaluate the visual qualities of the streets, and a survey will be applied to subjectively evaluate aesthetic taste through street images. The relationship between the quantitative data set obtained with fractal analysis and image statistical analysis and the survey results will be evaluated using the correlation method. The findings will provide important clues for improving the visual quality of streets and therefore cities. As a result, the study will contribute to the creation of higher quality urban public spaces by using the existing urban fabric as a laboratory based on past experiences.

Keywords:

Public space, street trees, visual quality, seasonal differences

T_17 PUBLIC SPACE (A) / 456

The Potential of Informal Farms on Urban Wastelands: Pathways to Eco-social Justice in Xi'an, China

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Urban wastelands, as abandoned, underutilized, or functionally ambiguous lands, are often regarded as "spatial fragments" or "marginal spaces" in urban development, typically lacking clear functional designation purposes (Gandy, 2013). In the Chinese context, informal farms are generally part of urban wastelands created by urban villages or other communities using minimal materials and basic construction methods. The

emergence of such informal farms is entirely spontaneous, driven by the self-organized actions of surrounding communities. However, informal farms often lack legal land use rights and remain excluded from formal urban planning frameworks. These place informal farms in a “gray zone”, with their existence largely contingent on local governmental tolerance and enforcement discretion. Nevertheless, these spaces maintain significant eco-cultural, and social value, contributing to efforts to reduce carbon footprints, tackle food security challenges, and empower marginalized groups, which were understudied (Wang, 2024).

The study examines the social and environmental justice value of informal farms in urban wastelands in Xi'an, northwest China. Research methods use field observations, in-depth interviews, and textual analysis to investigate informal farm practices in these urban wastelands. The study further explores the significance of incorporating such practices into urban planning frameworks, emphasizing their potential to become an integral component of urban ecological and cultural services.

Four key findings are revealed in this study. Firstly, informal farms significantly enhance food security by providing safe and reliable food sources for urban low-income and marginalized groups, reducing their dependence on expensive organic markets. Moreover, to strengthen community cohesion, informal farms foster collaboration and interaction among neighbors through shared labor, resources, and spaces, improving social relationships. Community participation in farmland management further enhances residents' sense of belonging and responsibility toward their community, promoting overall community cohesion. Additionally, in terms of community empowerment, the cultivation process not only increases residents' control over public spaces but also reflects respect for the participation rights and voices of marginalized groups in urban governance. Finally, regarding environmental equity, the transformation and reutilization of urban wastelands mitigate the uneven distribution of green space to some extent, especially in low-income communities, which improves the overall accessibility of urban green spaces, contributing to a more equitable distribution of environmental resources. Informal farms, as a form of spontaneous participation, represent community residents' response to urbanization, serving as a platform to express their needs. These contested spaces require inclusive engagement to safeguard residents' rights to the city and prevent marginalization from exacerbating inequalities (Nikšič, 2017).

This study fills the research gap for informal farms on urban wastelands in northwest Chinese cities, emphasizing that community-driven informal farms represent a crucial pathway to achieving spatial justice, environmental equity, and social sustainability. It offers policy development and urban planners a more sustainable and equitable perspective. Future research should further explore how policy tools and community engagement mechanisms could transform informal farms from temporary and fragile into long-term social and ecological benefits.

Keywords:

Urban wasteland; Informal Farm

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T_17 PUBLIC SPACE (A) / 1814

Visual Perception of Universal Design Interventions for World Heritage Sites: Case of Istanbul Historic Peninsula

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Universal Design is focusing on the seven principles addressed by Story, Mueller and Mace (1998) in North Carolina State University Center for Universal Design, for enhancement of inclusivity for various fields and scopes of design. Some of those principles are; principles of perceptible information, simple and intuitive use and size and space for approach and use, especially need enhancements that are aimed to be visibly highly noticeable, can be used intuitively or self-directing the audience for the utilization. To achieve these, some interventions are generally made through physical space for added visibility and attention. In many scenarios those interventions for inclusive design are taken as part of the design process and creatively reflected as a part of the public space eventually. However, when it comes to historic or urban heritage sites the visual unity and coherence of the heritage value comes from this unique nature of the heritage landscape itself; therefore potentially the addition of highly visible indicators or cues for universal design might be contradicting with the idea of the nature of interventions for these areas. The core tension of this study is focusing on the question of conflicting nature between inclusive urban design applications and interventions and the conservation purposes of the World Heritage Site where the minimum intervention especially the interventions resulting in the alterations of the landscape of the site and the overall visual perception of the site and/or its outstanding universal value. Focusing on this conflict, this study aims to find possible answers to the questions of “is it possible to apply universal design principles of urban design projects of public spaces in Urban Conservation Areas?” and if so “How to enhance the visual perception of the inclusive design indicators for a public space with an urban heritage value; especially for the World Heritage Sites without causing disturbance on the value of the site?”. While maintaining the main emphasis on universal design principles, how site-specific urban design solutions can apply and how they will be perceived by the users of public space is the scope of this research. Methodology of the research is consisting of two parts; first, in depth interviews with users of public spaces located in World Heritage Site of Istanbul Historic Peninsula will be conducted and second a survey with over-100 participants will take place; investigating the responses of the participants on the scenic depictions of World Heritage Site and Public Spaces and Landscapes within case study area, including variations of universal design applications. Results aim to discuss and find out the possible parameters for universal design tools specifically of heritage sites.

Keywords:

Inclusivity; Public Space; World Heritage Sites; Accessibility; Universal Design

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T.17 PUBLIC SPACE (A) / 639

Healthy public spaces in cities for a better future: integrating strategies for accessibility, recreation, and community well-being

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Urban spaces play a crucial role in shaping social behaviors and the quality of life of residents. In this context, urban structures also influence public health outcomes. The quality of green spaces, accessibility to recreational infrastructure, and pedestrian-friendly urban design significantly impact residents' health. However, the implementation of these elements varies across cities. Analyzing the relationship between the accessibility of urban spaces for non-motorized users (walkability) and the location of health-promoting infrastructure can provide valuable insights into optimal urban planning strategies.

This study analyses how the accessibility of recreational infrastructure aligns with health policies to support pedestrian mobility and public health outcomes. The research focuses on an interdisciplinary approach to analyzing urban health infrastructure in the centers of three European cities (Łódź, Aveiro, and Enschede). The selected cities represent diverse European urban contexts, offering insights into varied health policy implementations and urban planning strategies..

The first phase of the research involves mapping key elements of the urban landscape, such as green spaces and recreational infrastructure supporting physical activity. This includes both indoor facilities (pools, fitness clubs) and outdoor amenities (sports fields, outdoor gyms).

The second phase examines the accessibility of urban spaces for non-motorized users, correlating data on the existence of health-promoting infrastructure with its direct accessibility within the city. The focus is exclusively on pedestrian mobility (walkability), emphasizing the shift from institutionalized health measures toward organically integrating healthy lifestyles into communities.

A critical final phase of the study involves analyzing the alignment of these findings with the statutes and programs of public health institutions in the three countries corresponding to the examined areas.

The results will help policymakers, urban planners, and public health institutions to design inclusive and equitable public spaces that promote social justice. Identifying best practices applicable worldwide will contribute to improving residents' quality of life and making urban spaces more pedestrian-friendly. Moreover, the comparative analysis of health policies will help identify areas requiring intervention at both national and local levels. This study bridges geospatial urban analysis with health policy evaluation, contributing a novel framework for planning healthy urban environments.

In conclusion, the project underscores the importance of integrating green spaces, recreational infrastructure, and walkability as essential components of healthy urban environments. The interdisciplinary approach, combining geospatial analysis with health policy evaluation, can deliver comprehensive recommendations for creating sustainable, healthy cities and robust urban development strategies that promote public health.

Keywords:

public space; inclusion; sustainability; health; walkability

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T_17 PUBLIC SPACE (A) / 362

Designing Accessibility Public Spaces in Old City Communities Based on the Outdoor Activity Characteristics of People with Disabilities: A Case Study of Chengxian Street Community in Nanjing.

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Urban accessibility construction from a global perspective emphasizes the enhancement of inclusiveness and equity in cities. Community public spaces, as central hubs of daily life, serve as crucial entry points for advancing urban accessibility initiatives. With the aging population and a growing number of individuals with disabilities, the creation of barrier-free environments in the older urban areas of Chinese cities has become a focal issue. This involves analyzing the outdoor activity characteristics (frequency, type, and scope) and variations among individuals with differing mobility levels in these communities, as well as exploring the relationship between outdoor activities and community public spaces. Based on these findings, strategies for enhancing accessibility in public spaces within older urban areas can be developed.

This thesis employs questionnaire surveys and in-depth interviews to examine the accessibility needs of community public spaces for individuals with disabilities and propose targeted design strategies. Specifically, it focuses on the Chengxian Street community. First, 35 valid questionnaires were collected through surveys, behavioral observations, and interviews with all disabled residents in the community. Additionally, 78 travel trajectories were recorded and analyzed, with the temporal and spatial distributions visualized using ArcGIS. Second, the research identifies key patterns based on travel frequency, destinations, and needs, uncovering trends in time-sequenced travel, spatiotemporal circulation, and public space usage behaviors. These findings highlight significant challenges in the accessibility of community public spaces. Finally, the study proposes an inclusive design framework for improving public space accessibility, addressing five dimensions: target orientation, standard setting, spatial siting, spatial layout, and accessibility facilities. By considering the behaviors and needs of vulnerable groups, this framework seeks to advance the construction of inclusive, safe, and sustainable cities and communities.

Ultimately, the thesis revisits the social model of disability studies, offering actionable strategies to enhance the accessibility of public spaces for disabled communities and contributing to the broader goal of fostering equitable urban development.

Keywords:

Community Public space—Accessibility Strategies—Characteristics of outdoor activities—disability

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T_17 PUBLIC SPACE (A) / 1034

Hubs of Hope: regenerative public space as acupuncture points in South Africa

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Cities worldwide are changing, and so are the public spaces within them. At a point in history where the future is uncertain, and images of war, violence and conflict flash on various screens, many urban residents are hesitant to engage in public life and space. Growing polarisation, inequality and environmental threats drive people to hide behind barriers, feeling increasingly threatened and vulnerable. This often leaves public spaces desolate, neglected or avoided in many cities.

Planning, as transformative and often disruptive action, forced to deal with complex challenges, relies on strong narratives to inspire and move actors in the most appropriate direction. This paper tells a story of hope, highlighting the transformative action of two communities in the City of Tshwane to innate hubs of hope. The discussion shares the dreams and actions of a group of residents in an upper-middle-income suburban community and those from an informal settlement to highlight the transformative capacity of regenerative development and design in two different socio-spatial contexts in South Africa's capital city. Building on transformative practices related to regenerative development and design, the discussion spotlights planning as a transformative action in selected nodes.

Although the stories from the Muckleneuk Commons and Melusi Youth Centre are different, the two cases illustrate the value of public spaces as sites of hope. They demonstrate how communities can nurture hope for a better future and embody social justice, environmental sustainability and collective well-being aspirations. The author argues that community engagement in and with public spaces has the potential to change spaces of despair to places of hope through collaboration and empowerment that can ripple beyond the space and act as an acupuncture point in the larger urban environment.

Keywords:

Hubs of hope; regenerative public space; Tshwane; South Africa

T_17 PUBLIC SPACE (A) / 1603

Mediating Participation in Public Space Projects: Trust, Timing and Cooperation in European-Funded Urban Projects

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Public spaces are increasingly recognized as pivotal sites for fostering social interaction, cultural expression, and political engagement. However, face of social and climate challenges, their potential as environments for future shaping and hope fostering is intrinsically related to the effective engagement of diverse communities, aiming to overcome structural social inequalities. This paper investigates the transformative role of participatory processes in European-funded projects, with a particular focus on the initial developments of a public park in Porto (Portugal) through nature-based solutions. Drawing on a combination of literature review, theoretical analysis, and practical experience as urban professionals and researchers, this study explores the challenges of bridging and translating the demands of diverse stakeholders in a socially vulnerable neighbourhood with low trust in municipal proposals, as well as privileged groups with weak local ties. The paper examines how differing perceptions of time and rhythm between municipal actors and local communities hinder effective cooperation, focusing on the engagement phase of the park project funded by European resources. Key findings reveal both failed methodologies—such as over-reliance on bureaucratic timelines—and successful strategies for fostering trust, encouraging multi-level communication, and enhancing transparency among social and institutional actors. These strategies focused on the genuine participation of marginalized groups, aiming to create a shared vision that supports climate and social justice. By emphasising the importance of care, adaptability, and time-conscious communication and cooperation, this paper contributes to the understanding of how public spaces, when aimed at social equality and sustainability, have the potential to be sites of social-environmental progress. It offers insights and recommendations on how urban professionals and local administrations can better navigate complex social dynamics and bureaucratic constraints, fostering public spaces that contribute to possible and fairer urban futures.

Keywords:

public space, participatory processes, trust-building, social justice, local communities

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T_17 PUBLIC SPACE (A) / 1797**From transport corridors to integrated urban spaces: Transformation potential of Vienna's urban trunk roads****Authors:** Adrian Judt¹; Ute Schneider¹¹ *TU Wien***Corresponding Authors:** adrian.judt@tuwien.ac.at, ute.schneider@tuwien.ac.at

Historic trunk roads are formative elements of the urban fabric that play central infrastructural and functional roles. As public-owned linear spaces, they hold great transformation potential, especially when considered in conjunction with the adjacent urban fabric - for example with regard to mobility transition and climate change adaptations. Despite urban planning sovereignty in Vienna, arterial streets are still treated as linear traffic corridors, reinforcing spatial-functional separation rather than integrating them as inclusive public spaces. Hence, this study moves beyond standard cross-sections to explore the reciprocal relationship between street space and urban fabric in Vienna. It adopts a mixed-method approach, incorporating qualitative research, mapping, spatial analysis, and typology formation to identify challenges and opportunities of these streetscapes. The paper aims to illustrate the complexity of spatial, social and functional relations between neighborhoods and street space to open up new perspectives for sustainable transformations.

By analyzing historic development and spatio-functional interfaces between streetscapes and other urban systems, the paper identifies overarching structural characteristics and thus leading to categorization of streetscape typologies in Vienna. Subsequently, a comparative analysis focuses on the morphological aspects of these typologies. The range of impact of relations between street space and urban fabric is analyzed, particularly with regard to porosity and programming. Does the urban morphology relate to the quality and use of public space? Which public and semipublic space foster relations between streetscape and hinterland? What are factors for separation? What are typical threshold spaces or special elements in interconnected zones?

In the further course of the work, the analysis is deepened in selected key spaces in order to reveal exemplary activities, patterns of action and neighborly relations in the tension field of built space, programming and everyday use. Through the systematic cataloguing and assessment of processes and relations at different scales, the Viennese streetscapes are taken out of their proverbial urban periphery and made accessible to experts. The cross-scale and integrated perspective of the research illustrates the potentials but also the challenges of the streetscapes of Vienna's historic trunk roads, which should provide new research impulses and enrich the public discourse beyond Vienna.

Keywords:

Streetscape ; Urban Fabric; Typologies; Morphology; Transformation

T_17 PUBLIC SPACE (A) / 262**Optimization and simulation verification of urban open space pattern under the impact of urban heat island****Author:** Hanxun Fu¹

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Open spaces in cities, serving as vital carriers of blue-green infrastructure and urban wind corridors, are crucial for mitigating urban heat island effect (UHI). This study aims to further investigate the complex relationship between open space morphology and UHI, propose corresponding optimization strategies, and validate them through simulation.

Taking Xishan District in Wuxi City, Jiangsu Province as the study area, the study classifies open spaces into seven categories by using Morphological Spatial Pattern Analysis (MSPA) method and Geographic Information System (GIS) technology. The study uses Python and machine learning algorithms to explore the linear and non-linear correlations between various open space patterns and UHI, elucidating their roles in urban microclimate regulation. The study selects 9 typical area samples in the district and optimizes their open space patterns. This includes increasing green space areas, adjusting the morphology of open spaces and increase the connectivity of green space and water bodies. The urban climate environment before and after optimization is simulated by CFD tools. This simulation verifies the effectiveness of the optimization measures in UHI mitigation.

The results indicate that increasing Cores and Bridges in open spaces positively impacts the mitigation of UHI, while Islets in open spaces exacerbate it. The findings are confirmed through simulations in the four sample areas. Increasing the area of open space, reducing point-like open space and enhancing continuity of green belts can effectively reduce urban surface temperature and improve urban microclimate conditions.

In conclusion, this study explored the relationship between urban open space morphology and UHI through spatial data analysis and simulations. This can provide empirical evidence and practical solutions for urban planning and design, contributing significantly to enhancing urban resilience and addressing climate change challenges.

Keywords:

Urban open space, heat island effect (UHI), machine learning

T.17 PUBLIC SPACE (A) / 1605

Small-scale actions increasing social interactions: Temporary interventions impact on citizens' participation and use of public spaces

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One of the central tasks of city public spaces is to provide settings for unplanned social encounters and interactions (Mehta, 2013). Access to interpersonal participation and encounters in public spaces affects citizens' well-being (Toolis, 2017). Stevens notes, "It is in public open spaces that people are best able and most likely to engage with the social diversity gathered together in cities" (2007: 5).

However, critical theorists warn that public spaces may lose their open and democratic significance as meeting places (Bjerkeset, 2019). In their opinion, contemporary urban planning and design may limit democratic use of public spaces (e.g., Mitchell, 1995; Low, 2006) due to increased commercialization, commodification (Groth and Corijn, 2005) and privatization (Bergsli and Hanssen, 2017).

New and experimental planning efforts can counteract the fear of losing public life by allowing for future imagination and experimentation through tactile explorations in public spaces. Experimental planning practices can “create important openings in the rigid, formalized planning systems for greater flexibility and expedient change”(Hou, 2020: 118).

This paper explores temporary interventions as a form of experimental planning that can increase social interactions among diverse citizens through participation and use of public spaces. Temporary interventions can function as playful events that “encourage bystanders to join in, taking on a more active level of public engagement”(Stevens, 2007)

Through in-depth interviews with planners and designers working with temporary interventions and ongoing participatory observations of public space interventions in Oslo, Norway, this paper investigates how these interventions affect citizens' interactions in these spaces. The central question is how temporary interventions create opportunities for spontaneous and unplanned social encounters and interactions between strangers. As Goffman (1966: 124) states, “acquaintances in social situations require a reason not to interact, strangers require a reason to do so.”

The expected findings suggest that these interventions can stimulate encounters between strangers through participation in the moment and the short term. However, long-term interactions and use of these spaces depend on the interplay between the physical design's temporary-permanent dimensions and the evolving social dynamics.

Keywords:

Public space, temporary interventions, urban design, social interactions, participation

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T_17 PUBLIC SPACE (A) / 1399

The transformative power of art in public space: designing for inclusion and well-being

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Historically, public spaces have been central to civic life, fostering social interaction, cultural exchange, and collective expression. However, due to the increasing social inequalities, growing urban populations, and public health challenges, the importance of well-designed public spaces become even more evident. When thoughtfully created and activated, these spaces can serve as beacons of possibility, showcasing how community-driven planning and creativity can contribute to healthier, more sustainable cities.

This paper delves into the significant role that public art plays in building social cohesion and enhancing mental and physical well-being. More than mere aesthetic enhancements, artistic and design interventions, specifically public art installations and design elements integrated into sidewalks, and urban furniture such as benches or bus stops, can reshape urban experiences. They can inspire movement and interaction, making the public space more accessible, engaging, and restorative. This research explores how art and design can combat social isolation, nurture a sense of belonging, and promote mental and physical well-being in rapidly urbanizing environments.

The study employs a mixed-methods approach, integrating visual analysis, literature reviews, and case studies of inspiring global examples. For instance, Superkilen in Copenhagen showcases multicultural artistic elements that encourage movement and interaction. In Montreal, Musical Swings invites both physical activity and social engagement. Meanwhile, The Loop in Chicago transforms walking into a captivating artistic journey, while the Teeter-Totter Wall at the U.S.-Mexico border turns a politically charged space into a site of connection. Additionally, Rirkrit Tiravanija's Healing Pavilion in New York's Times Square illustrates how public art can offer moments of reflection and restoration amidst the urban hustle.

To assess the impact of public art on stress levels, physical health, and community connectivity, this research includes surveys and interviews with artists and public space users. By synthesizing these insights, the study aims to provide actionable recommendations for urban planners and community organizations striving to design public spaces that are inclusive and promote health.

Keywords:

public space; inclusion; well-being; urban revitalization; public art

T.17 PUBLIC SPACE (A) / 744

Does the 15-minute city increase neighborhood satisfaction? : A Case Study of Vila Franca de Xira

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Contemporary urban planning policies increasingly focus on proximity-based planning, most notably, the 15-Minute City concept (15-m city). In this framework, it is argued for the development of mixed-use neighborhoods, in which most essential services such as groceries, schools, health care, and recreation are located within easy reach on foot or bike. Even though the 15-Minute City paradigm has received much attention, its effects on residents' neighborhood satisfaction are still poorly investigated, especially in Portuguese mid-sized municipalities.

This work explores how urban environment features associated with the 15-Minute City concept contribute to neighborhood satisfaction. Based on the well-researched, theoretical underpinnings of residential and neighborhood satisfaction, incorporating both subjective (individual evaluation) and objective characteristics of the physical environment

while controlling for socioeconomic characteristics, we develop a Structural Equation Model (SEM) to test the relationship between neighborhood satisfaction and 15-minute city features. The data used in this model is collected via a survey implemented in the municipality of Vila Franca de Xira in the Metropolitan Area of Lisbon. The municipality of Vila Franca de Xira presents a specific context, combining urban cores and peri-urban elements. Its rich and varied built environment allows meaningful comparisons between different community types. The implemented survey assesses the subjective evaluation of physical and social dimensions including walkability, safety, cleanliness, access to amenities, social cohesion, and sense of community. From the survey, daily behaviors, such as trip-making and mode choice, as well as public space utilization are also captured.

The survey data is complemented by secondary data, characterizing the urban environment and land use patterns. Spatial analysis is then used to evaluate the objective measures of the urban environment (density, diversity, street characteristics, retail, and public facilities) and its alignment with the 15-minute city concept for the vicinity of the residence of each respondent. The integration of these subjective and objective datasets is then used to estimate the SEM model. The obtained results are then discussed in terms of the effectiveness of the different 15-minute features to increase residents' satisfaction. These results could guide urban planners and policymakers on how to increase well-being through proximity-based interventions to develop more equitable and sustainable communities. Finally, the research provides insights into neighborhood design to fulfill the needs of inhabitants encompassed within the 15-Minute City concept.

Keywords:

15-Minute City; Neighborhood Satisfaction; Walkability; Daily Behavior

T.17 PUBLIC SPACE (A) / 1155

Integrating Energy Performance and Public Space Metrics: A Study from the Perspective of Urban Design

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With rising temperatures and the accelerating pace of global climate change, a host of environmental challenges have emerged, demanding urgent and innovative solutions. Carbon-neutral urban planning and design have become imperative to mitigate the adverse effects of these challenges. As cities and buildings are major consumers of secondary energy, they play a critical role in reducing greenhouse gas emissions. Urban morphological elements, as fundamental components of urban design, significantly influence building energy performance, thereby impacting overall carbon emissions.

Previous studies have investigated how urban morphological elements affect building energy consumption across different climate zones, aiming to design low-carbon or even zero-energy urban blocks. However, while pursuing lower energy consumption, the external environment created by certain urban forms is often overlooked. Importantly, under the same floor area ratio (FAR), different urban forms can produce drastically different qualities of external public spaces. These variations in public space quality profoundly affect the experiences of urban users, particularly pedestrians, and have implications for spatial equity. Commonly studied urban morphological indicators—such as density, FAR, and building height—fail to fully capture the spatial characteristics of public spaces shaped by urban design.

Addressing this critical gap, this study adopts an urban design perspective to identify morphological indicators that account for public space quality, based on a review of urban design guidelines and practices. Three key indicators—alignment ratio, effective

street length, and street space density—are proposed to better understand the relationship between urban morphology, energy performance, and public space quality. To evaluate these indicators, a comparative study is conducted using a set of urban forms with identical FAR but varying public space configurations. Simulations are performed using Rhino, Grasshopper, and the Ladybug tool suite, under consistent climatic and environmental conditions, to assess the building energy performance of each configuration.

The findings reveal that certain urban morphological typologies can achieve a balance between low energy consumption and high-quality public spaces. By linking energy simulation results with public space metrics, the study identifies design strategies that harmonize these two objectives.

This research emphasizes the importance of performance-driven design in creating low-carbon urban blocks and offers valuable guidance for urban designers aiming to optimize both building energy efficiency and the quality of external urban spaces. By integrating these considerations into early design stages, the study provides a reference framework for achieving more sustainable and equitable urban environments.

Keywords:

low-carbon urban design; building energy consumption; performance driven design

T_17 PUBLIC SPACE (B) / 1783

Studentification and the Democratization of Public Space? New Social Interactions in a Turkish University Town

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Studentification—the social, cultural, and physical transformation of urban areas driven by the influx of student populations—presents opportunities and challenges for the cities that choose the path of student-centered urban development (Smith, 2005). The literature on studentification typically highlights how students stimulate the housing market in the neighborhoods where they cluster (Hubbard 2009; Smith and Holt 2007), how they contribute to the development of new commercial establishments by creating an important consumer class (Chatterton, 1999; Chatterton and Hollands, 2002; Ma et al. 2018), and potentially disrupt community cohesion through their antisocial behavior (Allinson, 2006; Munro and Livingston 2012).

Aside from a few studies, research on studentification has largely overlooked its diverse socio-cultural impacts, particularly its influence on daily routines and the cultural exchange between students and local residents. This study aims to address this gap by exploring whether studentification can serve as a catalyst for inclusion, equity, and positive change through community empowerment and the expansion and democratization of public spaces in university towns in Turkey.

By focusing on Kayseri—a rapidly transforming and traditionally conservative city in Central Anatolia, Turkey—this research examines the complex dynamics of student-centered spatial development and its impact on social life and public space usage. The study is part of an ongoing TÜBİTAK 1001 project investigating the socio-cultural impacts of the studentification process in six Central Anatolian cities, including Kayseri. Employing a mixed-methods approach, the research incorporates quantitative surveys and qualitative interviews with long-term residents to explore diverse local perspectives on the sociocultural transformations driven by studentification.

The study reveals distinct patterns of neighborhood transformation in commercial and

residential districts, highlighting the temporal and spatial evolution of public spaces. Findings indicate that different demographic groups perceive and practice public life in varied ways, leading to complex and contested spatial patterns of daily practice and social interactions.

Proponents of the studentification process support its new dynamics and opportunities, including the expansion of public places, increasing attractiveness of studentified districts, and the emergence of new social interactions fostered by these spaces. They also perceive student-centered environments as socially secure and tend to embrace the relaxation of social norms. This includes increased open-mindedness toward social practices that challenge established norms, shifts in public dress codes, evolving socialization patterns, and new relationship dynamics.

On the other hand, opponents express concerns about the erosion of traditional values and a diminished sense of security, manifested in the loss of familiar public spaces, reduced neighborhood tranquility, and the weakening of long-standing social ties. These concerns are often framed within a moral panic narrative, portraying studentification as a threat to tradition. This perspective emphasizes the abandonment of conventional values, resistance to shifting norms of public interaction and relationships, tensions over evolving dress codes, and the influence of student culture on the social expressions and practices of young local residents.

This study aims to contribute both to the theoretical understanding of contemporary urban transformation processes through the lens of student-centered urban development and to the empirical expansion of the literature into unexplored territories. The findings may offer valuable insights for urban planning policies and community engagement strategies in university towns, particularly in traditional communities experiencing rapid educational expansion and urbanization.

Keywords:

studentification, transformation of public space, cultural change, moral panic, Turkey.

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T_17 PUBLIC SPACE (B) / 690

Rethinking ageing in transit: Integrating older adults into the design of Sydney's transit-oriented urban environments

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As Australia's population ages, aligning with global demographic shifts, the proportion of older adults is projected to rise significantly, increasing from 15% in 2017 to 21–23% by 2066 (Australian Bureau of Statistics, 2018). There is increasing recognition of the needs in understanding how the built environment (including transport) can support healthy ageing and address the needs of an older population within the rapidly evolving framework of transit-based urbanism. Sydney's expansive (and expanding) network of Train, Metro and Light Rail stations plays a key role in the city's transit-focused planning strategies (Committee for Sydney 2022; Transport for NSW 2023), enhancing productivity and liveability across diverse demographic groups, particularly benefiting older residents through improved accessibility. Recent research by Xie et al. (2025) demonstrated that well-designed public open spaces near railway stations in Greater Metropolitan Sydney can enable older adults to engage in physical activities and social interactions beyond their immediate residential neighbourhoods, potentially enhancing the physical, emotional and mental health. However, a detailed, nuanced understanding of how professionals approach the design of these environments and the relationship between policy frameworks, design practices, and their real-world application remains largely underexplored.

This study aims to address this gap by presenting preliminary findings from broader research involving open-ended, semi-structured interviews with 8 - 10 professionals, including urban designers, architects, landscape architects, and policymakers associated with transit-oriented projects in four selected sites across Sydney. These interviews will examine the extents and ways that older adults have been considered in the planning and design processes of transit-oriented urban environments and explore how broader policy frameworks impact architectural design and procurement of architectural projects, with a particular focus on transit-oriented suburban public spaces in Sydney, Australia.

Previous stages of this research employed ethnographic observations and semi-structured interviews conducted across seven public spaces near suburban railway stations in Sydney. These investigations mapped the scale of older adults' activity spaces associated with multiple public transport modes and provided insights into how different transport options influence their use of these spaces. The findings revealed valuable insights into older adults' actual uses of, and desires for, transit-oriented public spaces of varying scales and types. Building on these insights, this phase of research will further examine the professional practices and policy dynamics that shape the design of these environments. The findings are expected to ensure greater validity of the broader research outcomes, which may inform urban planning and design, public health strategies, and social policies aimed at improving the quality of life for older adults. Ultimately, this research seeks to adapt to an ageing population by promoting built environments that effectively support healthy ageing in place. It also calls for a rethinking of older adults' needs and desires in urban design and transport, while acknowledging the significant cultural biases that must be overcome to create truly inclusive, multi-generational urbanism.

Keywords:

Older adults; Ageing in place; Transit-based urbanism; Urban environments

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T_17 PUBLIC SPACE (B) / 1286**Small-scale transformations as seeds of hope: A summer garden experiment in Helsinki****Author:** Christine Mady¹¹ *Aalto University***Corresponding Author:** christine.mady@aalto.fi

Since the beginning of the 21st century the world has witnessed numerous global and local events that have led humanity back to hoping for more just and peaceful futures. Urban planning systems hold the potential to support such hope, with the anticipation of transforming lives, and the willingness to act towards realising such future visions. Particularly public spaces have a distinctive role within planning. They can be spaces at the intersection of human-nature relations, which are inclusive of other species within human habitats. Locally, they can mitigate unforeseen climate-related challenges. Public spaces are also spaces for wellbeing, and social integration (leBrasseur, 2022; Madanipour, 2020). However, experimentation for the transformative planning of public spaces is both limited and limiting our understanding of this process's role in meeting our hope for just and peaceful spaces.

During the COVID-19 pandemic, experimentation with public spaces has led some cities to transform their spaces, while others reverted to the previous state (Deas et al., 2021; Law et al., 2021). Either way, one lesson learned was that these experiments have the potential to succeed when collaboration among various stakeholders is supported. This paper examines the case of one summer park in Helsinki, Finland with the purpose of learning from this process, which has led to transforming a vacant, brownfield site to a lively, inclusive space in the middle of the city.

The paper proposes a framework that combines concepts of urban experimentation, wellbeing, climate actions, and social inclusion in exploring public spaces. Specifically, Finland is a country that has promoted experimentation in relation to urban planning, thus enabling the investigation of opportunities and challenges of this process within the spectrum of temporary public spaces, DIY and placemaking (Lino & Åkerman, 2022; Mokkila, 2022). Furthermore, the role of green spaces in promoting health and wellbeing and the importance of exposure to nature in cities posit possibility for further investigation (Ojala et al., 2019). Moreover, the role of public green spaces in terms of responding to climate change challenges, like extreme weather conditions, like temperature or rain-fall, requires immediate attention (Vukmirovic et al., 2020).

The case of Töölö park in Helsinki provides insights into ways of engaging residents and other stakeholders for long-term decisions in public space planning. This case started in 2015, with plans for the revitalisation of the polluted Töölö bay area. The park process started in 2023 with a resident survey, workshops with several stakeholders, phased implementation of experimental spaces, and anticipated completion by the end of 2025. The design implementation considered the definition of different areas within the park, amenities, and vegetation to provide activities for all ages and interest profiles. The research is based on analysing available academic and grey literature. Also, participant observation since early 2024 focused on experiencing the spatio-temporal uses in the park, level of crowding, and favourite spots.

The passage of time or transition from short to long-term becomes a method in the planning and design processes, which supports human and nature integration in the city, while considering seasonal and climatic variations. It also emphasises the importance of monitoring and adjustment, in which people programme spaces based on preferences, while leaving other open to unexplored uses. This research serves to identify factors and obstacles to successful implementation of this approach, and its transferability to other contexts for upgrading areas, increasing the connection to nature, and rethinking possibilities for defining what urban parks could be. It provides a basis for exploring similar initiatives in other climatic regions towards realising the hope for resilient public spaces.

Keywords:

Helsinki, public space, hope, summer garden, transformation

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T.17 PUBLIC SPACE (B) / 911**Activation and Renewal: Research on the Community Agricultural Garden from the Perspective of Aging****Author:** Xinhang Yan¹**Co-author:** Yi Huang¹¹ *Tongji University***Corresponding Authors:** huangyi@tongji.edu.cn, 2330328@tongji.edu.cn

A key issue causing mental health problems among older adults is the lack of social engagement. For senior citizens living in urban areas, especially those residing in communities built before the 2000s, the only spaces for outdoor activities were sidewalks with no green features. These narrow outdoor spaces result in a lack of community engagement, which decreases the quality of life for both senior and younger residents (Han, 2005; Han, 2018). In China, older adults tend to grow vegetables wherever possible. The planting process and the harvest promote social engagement and enhance their sense of achievement (Li, Lin, and Yang, 2016). This study aims to investigate how urban agricultural gardens benefit community engagement in old residential areas in northeast China. To identify residents' perceptions of agricultural gardens, a study was conducted in a selected neighborhood in Dalian, northeast China, an old residential area with a large aging population.

Mixed methods were used to collect data. Before conducting fieldwork, we reviewed articles containing the keywords "agricultural garden," "community engagement," "mental health," and "older adults" to investigate the correlation between agricultural activities and the well-being of senior citizens. Residents' behaviors were observed at different times to collect data on their use of outdoor spaces. Face-to-face surveys were conducted on-site to gather residents' perceptions of the community environment and their preferences for outdoor activities and spaces. Most of the participants were 60–70 years old, along with some younger residents. The results indicated dissatisfaction with the existing outdoor environment. Residents expressed a high preference for community

engagement spaces and agricultural gardens. "Growing vegetables and fish" were the most preferred activities.

Based on these results, this study proposed an alternative plan for an agricultural community garden to enhance community engagement. In terms of design strategy, the site is equipped with several multifunctional spaces, including a slow-moving loop, a fitness area, and a playground. To enhance communication among different age groups, these functional spaces were connected by a roofed corridor surrounding a mulberry fish pond. The pond's circulation system is used to moderate the neighborhood's micro-climate (Dikann, 2020). Additionally, a farmer's market is regularly held in the garden to activate the community and promote the mental health of older adults who desire social interaction and to be held in esteem (Clements, 1989).

Keywords:

Community Engagement–Urban Renaissance–Open Space–Equity–

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T_17 PUBLIC SPACE (B) / 851

Reimagining Youth-friendly Social Spaces: The Potentials of Privately Owned Public Spaces as Alternative Social Settings

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Young people use public spaces distinctively different from adults, seeking environments for social interactions, gatherings, and identity formation rather than purposeful activities. Their unique spatial use patterns - characterised by fluid group dynamics, extended stays, and spontaneous social activities - often conflict with conventional public space management. Traditional public spaces present some fundamental usability challenges like poor lighting during the night, lack of weather protection, inadequate amenities, and insufficient social surveillance and feeling safe, making them neither welcoming nor practically suitable for young people's complex social needs. While shopping malls and commercial centres have emerged as preferred alternatives, offering climate-controlled environments, comfortable seating, and diverse activities, they impose significant restrictions through surveillance regimes and commercial imperatives, creating a paradoxical situation where youth are simultaneously welcomed as consumers but rejected as social beings. This creates a fundamental dilemma

as young people need inclusive spaces for social development, yet their presence is frequently perceived as problematic in urban life.

This research investigates how Privately Owned Public Spaces (POPSs) as an alternative social setting can bridge this spatial dilemma for youth. POPSs are policy-driven public amenities within private developments, legally mandated to serve as public spaces while operating under private management. These hybrid spaces offer a potential middle ground that combines commercial spaces' environmental comfort and management benefits with the accessibility and social freedom of public spaces. Through critical analysis of recent literature, we examine how POPS' distinctive characteristics can be leveraged to support youth's social dynamics and occupation patterns while addressing traditional public spaces' environmental constraints and commercial spaces' exclusionary practices. Our analysis explores different approaches to POPS design, management, and regulation across various contexts, with particular attention to European welfare state models that emphasize public oversight and social inclusion over purely market-driven imperatives. Through a systematic examination of recent empirical studies, we develop an evaluation framework that assesses POPS' social potential across four levels of interaction defined by Goffman (1963): Co-Present, Co-Attention, Co-Exchange, and Co-Action.

The findings suggest that while POPSs cannot fully replace traditional public spaces, they offer significant potential through balanced governance models and integrated design approaches combining private controls and inclusivity. Through comparative analysis, we identify spatial characteristics and management approaches that encourage youth accessibility and useability, from physical features to management practices that support or deter different levels of social interaction. The research contributes to both theoretical and practical domains of urban studies. Theoretically, it advances the understanding of how hybrid public-private governance models can support youth social needs in increasingly privatized urban environments. Practically, it provides planners and policymakers with specific regulatory tools to enhance POPS' social inclusivity through design guidelines, spatial programming requirements, and management protocols for youth engagement.

Keywords:

Youth-friendly Spaces; Privately-Owned Public Spaces (POPS); Urban Governance; Social Inclusion

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T_17 PUBLIC SPACE (B) / 1763

Informal Utilization Characteristics of Underpass Public Spaces in Megacities from the Perspective of Co-Production Theory: A Case Study of Elevated Highway Underpasses in Guangzhou

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Since 2019, China has promoted the concept of "People-Centered Urban Development," emphasizing the role of public spaces as a core component. As metropolitan areas transition into a phase of incremental urban renewal, the Chinese government has repeatedly stressed the importance of urban renewal. The 2025 State Council meeting on urban renewal highlighted the need to accelerate infrastructure construction and enhance

urban functions. Against this backdrop, the spaces beneath elevated highways in megacities have garnered increasing attention as potential public assets for urban renewal and adaptive reuse.

In the early stages of urban renewal, the formal redevelopment of underpass spaces is often hindered by complex property rights and the involvement of multiple administrative entities, resulting in prolonged project implementation timelines. Consequently, informal use of these spaces as public areas is a widespread phenomenon in metropolitan areas, frequently preceding formal interventions. This study employs the theory of co-production to examine multiple cases of informally utilized spaces beneath elevated highways in Guangzhou. Through field surveys, typomorphological analysis, and semi-structured interviews, this research adopts a socio-spatial perspective to identify key characteristics of the informal use of elevated highway underpasses as public spaces. The findings aim to provide insights and recommendations for the future regeneration and adaptive reuse of these spaces in megacities within the context of urban renewal.

Keywords:

Urban Renewal; Underpass Space; Public Space; Co-Production; Informal Use

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T.17 PUBLIC SPACE (O) / 335

Urban Street Space in Planning Transformation: Analyzing and Optimizing the Quality Differences between Subjective and Objective Perspectives –A Case Study of Xi'an

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As the most common public space, urban street is not only an important carrier of people's daily activities, but also a direct reflection of the quality of urban environment and social inclusion. In the face of the multiple challenges of global climate change, resource crisis and social inequality, optimising the spatial quality of urban streets has

become a key issue to enhance environmental sustainability, social inclusiveness and livability. However, most existing studies focus on the single dimension of objective environmental characteristics or subjective perception, ignoring the systematic differences between the two and their far-reaching impacts on spatial design and planning decisions. How to identify the differences between subjective and objective qualities in a scientific and quantitative way and formulate targeted optimisation strategies in the context of rapid urbanisation is still a key issue to be solved.

In this study, a spatial quality assessment framework based on multi-label classification is innovatively proposed by combining deep learning techniques and semantic analysis methods. Based on 110,988 street view images from the MIT Place Pulse dataset, the Microsoft Trueskill algorithm is used to quantify six subjective perception scores of streets, including safety, comfort, and richness; meanwhile, based on the Cityscapes dataset, the Mask2Former algorithm is used to semantically segment the objective features of the 28,662 streets in the downtown area of Xi'an. streets based on the Cityscapes dataset; meanwhile, the Mask2Former algorithm was used to semantically segment the objective features of 28,662 streets in Xi'an city centre, and 19 landscape element indicators were extracted from the four dimensions of safety, comfort, richness and convenience.

It was found that there are significant differences between subjective and objective street qualities in the urban centre of Xi'an. Green visibility, proportion of walking space and transparency of street interfaces have a significant effect on subjective comfort and richness, while deficiencies in objective indicators such as road surveillance and pedestrian accessibility in some areas lead to lower perceptions of safety and convenience. In addition, tourist attractions and amenity streets had significantly higher subjective ratings than traffic streets, and densely built-up areas had insufficient green visibility and sky visibility limiting comprehensive perceptions despite high accessibility.

Based on this, the study proposes recommendations to optimise the quality of streets, including improving green coverage and street richness, enhancing the design of pedestrian spaces, and improving the transparency and functional diversity of buildings along streets. Through quantitative analysis, the study reveals the key deviations and optimisation paths in the subjective and objective perspectives of street space, providing practical basis and theoretical insights for street planning and design in the context of rapid urbanisation, and helping to build a more inclusive and livable urban public space.

Keywords:

Urban Street Quality, Perception Differences, Deep Learning

T_17 PUBLIC SPACE (O) / 323

Evaluating Public Space Resilience: an index and a case study

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Urban resilience (Cutter et al., 2012; Davoudi, 2012) is a crucial concept in urban planning, but it often merges the distinction between events that trigger crises and the processes of adapting to them. Sudden disruptions and gradual, undesirable changes are frequently addressed in similar ways, which can create ambiguities in planning and response strategies. To overcome this challenge, it is essential to introduce the concepts of "multiresilience" and "multiadaptation" to better understand how public spaces function under various risk scenarios, which are becoming increasingly common in contemporary contexts (Sepe, 2023).

Multiresilience refers to a system's ability to respond effectively to multiple simultaneous risks of different types. This concept considers the unique characteristics of the

location, the specific nature of each risk, and the inclusive participation of various stakeholders. The goal of multiresilience is to restore the pre-crisis state after the challenges have been managed. Achieving this requires a comprehensive understanding of the relationships between different risks and their cumulative effects on urban systems, particularly in public spaces. Multiresilience promotes strategies that address these risks collectively, ensuring that solutions are tailored to the specific needs and features of the area.

Multiadaptation, on the other hand, describes a system's capacity to adjust to unforeseen multi-risk scenarios by achieving a new balance. This equilibrium incorporates territorial characteristics, the types of risks involved, the actors participating in the response, and emerging needs, always emphasizing inclusion. Unlike multiresilience, which seeks to restore the prior state, multidadaptation accepts that the post-crisis condition may differ and could better align with new circumstances.

In practical terms, multidadaptation could involve reimagining urban design to create flexible public spaces capable of serving multiple purposes (Pinkwart, Schingen, Pannes, et al., 2022).

To explore these concepts, a methodology was developed within the PRIN 2020 research project, "Sustainable Modelling of Materials, Structures, and Urban Spaces" (#20209F3A37) Urban Impact Unit under the author's responsibility. This methodology aims to define principles for multiresilient planning through case studies, providing a flexible framework for designing public spaces that are both resilient and adaptable to unexpected multi-risk scenarios.

Among the principles derived from the research is the importance of integrating risk assessment into urban planning processes. This involves not only identifying and mitigating current risks but also examining how different risks may interact and amplify one another. Accordingly, measuring the degree of multi-adaptation can significantly enhance the understanding of adaptation to diverse risks.

Starting on these premises, the aim of this study is to present the original Multidadaptation Place Index (MPI). The MPI is a tool designed to measure the adaptability of public spaces by evaluating their flexibility to accommodate interventions tailored to current and emerging needs, while simultaneously enhancing livability and well-being. This index serves as a valuable resource for urban planners and policymakers, enabling them to prioritize inclusive project interventions—from environmental to socio-economic—and allocate resources more effectively.

The MPI evaluates factors such as the physical characteristics of the space, the types of risks present, socio-economic conditions, and existing infrastructure. By analyzing these elements, the index provides a comprehensive picture of a space's resilience and adaptability.

For example, an emblematic case study—the new Hudson River Park in New York—will illustrate the application of the MPI to a specific public space. This project has transformed Manhattan's West Side waterfront from a concrete landscape into a public space capable of absorbing rainwater and runoff, while also enhancing livability through inclusive, accessible activities and enriching the area's cultural resources.

Keywords:

Public space; resilience; liveability; inclusion; multidadaptation index

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Designing Equitable Outdoor Sports Spaces: Mitigating Weight Stigma for Overweight Adolescents —A Case Study of Quyang Park, Shanghai

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Introduction

Weight stigma—a societal bias linking body weight to personal failure—spatially excludes overweight adolescents from public sports areas by intensifying fears of social judgment. In Shanghai's Quyang Park, overcrowded and highly visible exercise zones deter this group from physical activity, worsening health disparities. This study examines how spatial configurations perpetuate exclusion and proposes design interventions to balance visibility and privacy, ensuring equitable access to health-promoting environments.

Approach and Methodology

Guided by Space Syntax theory, the study quantifies two core needs of overweight adolescents:

1. Activity Independence: Freedom from surveillance, measured by integration (spatial accessibility). High integration values (1.15–1.39 vs. park average 0.527) indicate overcrowded zones unsuitable for solitary exercise. □
2. Psychological Security: Reduced exposure to judgment, assessed through three metrics:
 - Visual Integration: Privacy levels via visibility from surroundings (scores 2.31–2.71 correlate with low seclusion).
 - Choice: Pedestrian traffic density (e.g., runway choice=3502 highlights congestion).
 - Intelligibility: Spatial legibility (R=0.28 reflects poor navigational clarity).

Axial analysis and visibility graph analysis (VGA) were applied to six zones (fitness areas, courts, runways) to identify exclusionary patterns.

Based on this assessment framework, we developed targeted optimization strategies.

Results Analysis

1. Activity Independence: Integration values across all sports zones (1.15–1.39 vs. park average 0.527) were significantly elevated, indicating high accessibility but excessive crowding, leaving overweight adolescents without adequate spaces for independent low-intensity exercise.
2. Psychological Security:
 - Privacy: Visual integration scores (2.31–2.71) revealed insufficient spatial seclusion, particularly in high-traffic runway areas.
 - Movement Flow: Choice values in fitness zones (626.75) and runway areas (peak at 3502) indicated path congestion, intensifying users' self-consciousness.
 - Cognitive Clarity: Low intelligibility (R=0.28) demonstrated poor spatial legibility, causing navigation difficulties and anxiety.
3. Intervention Strategies
 - Moderate Density Reduction: Restructured path layouts to lower integration values in fitness areas (from 1.20 to 0.93), creating semi-enclosed independent exercise spaces.
 - Activity-Based Flow Segregation: Divided runways into dedicated exercise paths and transit corridors, reducing cross-traffic (runway choice value decreased from 3502 to 2171).
 - Enhanced Intelligibility: Implemented landmarks and wayfinding systems to improve spatial cognition (target R>0.5).

Discussion and Conclusion

This study demonstrates that spatial equity for overweight adolescents hinges on rebalancing visibility and seclusion. Lowering integration and choice values created "buffer zones" to mitigate scrutiny, directly countering stigma's psychological impacts.

Improved intelligibility reduced navigation anxiety, fostering independent use. The findings emphasize that inclusive design must prioritize marginalized groups' unique needs over generic accessibility standards. While spatial interventions effectively redistributed flows, future work should integrate real-time behavioral tracking and survey data to validate Space Syntax metrics dynamically. For instance, simulating pedestrian movements post-intervention could verify reduced congestion, while user feedback on privacy perceptions would strengthen the correlation between visual integration and psychological security. Such mixed-method approaches would enhance the robustness of spatial equity evaluations.

By translating spatial analysis into actionable design, this framework offers a scalable model for transforming exclusionary public spaces into equitable, health-promoting environments.

Keywords:

Weight Stigma—Space Inclusion—Spatial Equity—Space Syntax

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T_17 PUBLIC SPACE (0) / 961

The Reinvented Streets of an Inner Neighborhood in İstanbul: Transformation of the Commercial Landscape of Bomonti

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This study focuses on the layers of the urban transformation in one of the most central and valued areas of İstanbul. Bomonti with its unique history offers a site where the impacts of political economy of the various eras can be read. Influenced by global production and consumption dynamics, as well as central and local land use decisions, Bomonti has undergone a dramatic transformation over time. While in the 1960s the area was recognized as the most dense industrial region in İstanbul (Tümertekin, 1967), today it stands out as a quintessential post-industrial scene with rising business centers, residences, and entertainment. Meanwhile, the garment industry has clustered in its northern part, ensuring the continuity of production dynamics. This study aims to examine this transformation through the lens of the "street". By employing a creative research methodology, the study analyzes the commercial character of the specific streets at different times in the history and reveals the manifestations of economic policies on the 'pavements'.

In urban studies literature, it is frequently emphasized that the production of urban space for upper classes through plans, policies, and projects has become a central strategy of neoliberal urbanization (Brenner and Theodore, 2005). However, the up-scaling of urban spaces is often analyzed through residential areas, with a special focus on luxury housing. Yet, urban transformation is also materialized and experienced on the "sidewalks" of neighborhoods (Patch, 2008). Although streets and their commercial character are crucial both as a reflection and also as a fundamental element of urban life, they are often taken for granted (Zukin et al, 2016). Streets can be said to be both the product and the victim of urbanization (Hartanti and Martokusumo, 2012). Based on this literature gap, the study's main concern is what streets reveal about the interplay between the macro and micro dynamics when considered as an arena of interplay. For this aim, the main transforming policies of each urbanization era and the character of the streets are analyzed; and put a special focus on today's streetscape.

Through the lense of the commercial landscape of a street, how the political economy of an era is manifested on the streets is revealed.

In the study, the policies and land use decisions of each era is categorized based on the secondary literature and planning documents. To determine the uses of the street and its commercial character historically, mainly the aerial photos and adress directories were used. Bomonti is a neighborhood comprised of different identity zones. The streets were chosen in line with zones. Using 1941 and 1987 city adress books and aerial photographs, it is possible to see the land uses, the industrial and commercial businesses of different historical eras. As for the contemporary transformation, google map street function was used. 2013 and 2023 streetview was utilized based on the type of economic activity. They were analyzed quantitatively.

Bomonti streets are unique in the sense that they reflect the important breakthroughs in the mode of production. As an inner city neighbourhood, streets show the clash between different land uses and economic activities throught the time. Especially the recent transformation of Bomonti as a result of a central decision declaring here a "Tourism District" has a dramatic effect on the character of the neighbourhood, reflected on the streets. Yet the existence of the old and the new; the production and consumption clearly show that the transformation of urban space is a never ending process open to the possibilities.

Keywords:

urban transformation, commercial landscape, Bomonti

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T_17 PUBLIC SPACE (O) / 1296

The impact of urban growth generators on creating socio-economic centrality: Public Spaces in Algiers' Large-Scale Housing

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Public space is becoming the focus of urban studies, as it holds the influential potential to create resilient cities. This research explores the significant capability of urban growth generators to create socio-economic centralities in Large-Scale Housing's public space.

Our main objective is to understand the evolution of the socio-economic state in the public space of large housing in Algiers, from underprivileged settlements to socio-economic centers that contribute to the growth of the city, and to understand the role of urban growth generators (walkability, accessibility, commercial clusters) in impacting the development of centrality in the influence area.

To address this objective, we focused primarily on agent-based modeling, as it perfectly captures the complex interactions between multiple generators of incremental growth. The model is built based on quantitative data provided by the National Center for Trade Registration (C.N.R.C.), which contains the number of active retailers and population growth rate, as well as qualitative data assessed through surveys that give us an insight into the local community, additionally GIS of the influence area, including road networks, land use, public facilities, etc.

Moreover, this ABM model explains the transition from (decline period) to (prosperity phase) by analyzing the socio-economic interaction network between human agents (residents/visitors) and physical agents (stores and public facilities). These interactions evolve into preferences, which we modeled in the form of scenarios to predict annual socio-economic changes.

Our results indicate that accessibility is associated with an increased level of pedestrian traffic.

Furthermore, if this level of pedestrian traffic meets improvements in walkability, it encourages new retail establishments to invest in these public spaces, and they gradually become centralities.

Our study highlights the important contribution of improving accessibility patterns, walkability, and commercial clustering in order to keep public spaces vibrant and contribute to their potential growth and openness to the outside world.

In conclusion, urban growth generators are indeed essential drivers of economic development and social cohesion in large-scale housing's public spaces, which should be taken into consideration in future urban planning and city renewal schemes.

Keywords:

Public space; growth generators; centrality; large housing; agent-based modeling (ABM).

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Reconstructing the Healing System of Public Space: Data-Driven Multidimensional Health Interventions and Inclusive Practices in High-Density Urban Areas

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In the context of high-density urbanization and post-pandemic mental health challenges, walkable urban spaces such as streets, plazas, and street corners are increasingly recognized as essential for physical and mental healing. However, public spaces in high-density urban areas often suffer from standardized design and fragmented functionality, limiting their ability to meet the deeper needs of urban inhabitants, from “natural contact” to “emotional healing.” Taking Xuhui District in Shanghai as a case study, this research explores how public spaces can be transformed into “healing nodes” accessible to all population segments through scientific design. The study employs a four-dimensional framework—nature healing, physical activity, consumer willingness, and cultural perception—along with data-driven methodologies and global experience benchmarking.

The study adopted a data-driven approach structured around the core framework of “street view perception - healing quantification - strategy generation,” integrating multiple data sources and case studies. Utilizing Baidu Street View data, 12 three-dimensional spatial indicators, including green visibility, interface diversity, and enclosure, were extracted via deep learning semantic segmentation technology. The real pedestrian perception scene was reconstructed using a visual threshold simulation model (a 120° human eye view), overcoming the limitations of traditional two-dimensional spatial evaluations. A stratified questionnaire survey covering 300 sample points, representing young, middle-aged, elderly, and sub-healthy individuals, quantified the four dimensions of healing, physical activity, consumer willingness, and cultural perception. To further calibrate the strategies, the study incorporated approximately 5,000 health-related points of interest (POIs) from the Chinese social media platform Rednote, identified the spatial attractiveness of emerging businesses such as flash bazaars and sound healing workshops, and referenced international guidelines, including the “Melbourne Central City Design Guide” and Tokyo’s “Station Front” design guidelines.

The findings reveal that the healing efficacy of high-density public spaces depends on multidimensional elements. An inverted U-shaped relationship exists between the degree of business mix and economic healing effect. The interface diversity index was positively correlated with healing value, although its marginal effect diminished after exceeding 0.7. Sky openness between 40% and 60% enhances the natural healing effect, likely because a more open view of the sky contributes to psychological comfort. Regarding demographic differences, Generation Z consumers preferred immersive experiential spaces, with higher demand for scenario-based consumption than other groups. In contrast, older age groups prioritized green coverage and accessibility to open space facilities.

Drawing on quantitative analysis and global best practices (e.g., Melbourne Central City Design Guide and Tokyo Station Square Shared Design), the study proposed a modular public space design toolkit that integrated new consumption functions. By controlling built environment indicators and matching them with nature education/interaction and new consumption nature healing businesses, the study achieved the synergy of ecological and psychological benefits, creating a healing node within high-density urban areas.

The core value of this study lied in constructing a closed-loop framework that integrates data-driven insights, global best practices, and locally tailored strategies, emphasizing the multidimensional health benefits of public spaces. This research innovatively employed a mixed-methods approach to provide a comprehensive assessment of

the health and well-being impacts of public spaces in high-density urban areas. By combining extensive quantitative data analysis with qualitative case studies and public surveys, this study offered a holistic understanding of how public spaces can function as healing nodes. Future work will explore the role of community governance models in supporting the long-term operation of public spaces and the dynamic optimization of healing scenarios through virtual reality technology. Public spaces in high-density cities should evolve into incubators of social hope, fostering both physical and mental well-being through innovative design and inclusive practices.

Keywords:

Public space; street view images; health healing; data-driven; high-density cities

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Rethinking The Urban Design of Coastline: Izmirdeniz Project

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This study addresses the challenges of coastline development, highlighting the limitations of top-down, fragmented approaches that fail to fully integrate the diverse needs of stakeholders, with a particular focus on the prioritization of recreational spaces over the transformative potential of the sea and the underutilization of participatory processes. The coastal city of Izmir, Türkiye offers an insightful case study for collaborative, inclusive, and sustainable strategies that enhance coastal spaces as dynamic arenas for shared urban futures. The study centers on the Izmirdeniz Project, an urban coastal design initiative led by the local government in Izmir. The project aims to strengthen the connection between the residents and the sea through the redesign of its inner bay as a performance venue for the people of Izmir and its 40-kilometer coastline.

The study begins by exploring how Izmir's vision as the 'Mediterranean's city of culture, art, and design,' developed through the Culture Workshop and Design Forum, led to the creation of the coastal urban design project. This vision sought to integrate design with daily urban life, making coastal urban spaces not only accessible but also actively engaged by the public. Transforming the coastline involved both spatial interventions and embedding the coastal spaces within the city's social and cultural rhythms. The study aims to unpack the urban design process, critically analyzing the conceptual and professional approaches that challenge conventional urban development narratives.

The study investigates the relationship between the publicness of the sea and urban design, focusing on the collaborative efforts of over 100 local design actors. Using a multimethodological approach—document analysis, literature review, and semi-structured interviews—it dissects the decision-making, design, development, and implementation phases, assessing each phase and the involved actors. This study critiques traditional coastal development narratives, advocating for an approach that fosters collective agency and supports participatory, iterative design processes. It emphasizes that publicness should be seen as an evolving process rather than a fixed outcome, advocating for a mindset shift towards more equitable, sustainable coastal development. However, there are limitations to this study, including potential constraints in data availability and the challenge of fully capturing the complexity of stakeholder interactions. Future research should explore the long-term impacts of urban coastal development, with a focus on ensuring social equity and environmental resilience.

The study suggests that the complexity of the sea and its interplay with the real-world setting influence the scope and outcome of the project, probing the transformative

potential of sea. It contends that the project prioritizes quality of life by fostering everyday connections with the sea through various land-sea interface sections, while preserving the low-intensity lifestyle that defines the city's character and promoting sustainable urban design decisions. However, the process encountered several challenges, including the gap between design and implementation phases, the exclusion of design actors during implementation and significant changes to the proposed designs. This led to a shift in intention, from the publicness of the sea to the publicness of the coastline.

In conclusion, this study offers a comprehensive exploration of the challenges and opportunities associated with coastal urban development. By situating the Izmir Deniz Project within debates on publicness, agency and participatory governance, it underscores the potential for urban design to act as a dynamic arena of negotiation and collaboration. The study provides valuable insights for local governments, planners, and designers seeking to develop more equitable, inclusive, and resilient coastal communities, emphasizing the importance of fostering inclusive public design cultures in coastal urban spaces.

Keywords:

coastline; sea; public space; urban design; Izmir

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The Role of Land Use Regulations and Property Market Actors in Shaping Socio-Spatial Segregation: Insights from Lima's High-Value Areas

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Since the 2000s, Lima has undergone significant transformations in socio-spatial segregation patterns, driven by neoliberal policies from the 1990s (Fernández-de-Córdova et al., 2021). These policies encouraged the disorderly expansion of the urban periphery and the emergence of mixed-use areas, while high-value districts consolidated patterns of economic exclusivity (Fernández-Maldonado, 2018). Urban planning, particularly through land use regulations, has been shown to exacerbate residential segregation and distort the housing market (Fischel, 2015; Goytia, Heikkilä and Pasquini, 2023; Kayden, 2020). However, there is limited research in Latin America directly measuring the impact of these regulations on housing access and real estate market dynamics.

In this region, unlike in developed countries where land use regulations often remain frozen for long periods to consolidate specific socioeconomic strata, these regulations are frequently modified and legally flexed to provide targeted benefits to landowners and developers (Goytia, Heikkilä and Pasquini, 2023). In high-value areas such as the districts surrounding Lima's financial center, this flexibility coexists with freezes that perpetuate economic exclusivity (Kayden, 2020). These actions are not guided by a coherent national policy but rather by local regulations and decrees, arbitrarily applied based on specific interests, reflecting a fragmented vision of the city.

Lima is divided into four Normative Treatment Areas (ATN), designed to differentiate urban planning parameters according to socioeconomic and geographic characteristics. ATN III, which includes districts such as Miraflores, San Isidro, and La Molina, illustrates how regulatory restrictions, such as minimum apartment sizes of up to 130 square meters, high parking requirements, and mandatory setbacks, perpetuate economic exclu-

sivity (Fernández-Maldonado, 2018). While normative Floor Area Ratio (FAR) in these areas allows for some densification, its impact is insufficient to counteract the dynamics of the luxury real estate market, characterized by high land prices and demand for exclusive housing (Fischel, 2015). Consequently, these areas exhibit low income diversity, consolidating patterns of socio-economic homogeneity.

In contrast, peripheral areas within ATN I demonstrate higher potential for promoting socio-economic diversity. More flexible land use regulations in these zones permit smaller plots, moderate building heights, and mixed land uses, enabling developments accessible to low- and middle-income families. However, this potential is undermined by inadequate urban infrastructure, including limited public transport and basic services, which constrain the positive impact of increased FAR and exacerbate structural inequalities.

This study analyzes the historical and current impacts of land use regulations, focusing on the relationship between FAR and socio-spatial segregation. Using mixed methods, including a linear regression model and the Entropy Index (global and local), the research identifies the regulatory mechanisms that reinforce exclusivity in high-value areas and the socio-economic diversity observed in peripheral zones. Additionally, the Spatial Error Model (SEM) confirms the moderate spatial autocorrelation of the data, validating the robustness of the findings.

The results underscore that simply increasing FAR does not guarantee a reduction in socio-spatial segregation. Policies aimed at relaxing land use regulations in high-value areas must be complemented by inclusive housing strategies and comprehensive urban planning measures that address underlying structural inequalities. This includes increasing the supply of social housing, improving urban connectivity, and providing equitable access to essential services and infrastructure.

A historical analysis reveals that land use regulations in Lima have historically segmented the real estate market, consolidating zones of social and economic exclusion. These findings highlight the importance of transitioning from fragmented local policies to a coherent urban strategy that promotes equity and integration. Future research should address related challenges, such as informal settlement growth and urban fragmentation, and their implications for housing access, employment opportunities, and transportation costs.

Keywords:

Land Use Regulation, Socio-spatial Segregation, Floor Area Ratio

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T_17 PUBLIC SPACE (O) / 722**Comparative Analysis of Legal Frameworks and Reform in Global Urban Planning Systems: Insights from 'Planning Regulation - Constrained' and 'Development Order - Guided' Models in the Stock Era****Author:** Han Tao¹**Co-authors:** Su Wang¹; Weiping Cao¹¹ *Tongji University***Corresponding Authors:** 3235987330@qq.com, 529788416@qq.com, 1965208182@qq.com

Urban planning systems worldwide encompass various hierarchical plans, all incorporating statutory plans and rules for project development control. These statutory plans dictate the content and procedures for land development and construction projects to obtain planning permits. Urban development control systems can be categorized into two modes based on the relationship between statutory plans and development control: "Planning Regulation - Constrained" and "Development Order - Guided". The Planning Regulation Constrained Mode is mainly represented by zoning systems in Germany, the United States, and the Netherlands, while the Development Order - Guided Mode is typified by the UK and Singapore. These traditional models have evolved over time, incorporating features of both types to form more flexible hybrid models. Most countries and regions now exhibit a blend of both systems, such as Hong Kong, where land covenants primarily follow the development rule control model, while statutory plans are mainly planning-oriented, leveraging the strengths of both modes to create a hybrid development control system. In Mainland China, project development decision-making aligns with the Development Order - Guided Mode, adopting an administrative licensing system where planning permits are required for authorization. Meanwhile, the control detailed planning implemented in Mainland China is largely based on zoning-oriented development management systems, exhibiting characteristics of the Planning Regulation - Constrained Mode.

By comparing the system architecture, operational logic, regulatory elements in different countries and regions, and specific project practices of the two typical development control systems, this study aims to uncover the underlying logic of project development and construction control in both modes. Especially in the context of the stock era, with more complex and diverse project development change demands for specific actual projects, this research holds significant value for the reform of planning control systems in the stock era. The study also explores the legal frameworks governing these systems, highlighting the need for a just transition in urban planning and development control, which is essential for addressing the socio-technical and governance challenges of planetary transformation.

Keywords:

Development Control□Planning Regulation□Development Rule□Comparative Study□Stock Era

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Streetscape-Publicness Evolution and Spatial Justice: A Street View Analytics Approach

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In recent years, street spaces have faced governance challenges characterized by dual disorders in both physical environment and social values, with the transition from traditional "growth-oriented" to "equity-oriented" development still encountering numerous obstacles. Existing studies have lacked systematic evaluation tools and tended to emphasize physical environment improvement while neglecting spatial equity, making it difficult to support refined governance decisions. Based on spatial justice theory, this study integrated street view imagery and deep learning technology to construct a coupling analysis framework for the evolution of street landscape perception and publicness transformation in Shanghai, China, exploring their dynamic evolutionary coupling patterns. The findings revealed that: (1) While street landscape perception showed an overall improving trend with significant spatial differentiation, with Shanghai's core areas displaying radial improvement patterns, publicness exhibited greater volatility, with central areas (particularly waterfront districts) even showing declining trends; (2) Five typical coupling modes were identified: "Synergistic Improvement" "Imbalanced Evolution Type I" "Imbalanced Evolution Type II" "Dual Recession" and "Stable Development" with 38.94% of streets found to be in non-benign evolutionary states, each type demonstrating differentiated spatial clustering characteristics; (3) Multi-level analysis across location-function-policy dimensions revealed that Shanghai's central urban areas tended to prioritize landscape improvement over publicness, while historic preservation districts faced challenges in maintaining public attributes. This study broke through the static research paradigm by constructing an AI-based street space evaluation system from a dynamic evolutionary perspective, providing theoretical foundation and practical pathways for advancing spatial renewal from mere aesthetic enhancement toward deeper social equity considerations in urban development worldwide.

Keywords:

Street Landscape; Publicness; Coupled Evolution; Spatial Justice; Deep Learning

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A study on social equity and social justice performance of public resource planning under the background of urban social spatial polarization: A case study of Green View Index of streets in the central urban area of Shanghai

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The escalation of urban social spatial polarization heightened demands for public resource planning, particularly in achieving a balance both on social equity and justice

performance. The evaluation of social performance within the realm of urban planning has undergone a progression from regional equality to social equality, and ultimately to social justice. The principle of social equity is predicated on the assumption that all social groups possess identical abilities and needs, thereby advocating for the equitable distribution of public resources. Conversely, the principle of social justice emphasizes the disparities in capabilities and needs among diverse groups, asserting that public resources should be preferentially allocated to disadvantaged populations to realize substantive equality.

This study employs the distribution of streets' Green View Index (GVI) in the central urban area of Shanghai in 2022 as a case study to construct a framework for evaluating the social performance of street greening distribution. In assessing social equity performance, the Gini coefficient is utilized to gauge overall fairness, while the Lorenz curve facilitates an analysis of the congruence between population distribution and GVI. Additionally, location entropy is employed to elucidate the spatial configuration. In evaluating social justice performance, a share index is introduced to ascertain whether the green visibility rates accessible to specific age and income groups meet or exceed the average level of the resident population, supplemented by location entropy analysis to examine spatial distribution characteristics.

The findings reveal that the social equity performance of street GVI in Shanghai's central urban area resides within a relatively acceptable range, reflecting the positive outcomes of recent urban greening initiatives. However, while social justice performance is generally reasonable, it does not adequately favor disadvantaged groups. Furthermore, the spatial analysis of social equity and justice performance uncovers a notable degree of "spatial mismatch" between green visibility rates and population distribution, indicating that public resource allocation necessitates further optimization to effectively achieve the dual objectives of social equity and social justice. Consequently, this study advocates for the strategic optimization of greening resource distribution in planning, with a focus on areas predominantly inhabited by disadvantaged groups, while also emphasizing the importance of dynamic monitoring and adjustment of spatial alignment to systematically address issues of fairness and justice in public resource allocation.

Keywords:

social equity performance; social justice performance; Green View Index (GVI)

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Local planners' views on public space vis-a-vis sustainability transitions: evidence from suburban locations in the Lisbon Metropolitan Area

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This presentation examines the views of local planners towards the implications, challenges and barriers of (re)designing public spaces within the context of urban and

ecological transitions in suburban and metropolitan areas.

Nowadays, the importance of public space is widely disseminated across academic research and policy-making, often emphasising its paramount contributions to sustainable development and the promotion of just and cohesive communities.

Public spaces play a crucial role in different aspects of sustainability - environmental, social and economic. Indeed, they can galvanise through design solutions for resource efficiency or nature-based solutions, supporting active mobility and socially inclusive development. Moreover, they can be pivotal in promoting sustainable behaviours and life choices beyond individual action. Along these lines, the recent crises highlighted the importance and need to adapt or design public spaces more suited to the new challenges. At the policy level, initiatives such as the European Ecological Pact or the New European Bauhaus define a framework for the sustainable transformation of urban environments and lifestyles. Public spaces are approached at a multi-dimensional capacity. Although the opportunities for change proposed by these approaches are evident, the development of city-wide local strategies must be developed with a place-based perspective. In other words, the specificity of different types of territories, their urban dynamics, existing public spaces and perspectives of local stakeholders should be considered vis-a-vis the broader debate on sustainability transition policies. This is particularly relevant in peripheral and suburban urban areas, where public spaces tend to have different configurations and dynamics than those of central or traditional areas, often lacking adequate ecological structures, collective facilities, and infrastructures.

To delve into this topic, we address the relation between urban transitions and suburban public space by accounting for how public authorities perceive and address the urban sustainability agenda locally, taking as a case-study examples from the Lisbon Metropolitan Area (LMA).

This communication explores local planners' views on the future of cities, discussing:

- (1) the perceived meanings of urban sustainability and challenges regarding public space;
- (2) the integration of the concept in their planning practices;
- (3) existing constraints and tensions experienced; and
- (4) the progress and opportunities for innovation.

The study is based on qualitative data collected through a series of focus-group workshops with planners from different departments in two LMA municipalities, Odivelas and Almada. After processing this data through thematic qualitative analysis, the results will address the urban planners' interpretations of urban sustainability, its implications in public space design and management, and a critical view of the concept and agendas in suburban metropolitan territories. The study will contribute to a deeper understanding of how agendas for urban sustainability are understood, implemented, and adapted in complex suburban contexts, as well as how the particularities of the production of public space in different contexts impact the implementation of said strategies.

The work intends to contribute to the theoretical discussion regarding discourses on urban sustainability transitions, specifically by addressing the views of urban practitioners and confronting these with empirical findings on local public space adaptation measures.

Keywords:

Public space; urban sustainability; suburban areas; place-based approach; planner's views

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Agile tactics for re-designing studio education: A participatory approach for design research

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This study arises from an argumentation aimed at critically examining issues of disintegration and dissolution while exploring alternative models of spatial research practices that prioritize “inclusiveness” and “public engagement.” In the face of contemporary challenges such as climate change, social inequality, and rapid urbanization, fostering urban resilience, sustainability, inclusivity, and aesthetics has become essential. These core values are championed by the New European Bauhaus (NEB), which emphasizes togetherness, aesthetics, and sustainability in reshaping our built environment. This triad of priorities necessitates the adoption of agile tactics for redesigning educational and research frameworks in the fields of architecture and urban design.

For the design process, Salama (1995) highlighted the participatory model, which he associated with “Community Design” or the “Action Research Approach.” This model represents a significant evolution in traditional design practices, as it incorporates users and stakeholders into the decision-making process, thereby expanding the capacities and roles of designers, educators, and commissioners. The methodological framework emphasizes the integration of design ‘studio teaching’ with ‘research practices’ in architectural and urban design - process-driven and participatory approaches, in particular. How can educators, architects, and planners address challenges in the built environment by employing new agile tactics in the educational milieu? To what extent can architectural and urban design education, combined with design research, reveal innovative tactics for addressing environmental challenges within traditional built environments?

This study emphasizes a research process that integrates various tactics, combining the undergraduate design studio with insights from a European Union research project, entitled EHHUR. It encompasses the teaching methodologies associated with design activity which is framed as a form of research - adopting a paradigm of “design research” and “research by design” (Frayling, 1993). This study focuses on a third-year architectural design studio that explores the complexities of urban resilience in the traditional center of Izmir, a coastal metropolitan city in the Aegean region. The research examines how new agile tactics can integrate the core values of the New European Bauhaus (NEB) into design education, reshaping the educational process for Kemeraltı—a historic open bazaar added to the UNESCO World Heritage Tentative List in 2020.

This journey, which combines research and design, leverages the real-world context of the project sites and architectural program, positioning the design studio as a dynamic environment where diverse actors—students, stakeholders, and professionals—collaboratively negotiate agency and shape responsive urban design solutions. The redefined role of the third-year design studio lies in its function as a participatory milieu, facilitating meaningful interactions between student groups and multiple stakeholders, e.g. everyday users, shop owners, and craftsmen. Agile tactics, characterized by iterative cycles, adaptability, locality, and stakeholder collaboration, have structured both the studio’s journey and its methodological framework. By integrating participatory processes, agile tactics, and real-world challenges into the design framework, the studio has served as a microcosm of urban decision-making. The final projects proposed a Culinary Arts Hub, conceptualized as a living laboratory for sustainability, innovation, and community engagement. Key design elements included generative structures, climate-responsive strategies, and community-oriented public spaces. By incorporating NEB principles alongside participatory design, energy-efficient tools, and resilience-building strategies—reinforced by expert-led seminars—this framework presents a replicable model for advancing sustainability and fostering agency in urban environments. Architectural and urban design studios can function as critical platforms for testing and implementing strategies that integrate design excellence with urban resilience.

This research offers a broader understanding of the interconnected processes of research and design within historic built environments, both in Türkiye and on a global scale.

Keywords:

design research; participatory design; cultural heritage; sustainability; agile tactics; urban resilience

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Salama, A.M. (1995) New trends in architectural Education: Designing the Design Studio.

T_17 PUBLIC SPACE (O) / 720**The Path of Land Use Control for Urban Construction Projects in Germany**

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This paper, integrating practical research on land use control for urban construction projects, aims to offer beneficial references and guidance for planning control in projects of other countries, especially for those adopting a German-style planning system. Germany's planning system has evolved to integrate functional zoning, aiming for sustainable urban development that balances social, economic, and environmental needs. The goal is to utilize land justly and effectively, considering housing demands and public interest, while protecting the environment and fostering climate adaptation.

The core of German development control is to define construction area functions per the Federal Building Code (BauNVO), regulating land and building use to prevent conflicts and ensure orderly growth. Key principles include functional separation, orderly urban landscapes, healthy living conditions, flexibility, legal certainty, and use conflict avoidance.

Technically, Germany adopts a "mixed land categories + building uses" approach. Urban land is divided into major types like residential (W), mixed construction (M), industrial (G), and special areas (S), further split into smaller categories. Each is a functional group of building uses, controlled via permits. Additional restrictions on scale, business type, service targets, and external impacts form a "2+n" control logic.

Germany's zoning method reflects a comprehensive planning concept, balancing development, livability, and sustainability. It encourages functional mix while preventing interference. For instance, mixed areas permit combinations of residential, commercial, and light industrial uses, subject to mixing degrees and scale restrictions. Classification also adapts to different development needs under the same function.

To protect the environment and living conditions while promoting efficiency, restrictions are placed on the negative externalities of different uses. Heavy industry, with significant pollution and noise, is segregated from residential areas, while light industry and commercial activities with lesser interference are permitted in certain zones with specific regulations.

The German development control system is a multi-layered one. Legally, the Building Code (Baugesetzbuch, BauGB) sets the top-level framework. At the planning level, both statutory and non-statutory plans provide spatial regulations. The building permit level ensures project implementation compliance. Different control tools at various stages form an effective hierarchical mechanism.

In practice, cities like Munich, Stuttgart, Hamburg, and Berlin show unique characteristics in land use classification in their land use plans (F-plan, Flächennutzungsplan) and building plans (B-plan, Bebauungsplan). In addition, there is a non-statutory intermediate framework plan (R-plan, Rahmenplan). The construction permit stage ensures a closed management loop.

Several project cases are analyzed. For example, Munich's Messestadt Riem follows a process from framework planning to construction guidelines. Stuttgart's Schoch area compiles the B-plan based on urban design. Hamburg's Port City adjusts the B-plan and F-plan according to project schemes. Berlin's Potsdamer Platz compiles block-based B-plans in a simplified B-plan context.

In conclusion, Germany's land use control approach provides valuable insights for sustainable urban development, thanks to its evolved system, clear principles, technical methods, and practical experiences.

Keywords:

Land use control—German planning system—Sustainable urban development—Project cases analysis

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T_17 PUBLIC SPACE (O) / 1865

STUMBLING AND GRAFTING: THE TRANSFORMATIVE POWER OF PASSAGEWAYS IN PUBLIC SPACE

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Public spaces are often conceptualized through notions of accessibility, continuity, and structured use. However, the dynamics of urban life are equally shaped by interruptions, unexpected encounters, and shifts in rhythm. This paper examines passageways as a spatial and social phenomenon that disrupts urban continuity, generating alternative public interactions and micro-transformations in everyday life. Specifically, it focuses on Büyük Beşiktaş Çarşısı (BBÇ). By engaging with Benjamin's montage principle, the concept of stumbling as a productive rupture, and Buck-Morss's critique of capitalist urbanism, this study highlights the transformative power of passageways as counter-sites within the city.

Public spaces are not neutral; they are shaped by contestation, negotiation, and power asymmetries (Lefebvre, 1991). Passages have historically functioned as urban generators, serving as both connectors and independent microcosms of urban life. Their permeability and adaptability allow them to host a range of socio-spatial practices, from informal economies to subversive urban movements. However, as Buck-Morss (2010) argues, modern capitalist urbanization increasingly produces self-contained, large-scale urban structures that prioritize efficiency and control, suppressing the unpredictability of public life. While contemporary urban megaprojects tend to reinforce rigid spatial orders and social stratification, the persistence of passages suggests an enduring urban desire for informality, local traditions, and contingent spatial experiences (Smith, 1995; Imai, 2018). This paper investigates the ways in which passageways-situated between street networks and enclosed architectural structures-resist homogenization by fostering unexpected social encounters, collective agency, and alternative urban rhythms.

BBÇ, as a multi-entrance passage with a porous architectural form, provides an ideal case study for understanding how urban thresholds can act as sites of transformation. Unlike enclosed shopping malls or gated spaces, passages such as BBÇ introduce a form of stumbling-a momentary rupture in the expected flow of urban movement. This stumbling effect creates temporal and spatial intervals that can generate new social possibilities. The act of moving through a passageway can similarly challenge dominant spatial

logics. Instead of merely facilitating movement, passageways momentarily suspend it, creating gaps in which urban subjects must renegotiate their interactions with the space and with each other.

This montage-like structure of passages also produces a form of grafting, where diverse urban practices intersect and hybrid social configurations emerge. As Imai (2018) notes, such urban thresholds reflect a broader tension between decay and renewal, informality and regulation, collective memory and emerging urban conditions.

Unlike enclosed shopping malls or gated spaces, passages such as BBÇ introduce a form of stumbling—a momentary rupture in the expected flow of urban movement. This stumbling effect creates temporal and spatial intervals that can generate new social possibilities, enabling alternative forms of civic engagement and public agency. As negotiated spaces, passageways exist in a constant state of contestation between formal governance and informal appropriation, state planning and local adaptation, control and resistance. While some passageways remain inclusive urban commons, others face increasing privatization, reducing their accessibility and reinforcing spatial exclusions. Yet, the ability of passageways to foster unscripted encounters, informal economic activities, and collective reappropriations highlights their potential as sites of spatial democracy in the city.

This paper contributes to the discussion on public spaces as agents of transformation by positioning passages as urban voids that foster hope through their capacity for openness, resistance, and reinvention. As Istanbul undergoes rapid urban change, understanding the role of passages in sustaining collective urban agency becomes increasingly critical. Rather than viewing them merely as residual spaces, this study argues for recognizing passageways as productive interruptions in the urban fabric-spatial conditions that enable alternative civic formations and reimagine the possibilities of public life.

Keywords:

public space, passageways, urban continuity, Istanbul, stumbling, grafting

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T_17 PUBLIC SPACE (O) / 66

Operationalizing Justice: Ethical Frameworks for Adaptive Planning in the Age of Planetary Crisis

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Planners today face an unprecedented dual challenge: addressing the immediate demands of crises like climate change, social inequality, and economic instability while ensuring justice and equity in the long term. These overlapping crises often intensify existing disparities, compelling planners to critically engage with ethical principles as a guide for transformative action. This paper delves into the practical application of justice in planning, highlighting the complexities of reconciling diverse interests and ideals within urban societies.

Through case studies focused on post-industrial urban areas and communities most affected by climate change, the paper examines three core dimensions: (1) the ethical foundations shaping decision-making in planning, (2) approaches to embedding justice and inclusivity into adaptive planning strategies, and (3) tools for mediating between conflicting societal priorities. It emphasizes participatory practices, interdisciplinary collaboration, and robust governance as key mechanisms for aligning ethical commitments with actionable solutions.

Grounded in distributive, procedural, and recognition-based justice theories, the study offers critical insights into integrating justice into planning efforts at local and systemic levels. It also underscores the importance of fostering resilience and inclusion, particularly for marginalized populations, while tackling broader challenges posed by planetary crises.

By exploring the ethical imperatives of planning in this transformative era, the paper aims to bridge theoretical and practical perspectives, offering concrete recommendations for planners, policymakers, and other stakeholders committed to advancing justice in a rapidly changing world.

Keywords:

ethics in planning; justice; adaptive planning; urban resilience; participatory processes

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T_17 PUBLIC SPACE (O) / 1731

Collaborative GIS for Sustainable Waste Management. The Case of Ulaanbaatar in the 3R4UB Project

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The increasing frequency and intensity of climate-related events have highlighted the fragility of urban areas, generating complex challenges in public spaces within cities. Communities are expressing a growing need to rapidly adapt urban environments to ongoing changes through a renewal process that integrates physical interventions in spaces with new housing models capable of responding to the demand for more inclusive, sustainable, and intelligent solutions. Solid waste management is a crucial issue that involves the environment, economy, and society, affecting public health, climate change, and urban sustainability (Rodic & Wilson, 2017; Wilson, 2007). In this

context, the Covid-19 pandemic has exacerbated these dynamics: on one hand, it has increased inadequate waste management due to disruptions in collection services and insufficient infrastructure; on the other hand, it has reduced commercial and industrial waste due to the temporary suspension of economic activities (UNEP, 2020b; Sharma et al., 2020).

From this perspective, collaborative planning approaches (Healey, 2003) and the application of citizen science (Haklay et al., 2020; Robinson et al., 2018) could improve citizens' responses to these dynamics by actively contributing to data collection and the definition of solutions for transformative actions at the urban level. This process, in the context of waste management planning, includes capacity-building activities aimed at providing tools and knowledge to promote virtuous, sustainable, and inclusive behaviours (Vohland et al., 2021). Promoting responsible behaviour among producers and consumers requires forward-thinking and collaborative decision-making, a particularly complex challenge in developing countries where adequate waste management infrastructure is lacking and awareness of 3R practices: reduce, reuse, recycle (Esposito De Vita et al., 2023; Memon, 2010).

This paper is part of the international project **"The 3Rs for a sustainable use of natural resources in Ulaanbaatar (3R4UB)"**, which aims to integrate waste management, civic participation, stakeholder dialogue and green financing by developing an innovative method that enhances communication and science to foster collaboration between citizens and public authorities. The city of Ulaanbaatar (UB), the capital of Mongolia, faces significant challenges related to rapid urbanization, informal settlements (gher) and inefficient municipal solid waste management.

Currently, waste management planning in UB is hindered by fragmented data and the lack of tools that integrate social, environmental, and infrastructural dynamics. Moreover, the urban context is characterized by a division into three distinct "cities": **(1) Planned city**, inherited from the Soviet period; **(2) Informal city**, characterized by gher settlements; **(3) City in motion**, where semi-nomadic conditions persist. Each of these urban forms presents specific needs and challenges, requiring an adaptive and multisectoral strategy.

The research methodology, named **Ulaanbaatar Spatial Sustainable Waste Management (UBSWM)**, aims to activate a collaborative decision-making process that integrates **GIS tools** and participatory practices to map waste flows, identify **waste collection hubs** (understood as new neighbourhood facilities), and develop environmental awareness strategies. The integration of **quantitative data**, such as infrastructure mapping and mobility flows, with **qualitative data**, such as **photojournalism** and the awareness strategy in schools, has enabled the construction of a multi-scalar narrative of urban dynamics. This approach has given voice to the **cultural diversity** of UB, transforming it into a strength for the implementation of adaptive and transferable solutions.

The research findings represent a **replicable model** to address the challenges of waste management in cities with similar characteristics, offering new perspectives for the creation of **more sustainable and equitable public spaces**. Among the research outputs, the development of an **open-access ArcGIS StoryMaps platform** is planned, which will not only provide an updatable tool to present the project's findings but also serve as a means for sharing knowledge with the involved stakeholders and local communities, reinforcing dialogue and co-production of knowledge.

Keywords:

CollaborativeGIS; CollaborativePlanning; CircularEconomy; SustainableWasteManagement; SwitchAsiaProgramme

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T_17 PUBLIC SPACE (O) / 139

Transformation of the Public Space of a Post-Socialist City in Wartime in Ukraine Based on Fractal Urbanism

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The article explores the functional and spatial transformation of public space in post-socialist cities of Ukraine in wartime, in particular, on the example of Poltava. The evolution of urban planning from the resource-centered approaches of the socialist period to modern inclusive and sustainable approaches is considered. Particular attention is paid to inclusiveness as a key aspect of transformation, which includes physical, cognitive and social inclusion. Challenges related to the adaptation of the urban environment to the needs of different population groups, including people with disabilities, veterans, and internally displaced persons, are analyzed. Examples of international projects aimed at developing an integrated urban environment are provided. The article emphasizes the importance of creating accessible, safe and comfortable urban spaces for all residents, which contributes to the overall well-being and sustainable development of communities.

Keywords:

functional and spatial transformation, public space, post-socialist city, inclusion

T_17 PUBLIC SPACE (O) / 533

Reshaping Urban Spaces: Exploring the Role of Temporary Public Open Spaces in Alleviating Land Pressure in Hong Kong

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As cities face increasing land scarcity due to rapid urbanization, temporary public open spaces (TPOS) have emerged as flexible solutions to alleviate urban pressures. This study investigates the role of TPOS in high-density cities, using Hong Kong as a focal point. Through a detailed examination of three case studies, this research explores how TPOS can mitigate the societal challenges caused by land scarcity.

The research aims to deepen the understanding of TPOS by analyzing their characteristics, practices, and effectiveness in addressing the social impact of land scarcity in high-density urban environments like Hong Kong. It seeks to answer three key questions: What are the core features of temporary public spaces usage in such areas? How do different types of TPOS address the social impact of land scarcity? And how can these insights guide the development of more structured TPOS policies?

The study employs a qualitative approach, including a comprehensive literature review of TPOS and comparative analysis of the selected case studies, alongside interviews with stakeholders. The research findings emphasize several critical factors for the successful implementation of TPOS. Moreover, by studying the temporary uses of public spaces, this study analyzes and derives policy recommendations for the design and management of TPOS in high-density cities like Hong Kong. It uncovers the potential of TPOS to enhance urban planning and offers guidance for developing a more systematic and comprehensive theoretical framework for public space policy.

Keywords:

Temporary Public Open Spaces; Land Scarcity; Urban Planning

Track 18 | TOURISM

T_18 TOURISM / 76

Exploring the genuine flavours of Tehran's cafes: a postmodern destination for tourism

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Globalisation and multiculturalism have significant impacts on food culture worldwide. International brands and cooking styles, especially in the fast-food industry, are prevalent even in small cities worldwide. With its diverse climate and local cuisine, Iran always has various cooking styles. Food plays a significant role in the local communities, ethnicity, and everyday life. The consideration of the regional and natural ingredients, cooking styles, and even cutlery are parts of this custom. However, the situation is different in major bustling cities like Tehran. In this city, the capital of Iran, fast-food and routine restaurants that serve the same foods are primarily ordinary, and some traditional foods are served as well. Meanwhile, some Western-style restaurants serve the most popular international foods, such as pasta, steaks, Italian pizza, etc. Here, some cafés play a different role as a third place, as Ray Oldenburg, the urban sociologist, introduces a home away from home. While people in a big city lose time on transportation and are busy with work, welcoming cafes open their doors to visitors, catering to the desires of citizens and strangers alike.

This research, which aims to uncover the role of Tehran's contemporary cafés in introducing and expanding Iranian local cuisines as a tourism destination, was conducted using a qualitative approach and ethnography method. The study involved 22 cafés and their users in Tehran city, explicitly focusing on the historical central area. It included observations and semi-structured interviews.

The outcome of the research shows that in recent years, some of these trendy cafes have had insightful impacts on introducing local and traditional Iranian foods and beverages to tourists and new national generations and as a pure remembrance to elders. Some home cafés symbolise the connection between yesterday's life and modern life, a postmodern destination. These spaces reuse old buildings as cultural spaces and cafes, helping to conserve the city's historical aspects, both physically and non-physically. The robust economy enhanced the intention of these café businesses as a thriving destination.

These places play a crucial role as a tourist attraction in the historical area of Tehran. The critical point is that not only are the architecture and physical elements attractive to users, but also the food, cutlery, table decor, and all details of the food traditions are celebrated, fostering a sense of cultural appreciation and respect. In the end, the main category derived from the study is authenticity, which illustrates the lost part of the city and the importance of cafés in conserving our past.

Keywords:

gastronomy tourism, postmodernism, café culture, authenticity, third place, heritage conservation

T_18 TOURISM / 506

Exploring tourism trends through transportation O/D data

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Until now, tourism statistics data have been limited to metrics such as the number of visitors to attractions, international tourist card sales, and the number of inbound and outbound tourists. However, recently, the advent of Origin-Destination (O/D) data in the South Korean Capital Region for tourism-related population movements have begun to be provided, it has become possible to analyze tourist mobility patterns at a micro-spatial scale and identify temporal tourism trends that were previously unattainable. Therefore, this study aims to overcome the limitations of traditional tourism research, which has primarily relied on surveys and qualitative methods, by utilizing tourist O/D (Origin-Destination) data extracted from urban datasets, this research conducts a quantitative and empirical analysis to explore these novel dimensions of tourism dynamics.

First, the study examine tourism flows and patterns from multiple perspectives by conducting gravity modeling and network analysis using O/D data from South Korea. The gravity model generates a matrix to quantify the scale of inter-regional tourism flows, and then the structural relationships (connectivity, centrality, and betweenness) and patterns within these flows are visually identified through network analysis. Additionally, the spatiotemporal panel analysis is conducted to uncover the temporal and spatial trends of tourism flows and causal relationships. Through these analysis processes, this study aims to comprehensively understand the tourism flows, spatio-temporal patterns and trends, and inter-regional connectivity.

The study integrates theoretical frameworks specifically the theory of tourist destination attributes, central place theory, and gravity models. As such, it employs gravity model analysis, network analysis (including centrality analysis), and spatiotemporal panel analysis. The study replaces qualitative variables commonly used in traditional tourism research with quantifiable variables for empirical evaluation. The dependent variable is the movement volume of international tourist. Key independent variables include destination choice attributes categorized as cultural factors (tourism facilities, historical and cultural resources, and festivals), natural factors (green spaces and waterfront areas), service factors (accommodation facilities and convenience stores), accessibility factors (public transportation density and proximity to airports), and prices factors (average price of goods or services at destination). Control variables include climatic characteristics (maximum temperature, diurnal temperature range, snowfall, and precipitation), demographic characteristics (gender and age of tourists), temporal characteristics (seasons, holidays, and weekends), and land use characteristics (developed commercial districts, local markets, traditional markets, and designated tourism zones).

This study found that, first, gravity model analysis identified regions with high and low tourism density. Second, network analysis assessed the centrality of regions frequently visited by international tourists, such as tourism central areas (degree centrality and eigenvector centrality) and tourism transfer areas (betweenness centrality). Visualizations further revealed regions with high and low inter-regional connectivity. Lastly, through spatiotemporal panel analysis, the study uncovered the spatiotemporal factors influencing international tourist movements and evaluated the spillover effects of tourist movements from specific regions to neighboring areas.

The significance of this study lies in overcoming the limitations of prior tourism research, which predominantly relied on qualitative or survey-based methods, by quantitatively analyzing objectively measured tourist movement patterns and flows. Specifically, this study utilizes O/D data to provide analytical and visual findings into the movement patterns of international tourists. These findings will provide actionable policy insights

for enhancing international tourist activities by identifying which the destinations preferred by international tourists and to identify the attractive factors of these destinations.

Keywords:

Tourism-Trends; Origin-Destination-Data; Central-Place-Theory; Gravity-Model; Network-Analysis; Spatiotemporal-Panel-Analysis

T_18 TOURISM / 640

From Global Indicators to Local Solutions: How to Foster Responsible Tourism for Rural Heritage Conservation

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The 1970s saw a significant increase in visitors to historical sites, leading to problems in managing these sites and the development of concepts in tourism and urban literature, such as “tourism carrying capacity”(Kuss and Morgan, 1980), “tolerance model”(Doxey, 1975), and “tourist perspective”(Urry, 1990). The pressures of visitor density and resource management inadequacies have created challenges in conserving heritage sites, with debates now centred on “over-tourism”, a continuation of the problems of tourism pressure in cities. In today's world, it has become necessary to view this issue from a broader perspective, analyse indicators in multiple ways, and develop new strategies.

UNESCO's (1976) analysis of tourism's effects highlighted its role as a promotional tool for weak economies, aiming to revitalise regional economies while emphasising the need to preserve existing conditions and create a new economic order (Imon, 2017). Fluctuations in global tourism and increasing scale have complicated the management of heritage sites, hindering the development of sustainable and responsible tourism strategies (Imon, 2017). When studies addressing these issues are evaluated, three key headings emerge: (1) environmental concerns, including climate change, pollution, and biodiversity loss due to economic growth; (2) social fractures in the reproduction of identity, locality, and cultural diversity; and (3) a new economic order shaped by globalisation, mobility, innovation, cultural commercialisation, and commodification.

This study seeks to understand the tourism and heritage dilemma, particularly in rural heritage areas, and contribute to the development of responsible tourism strategies. It focuses on sites with rural character and the risk of economic, social, and environmental vulnerability, rather than large-scale, tourism-intensive sites evident in the literature. The primary motivation of the study is the concern about losing authenticity and local identity in these areas, where these dynamics are particularly pronounced.

The selected cases include Cinque Terre in Italy (over-tourism), Honghe Hani Rice Terraces in China (unconscious use and destruction of natural formations), Lamu Island in Kenya (unpreparedness against tourism growth), Lenggong Valley in Malaysia (archaeological site destruction), Wachau Valley in Austria (increasing destruction of natural and cultural landscapes), Bagan in Myanmar (historic temples and uncontrolled tourism), Lake Bled in Slovenia (environmental carrying capacity issues), Giethoorn in the Netherlands (water canals and car-free living affected by tourism), Matka Canyon in North Macedonia (tourism integration challenges), and La Picadora in Spain (local over-reliance on tourism for economic gain). Each case has been analysed in terms of its heritage values, tourism structure, impact indicators of tourism pressure, and policies for responsible tourism. The literature has been grouped into economic, social, and environmental risks and presented in tables, enabling the coding of tourism impact indicators.

The tourism impact indicators derived from these reviews were analysed in Kemaliye, a significant rural heritage site in Turkey, to determine their presence in the area. Kemaliye, included on UNESCO's World Heritage Tentative List, serves as a study area that

has not yet been subjected to intensive tourism impacts, due to its small scale and rural character, yet possesses considerable potential. These global tourism impact indicators provide a framework for Kemaliye to develop appropriate tourism policies addressing economic development, local residents' quality of life, and environmental preservation. The study's findings contribute to academic research and policy development by offering a comprehensive framework that balances the competing concepts of tourism and heritage conservation. Analysing tourism impacts on small-scale rural heritage sites like Kemaliye before they intensify and developing responsible policies is critical for sustainable site management. Furthermore, the study serves as a reference for future research aimed at reconciling tourism and heritage conservation, two often competing yet essential concepts.

Keywords:

rural heritage, responsible tourism, tourism impact indicators, sustainable management, overtourism

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T.18 TOURISM / 847

From Company Town to Contemporary Art Capital? Assessing Urban Policies for Tourism Development through Contemporary Art in Turin.

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The relationship between culture and tourism has been increasingly pivotal in shaping urban development and academic discussion within tourism literature (Richards, 2018). The 'Bilbao Effect' triggered and amplified a segment of this growing debate specifically focusing on art and tourism (Franklin, 2018) and consolidated a 'ubiquitous narrative among urban decision makers' (Ponzini, 2010). While the policy transfer process and adapted replication of the model linking art and tourism in post-industrial cities have been widely discussed (Gonzalez, 2011; Giordano and Ong, 2017), the strategic and policy frameworks guiding local implementations remain mostly unclear. The same goes for the long-term impact of policy-stimulated contemporary art initiatives on tourism development beyond the Bilbao case (Franklin, 2016).

The article explores the relationship between contemporary art and tourism within urban development strategies and policies, using the former industrial city of Turin in Italy as a case study. The research examines Turin's three Strategic Plans (issued in 2000,

2006 and 2015) to address how the Municipality integrated contemporary art into its tourism strategy. It further asks whether Turin developed specific policies to implement this strategy and which actions and programmes have been designed to operationalise it. Finally, the article evaluates these policies' results through available data, underlining the lack thereof.

The paper employs a mixed-method approach to address the coherence between strategies, policies and results. It relies on qualitative content analysis of strategic plans, policies, reports and financial statements, semi-structured interviews with current and former policymakers and contemporary art professionals, and quantitative data from primary and secondary sources from the study period (1994 to 2023).

Findings highlight that Turin coherently implemented policies in response to strategic goals related to contemporary art and tourism. In this process, the City rejected a prescriptive implementation of policy models related to art tourism, developing and refining its policies in response to local conditions. Rather than building a flagship museum, Turin created and supported contemporary art institutions rooted in its history of artistic production and collecting. In terms of outcomes, these policies contributed to the consolidation and expansion of a rich 'system' of public and private contemporary art institutions and initiatives. Though it reached international visibility through its art fair - Artissima -, its development was curbed by internal competition, unstable coordination and decreasing funding from the City. The research crucially underscores Artissima's organisational priority to attract and retain a small niche of collectors against the City's broader tourism goals. It further reveals that the Municipality financially supported exhibition programmes and disregarded fostering new artistic productions against recommendations by local contemporary art researchers and practitioners. Finally, the lack or inconsistency of data on weekly tourism flows and contemporary art audiences prevented the City from exercising comprehensive monitoring.

Keywords:

contemporary art; art tourism; urban development

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T_18 TOURISM / 474

Planetary Gentrification of Rural China: the case of Yangjiale

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Yangjiale is a form of homestay in Mount Mogan Village, Zhejiang Province, China. New-comers from surrounding metropolises rented abandoned village houses in the local area, turning them into BnB, thus initiating a form of rural tourism called Yangjiale. Later, Indigenous Mount Mogan people, who lived in the surrounding cities, returned to their places of origin to exploit the new opportunities given by Yangjiale. After a fast period of initial growth, such a new form of rural tourism began to cool down, possibly due to the progressive loss of the quality experience made available in the early years of Yangjiale. This paper offers an overview of the phenomenon since its inception, focusing on the land use change associated with it associated. First historical data about the location of Yangjiale homestays was retrieved from local administrations and verified by fieldwork conducted in 2024. The complied dataset allowed for longitudinal understand of the locational patterns in the evolution of Yangjiale services from 1934 to 2022 Second the land-use change analysis with a focus on Mout Mogan Town administrative area was made possible via secondary data provided by the local administration, rendering the territorial transformation occurring from 2006 to 2020. Further investigation considered the planning scheme, released in 2021 with 2035 horizon. The findings reveals a progressive shrinkage and fragmentation of agricultural land. In contrast, the areas designated for orchards, tea plantations, and gardens have shown a notable increase. Rural residential areas have continued to expand, indicating a growing trend in continue expansion. The emergence and development of Yangjiale can be explained in light of a global gentrification process, which shows the urban entrepreneurial consciousness generated by the combination of international market forces and the new possibilities given by digital platforms. Thus, the process of touristification in rural China can be discussed as a form of counter-urbanization driven by the platform economy.

Keywords:

Yangjiale, touristification, counter-urbanization, urban entrepreneurialism, planetary gentrification, consumerism, platform economy

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T_18 TOURISM / 892

Medical Tourism and Urban Planning: Addressing Socioeconomic and Environmental Opportunities and challenges in Istanbul

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The prompt growth of medical tourism (MT) due to globalization has significantly impacted urban infrastructure, socioeconomic order, and environmental sustainability in host cities. Istanbul, a significant destination for international MT, serves an illustrative case study for analyzing this phenomenon. This study investigates how MT expansion affects urban planning, emphasizing the opportunities and challenges it poses for equitable development, social inequities, and urban sustainability.

This research uses a mixed methods approach to examine the relationship between MT and urban planning. The methodology leverages Social Impact Assessment (SIA) as a central framework to examine the multidimensional impacts of MT counting economic, social and environmental dimensions. SIA allows for a systematic analysis and evaluation including access to healthcare, housing affordability, cultural integrity, and community cohesion. Through SIA, this research will identify and evaluates both tangible and intangible outcomes, shedding light on how the prioritization of MT infrastructure effects local population.

To ensure a comprehensive understanding of the subject data collection integrate qualitative and quantitate methods. Primary data includes semi-structured interviews with stockholders, including healthcare providers, medical tourism companies, and urban planners as well as focus groups. Quantitative data will be collected through surveys directed at locals, documentation and literature on socioeconomic changes, healthcare accessibility, and housing affordability. A spatial analysis and comparison will be completed on the distribution and density of MT infrastructure across Istanbul, focused on three areas: high-density (Şişli), medium density (Maslak), and low-density (Beylikdüzü). This study analyzes differences in healthcare access, transportation networks, and accommodation facilities for these districts.

The initial findings indicate a dual impact of MT urban planning in Istanbul. On the one hand, MT produces considerable economic advantages, such as job creation, investment, and improvements in healthcare infrastructure. These advantages position Istanbul as a competitive global hub for MT, enhancing innovation and increasing its international reputation. On the other hand, the prioritization of MT infrastructure results in the diversion away from public healthcare, creating inequities for residents, increasing property values due to tourism demand, increasing housing affordability challenges, displacing low-income populations and escalating gentrification. Furthermore, environmental concerns emerge as a critical dimension of the MT's impacts. Increased tourism activity contributes to congestion in the roads, waste generation, and impact on natural resources. Theses problems highlight the necessity of developing sustainable planning strategies to balance economic growth with the preservation of the environment.

The study will address broader issues relevant to urban planning and tourism management, by look-in at destinations like Istanbul, that are most vulnerable to the pressure of MT, and how planning procedures might incorporate MT and sustainable tourism concepts. It will explore innovative approaches to minimize consequences of excessive tourism, like implementing green infrastructure, encouraging resource-efficient development, and encouraging cooperation between local communities. The full conference article will report the preliminary results of the study, presenting a detailed analysis of Istanbul's MT infrastructure and its socioeconomic impacts.

By fostering dialogue on the critical issues, this study aims to equip decision-makers with the tools to create cities that balance the demands of tourism with the needs of their inhabitants. It encourages comprehensive urban design, fair resource allocation, and long-term viability of cities that rely heavily on tourism via the theoretical understanding of MT's role in urban transformation and provide practical recommendations for policy-makers and urban planners. It emphasizes the necessity for a paradigm shift in tourism planning transitioning from focusing on economic benefits to prioritizing sustainability, social equity, and urban resilience.

Keywords:

Urban Planning; Medical Tourism; Sustainability; Social Impact Assessment; Istanbul

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T_18 TOURISM / 1275

Traveling for Concerts: Fandom Tourism and the Creatively Repurposing of Urban Spaces

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"Traveling for concerts" has become a popular tourism trend in China (He & Fu, 2024). Besides attending performances, travellers would explore host cities. More audiences, especially celebrity fans, now travel to other cities for an event. This type of tourism, tied to specific events or media content, is not a new phenomenon. As early as the 1980s, the influence of films and TV dramas on tourism destinations was recognized, making "film tourism" a significant topic in tourism studies (Nakayama, 2021). Later, the impacts of novels (Reijnders, 2011; Belarmino, 2023), anime (Jang, 2020), sports competitions (McManus, 2020), and music festivals (Kinnunen & Honkanen, 2021) on tourism experiences was also acknowledged. To boost tourism, the Japanese government introduced contents tourism (Graburn & Yamamura, 2020), referring to travel inspired by popular culture, alongside similar concepts like events tourism (Getz, 2008).

These concepts are typically defined around specific events or destinations. However, as active participants in affective consumption, fans' travel behaviours could be far more complex, especially when involving cross-city trips. For example, fans may collaborate with cafés near concert venues to set up (celebrity) concert-themed exhibitions, transforming the cafes into temporary "fandom attractions" which may be more appealing than real attractions. In this process, fans not only utilize urban spaces but also creatively reimagine them. This model is providing new momentum for tourism development and urban regeneration for major cities in the post-urbanization phase.

As China's fan economy is thriving, the fandom activities are becoming increasingly diverse. While engaging with the cultural functions of cities, fans also contribute to their renewal. This phenomenon is difficult to be explained solely within the frameworks of

content tourism or events tourism. Thus, this project conducts exploratory research aimed at providing an overview of fandom tourism. Using questionnaires and semi-structured interviews, the study investigates fans' experiences of traveling to another city for events related to their favourite celebrities. Through grounded theory analysis, the study develops a theoretical framework for fandom tourism.

From a behavioural perspective, this study found that fans' travel plans are primarily centred on celebrity-related events. The timing and location of these events play a key role in shaping their other travel choices. Activities in fandom tourism could be divided into three categories based on their relevance: core, related, and other activities. Firstly, core activities are the events that drive fandom tourism, typically tied to major cultural and sports complexes. Related activities include collective, social, and ritualistic activities, which may overlap. Collective activities, commonly arranged by fan organizations or event hosts, occur in large public spaces near event venues. Social activities are a key part of the fan experience, creating a demand for social spaces. Ritualistic activities involve fans visiting celebrity-related locations and re-enacting the celebrities' actions at those places. Related activities would interact with urban commercial areas, green spaces, and other public spaces. Fans may not only utilize existing spatial functions but also creatively repurpose these spaces. Other activities mainly involve visiting local attractions or socializing with non-fans. In these cases, urban spaces are utilized in their intended functions. Though fan-related behaviours may still occur, such as taking photos at landmarks with the celebrity's poster.

In the "post-urbanization" phase, urban development faces transformation and spatial restructuring challenges. As a driver of urban optimization, cultural consumption is one of the central elements of the "beyond growth" framework. This study develops a framework to better understand fandom tourism and its impact on urban spaces. Fandom tourism theory may aid in optimizing public services, revitalizing urban spaces, and supporting the integration of cultural and tourism industries, while exploring modern travel behaviours and sustainable development.

Keywords:

fandom tourism; urban regeneration; tourism behavior; cultural consumption; China

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Exploring Tourism related Conflicts among Stakeholders: A Neighborhood in the Historical Peninsula, İstanbul

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According to the World Tourism Organization (2024), estimated number of international tourist arrivals (overnight visitors) during the first nine months of 2024 is 1.1 billion and statistics show us that 2024 will be fully recovered the pre-pandemic period. Although Covid-19 is one of the biggest international crises in recent years, the number of travelers has increased rapidly. Therefore, urban spaces where have intensive tourism activities continue to transform. About this issue, the overtourism concept is discussed, while some destinations have been faced discontent of the local people.

Tourism is a complex system that includes many different stakeholders. In addition, these actors have a close relationship with each other in places where tourism activities take place. Understanding the conflicts among stakeholders and identifying problems in tourism destinations can be seen as the first step in a successful spatial planning process and creating useful strategies. For this purpose, conflict analysis is used in this study as a systematic tool for analyzing data and categorizing them according to theoretical framework of (Almeida et al., 2017). This approach is used in various fields in literature; however, it is modified for specific areas in Almeida's study which creates eight categories in order to evaluate tourism related conflicts in spatial planning process.

Küçük Ayasofya neighborhood is determined as a study area where development of tourism activities lead to spatial and socio-cultural transformation dramatically in. This neighborhood is in the most famous tourism destination of the city called İstanbul Historical Peninsula. There are two underlying reasons why this investigation focuses on this neighborhood as a tourism destination are unique characteristic of this place compared to other neighborhood in this region and having excessive amount of tourism activities and accommodation facilities.

According to results, conflicts related to stakeholder interests and institutional framework are much more than other conflict categories in this neighborhood. The main source of conflicts is about stakeholder interests especially for material and procedural interests. When we look at the material interests, most of them are related to land use problems mentioned by locals and tourism entrepreneurs. It can be considered these material interests as consequence of overtourism. The second most frequently cited conflict category is institutional framework. Conflicts in this category were divided into two groups and mentioned by all stakeholders. Reasons of institutional framework conflicts mentioned by different stakeholders consist of, firstly, the indifference of the administrations about this destination, and secondly the authority fragmentation in planning and the resulting uncertainties. Like procedural conflicts in the category of stakeholder interests, these institutional framework conflicts are generally associated with planning process and governmental issues of the neighborhood.

Managing tourism activities in an urban space is a very complex issue as each stakeholder has different expectations and demands. In this context, the study aims to reveal the reasons for the problems that create conflicts among stakeholders. In addition to evaluating all these conflict categories separately, establishing a holistic relationship between stakeholders and conflict categories is also very important to understand the problems related to tourism in Küçük Ayasofya Neighborhood. Framework provides us with understanding about not only categorizing the conflicts and their underlying reasons but also giving information about which conflicts mentioned more by specific group of stakeholders. It is very crucial for tourism planning and policy making processes for tourism destinations to observe which stakeholder groups consider different conflict categories more important and mentioned more frequently. Determining conflicts systematically is essential for resolving them and a better tourism destination planning process requires understanding these conflicts clearly. Thus, destinations can be more resilient towards crises and destination development process can be more sustainable.

Keywords:

conflict analysis; overtourism; tourism stakeholders; historical peninsula

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T_18 TOURISM / 1298

Urban space and socioeconomic transitions in cultural tourist cities after the pandemic. Reflections in the framework of transition studies

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The paper frames selected spatial questions linked to the ‘pandemic shock by Covid-19’ into the transition studies and spatial turn literature. Specifically, the research focuses on socioeconomic conditions related to the tourist sector in Milan, Florence, Rome before and after the Covid-19 crisis, to investigate if and which spatial effects were produced by the pandemic, by a re-negotiation of the space linked to new policies, and, thus, which new actors took the fore, acquiring power.

The research focuses on tourism, culture and leisure, which is a wide field to be studied under dozens of lenses (economic, sociological, geographical, anthropological, political...). Thus, the first phase of the work was aimed at reducing the scope of these multi-scalar and intertwined domains, framing tourism as a socioeconomic and spatial ambit characterised by flows of people that cross places for specific reasons, mainly linked to leisure activities, and by economic actors that are related to the supply (online platforms, traditional economies, public bodies, associations, activists). Leisure activities are all those satellite activities that sustain the supply in tourist cities, while culture is meant as a material cultural heritage that tourists can visit. The governance related to those is also taken into consideration by the research.

The final aim is to trace the emergence of ‘niches of innovation’, that are provided by firms, governments, and civil society groups and promote sustainable transitions “as shifts from one stable socio-technical configuration to a new one by interacting processes at the different

“levels” of landscape, regimes and niches, hence the term MLP (multi-level approach, noa). [... The] MLP approach suffers from a missing or naive conceptualization of space (Cooke, 2010; Hodson e Marvin, 2010; Smith et al., 2010; Spath e Rohrer, 2010)”. (Coenen e Truffer, 2012: 369). In order to achieve the research goal related to the tourist sector in cultural cities (Milan, Florence, Rome), a one-year study on the field led to some statistical evidence and geographical information to introduce the state of the art before and after the pandemic and some hints from a set of semi-structured interviews to specific actors in the sector (public, private, institutional, associations). Indeed, the question of the spatial externalities related to Covid-19 necessarily takes into consideration the governance sphere at different levels. Are the political institutions aware of and responsive to the changes linked to the tourist sector (not only the socioeconomic ones but also the spatial ones) in cultural over touristic cities? The awareness and responsiveness (in terms of enabling or disabling processes of innovation) of the institutions can improve the preparedness, social bonding and sustainability of transitions at the local level. Thus, it is crucial to evidence the ‘niches of innovation’ and the interactions between them and the public sphere. The paper is part of a wider research funded by the Ministry of Research that investigates not only the tourist sector, but also the industry, logistics, and higher education in the three case studies mentioned above.

Keywords:

overtourism; urban space; urban policy; governance; preparedness

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T_18 TOURISM / 1406

Navigating the University-Tourism Nexus: Employing Participatory Strategies for Livability in Sorrento

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The interplay between universities, urban environments, and their diverse populations often presents both unique opportunities and challenges. This case study examines how best to mitigate challenges while building on opportunities through the use of participatory practice approaches in the university classroom. The approaches leverage theoretical instruction in conjunction with participation as a tool to build relationships within the community and address the urgent Peninsula issues of housing affordability, sustainable tourism, and livability. Sorrento, known for its cultural heritage and thriving tourism industry, faces challenges that mirror those of larger metropolitan destination cities. These are tied to rising housing costs, exacerbated by the growth of short-term rentals and growing pressures of tourists on city infrastructure. These dynamics have strained local residents, many of whom struggle to remain in their communities due to financial pressures and limited housing availability (Kennedy, 2020). Leveraging participatory approaches, the study highlights the integration of university populations, residents, municipal authorities, and other stakeholders to co-create solutions that balance the needs of locals with the demands of tourism (Innella et al., 2024) (Consilvio, 2024). Key findings from surveys and interviews reveal that residents feel underrepresented in decision-making, with many voicing concerns about the prioritization of tourism over local needs. By promoting open dialogue, fostering community engagement, and drawing on successful case studies from cities like Amsterdam and Barcelona, the research identified and presented actionable solutions, such as improving regulations on short-term rentals, implementing rent controls, enhancing public transportation, and developing a place-based, interactive responsible tourism campaign and a catalyst for growth and larger development projects.

Moreover, the study underscores the importance of embedding human rights principles—such as the right to housing and cultural participation—into policy frameworks to ensure equitable outcomes. Through student coursework using in-depth exploration of human rights law, participatory practice, and sustainable development principles, students utilized their curriculum in theory and practice to engage directly with the Sorrento community in their university neighborhood and the municipal government. The Service-Learning (Saija & Pappalardo, 2024) course design and place-based engagement serve as a conduit to foster strong bonds within the community through research, data collection, group discussion, and surveys. Co-design and co-creation are powerful tools that require collective brainstorming, cooperation, and collaboration. These types of exercises using real-world examples and case studies to build a sense of problem ownership (Cruz et al., 2022) and motivation, shaping the students as part of the Peninsula's problems, but also that of the solution and fellow stewards of its resilience. Initiatives like community-led housing projects, nature-based solutions, and educational campaigns aim to empower residents while preserving Sorrento's unique cultural identity. This case study demonstrates that participatory practice is an effective and necessary tool for creating sustainable and inclusive urban environments, especially in small cities, offering a model for other destinations grappling with similar challenges (Arellano et al., 2016). Through collaboration and innovation, Sorrento has the potential to reconcile the needs of its residents and its role as a global tourist destination through a participatory system approach that fosters long-term bonds with tourists, residents, higher education institutions (Barnet et al., 2021), and their students.

Keywords:

Sustainable Tourism, Urban Regeneration, Small Cities, Participatory Practice

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T_18 TOURISM / 1416

Exploring the Politics of Gastronomy Tourism and Gentrification Nexus: Gastro-Driven Development and Peri-Urban Geographical Change in the case of Urla Izmir

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The relationship between gastronomy tourism and urban/rural transformations has become a planetary phenomenon, mostly studied within the circles of sustainable tourism (Crespi-Vallbona, et. al., 2017; Gezici, 2006), urban geography (Kowalczyk & Derek, 2020), planning and city branding (Booyesen and du Rand, 2019; Deffner, et. al., 2019) particularly at the intersection of deepening gentrification, and exacerbated socio-spatial inequalities. The ways in which gastronomy tourism influences gentrification and reverse migration in peri-urban geographies—spaces blending urban and rural characteristics—remain underexplored. This study critically elaborates the mutually constitutive relations amongst gastronomy tourism, gentrification, and reverse migration, by concentrating on the peri-urban geographical context of Urla, Türkiye, as a case study.

Urla district, in the Aegean metropolitan city of Izmir, has undergone significant socio-spatial and socio-economic transformations in the last two decades, driven by the concomitant rise of gastronomy tourism, reverse migration and property-led gentrification. Michelin-starred restaurants, luxury wineries, countryside hotels and gated-luxury villas have emerged as both the symbolic and material spatial reflections of this change. We argue that there is a deep rooted and constitutive relation amongst gastronomy tourism, gentrification and peri-urban geographical transformation, that is defined as “gastro-driven gentrification” in our study, a phenomenon in which gastronomy tourism becomes a catalyst for gentrification processes, reshaping extended urban geographies at planetary scale. Reverse migration fuels these dramatic processes, stimulating the gentrified peri-urban transformations, introducing new socio-economic dynamics and further complicating the forms of socio-spatial injustices.

Through elaborating a critical cultural political economy perspective, the research investigates whether gastronomy tourism acts as a driver of gentrification and reverse migration in Urla and explores how these intricate, and mutually constitutive processes transform peri-urban geography. The study draws on mixed-methods research, including qualitative approaches such as in-depth interviews with local stakeholders (residents, policymakers, and business owners), participant observations, and content analysis of the related media materials. Quantitative methods include spatial analysis of land use changes, demographic shifts, and economic data related to the rise of gastronomy tourism in Urla. This approach allows for a comprehensive understanding of the socio-economic and spatial dimensions of gastro-driven gentrification.

Preliminary findings indicate that gastronomy tourism has skyrocketed property values, triggered cultural commodification, and the displacement of long-term residents, dramatically transforming the socio-cultural fabric of Urla. Reverse migration has further intensified and fueled these changes, as affluent urban residents seeking lifestyle migration often prioritize the consumption-oriented amenities introduced by gastronomy tourism over the preservation of local identity and practices. The peri-urban geography has also significantly changed within this transformation process. While these developments generate economic development and brand recognition for Urla, they also highlight critical tensions between tourism-driven development, socio-spatial injustice, and environmental sustainability.

The findings of research have potentials to make contributions in understanding the socio-spatial implications of gastronomy tourism within the broader framework of peri-urban transformations. Locating Urla's transformation within the context of planetary crises and unsustainable tourism development, the study will also provide a ground to key debates on how sustainable forms of tourism could become a locomotive in climate resilient, environmentally sustainable, and socio-spatially just cities (Gezici & Salihoğlu, 2016). By addressing these issues, the study provides insights into how gastronomy tourism impacts peri-urban transformations and highlights the potential of place-based planning practices to mitigate the negative impacts of unsustainable tourism. It emphasizes the need for sustainable tourism planning to prioritize environmental sustainability, cultural authenticity, and socio-spatial justice, offering lessons that extend beyond Urla to other peri-urban regions facing similar challenges.

Keywords:

Gastronomy Tourism; Gastro-Driven Gentrification; Reverse Migration; Peri-Urban Transformation; Urla Izmir

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T_18 TOURISM / 1733

City Branding, Urban Tourism, Urban Planning: Interrelationship Through Research Focusing on Governance in Greece

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This paper explores the intricate relationship between city branding/ marketing, urban

tourism and urban planning, emphasizing the need for effective collaboration between practitioners and academics in the context of Greek cities. Despite the potential benefits, tensions often arise between city branding strategies and urban development policies.

Research Purpose: The research aims to understand the challenges and successes of implementing city branding/ marketing strategies (incorporating tourism) within urban planning frameworks in Greece, highlighting the gaps between theory and practice.

Methodology: To bring new light to research done in previous years, a meta-analytical approach was implemented in selected research that has been conducted by the Laboratory of Tourism Planning, Research and Policy, Department of Planning and Regional Development, University of Thessaly, Volos, utilizing case studies from two medium-sized cities, Larissa and Kozani, and the centre of Athens. Participants included local officials, stakeholders, and community members, who were consulted mainly through the Goal Oriented Project Planning (GOPP) procedure in Larissa and Kozani. In these cities, a mixed-methods research design was employed. Athens was a more complex case in which interviews were mostly applied.

Principal Results: Findings reveal that local governance structures in Greece struggle to adapt to modern branding tools, leading to non-implemented plans ('autonomous' city marketing plans in Larissa and Kozani, as well as a new type of urban plan, the Integrated Urban Intervention Plan (SOAP) for the centre of Athens) and a lack of strategic clarity. Larissa and Kozani's collaborative approach with the municipality yielded more comprehensive insights into community needs, while Athens faced challenges due to a more top-down strategy.

Major Conclusions: The study underscores the necessity of effective governance and multi-stakeholder engagement in enhancing city branding and urban tourism efforts. It suggests that urban planning can benefit significantly from city branding/ marketing principles, advocating for a shift towards a more inclusive and adaptive governance structure in Greek cities. Furthermore, the potential of artificial intelligence (AI) in city branding, urban tourism, and urban planning dilemmas, particularly linked to urban governance, is an exciting prospect, including problems that must be explored.

Keywords:

city branding/ marketing; urban tourism; urban planning; urban governance; Greece

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T_18 TOURISM / 204

Beaches Matter. Mass seaside tourism and the social dimension of shores, what future?

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Coastal areas underwent a radical transformation during the twentieth century related to the beach tourism industry. The development of beach tourism in Italy had a significant impact on the gradual transformation of the coastal landscape from elitist to mass tourism between the 1950s and 1960s, leading over time to the recognition of the coast as a major economic driver.

This beach revolution has led to the establishment of tourist and recreational facilities along the coast, changing the dynamic nature of the beach and disrupting the ecological continuity between land and sea. Originally, the beach had a marginal role, mainly used for defence and security, but as beach tourism became established, its function expanded to include economic and recreational uses.

Local governments, to meet the growing demand for beach entrepreneurship, have authorised the construction of brick buildings directly on the beach. This development has led to a linear, discontinuous and sometimes illegal urbanisation, with buildings, hotels and second homes characterised by marked morpho-typological heterogeneity.

In this context, many Italian coastal localities have been transformed into “summer cities,” characterised by a building frenzy that has radically altered the natural landscape, resulting in a continuous urbanisation of coastal areas, with anonymous tourist settlements, the irregular proliferation of hotels and second homes, and the intensive occupation of beaches with often precarious equipment and facilities.

The result is a fragmented coastal landscape of low quality, with houses built on the water. The state property line, which marks the boundary between the maritime domain and the property of third parties, has been eroded in some places, widened by sand accumulations in others, and no longer exists. In some areas, the state property divide has become a mere theoretical line, coinciding with the shoreline. This raises the need to rebuild a public domain, which guarantees access to the coasts for all citizens, also in response to the impacts of climate change, which seem to be getting worse in coastal areas.

This indiscriminate urbanisation has had serious environmental repercussions. The continuous construction of buildings close to the beach has contributed to the degradation of dune landscapes and the loss of natural habitats. Mass tourism has also led to a change in the natural and cultural characteristics of the coasts, which have been transformed into value-extraction assets and merely consumer and economically exploited spaces. At a social level, the intensive occupation of beaches has generated profound inequalities, with the beach becoming an exclusive good, accessible mainly for a fee. The proliferation of beach establishments, which now occupy 43% of Italy's sandy coastline, has reduced the free beach areas, making access to the sea difficult for many citizens. Free beaches have increasingly become marginalised and, in some contexts, relegated to peripheral or inaccessible areas. The situation is particularly critical in some regions, where the occupation of the coast has reached extreme levels. In Campania, as an example, gates and barbed wire have even been installed to prevent public access. This has transformed the beach from a public good into a commodity, reducing its social value and making collective enjoyment difficult.

Today, coastal tourism and the management of beach concessions pose complex challenges, with the Bolkestein Directive offering an opportunity to reverse a trend that has ignored the public nature of the beach. Based on these considerations, the contribution investigates the beach concession as a possible design tool that favours a new management model capable of responding to the demand for free use and guaranteeing the right balance between the different interests at stake to preserve the ecological, social and cultural function of Italian beaches.

Keywords:

seaside tourism; beach concession; Bolkestein

T_18 TOURISM / 492

The messy interplay between forces of resistance and forces for

change in territorial transitions: A case study of an Alpine ski resort

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For decades, emphatic calls for adaptation to climate impacts due to human-caused global warming have been rarely heeded in practice. A daily read of any reliable news source demonstrates that adaptation measures to confront climate impacts are inadequate, if existent. In parallel, climate change adaptation in the planning literature has mainly focused on policy reforms and infrastructure revisions to implement adaptation practices and resilience. On the one hand, since Rittel and Webber (1973) introduced the concept of a 'wicked problem,' planning scholarship has excelled at dissecting and understanding the complicated context of built environments and intersecting processes at play. On the other hand, because planning tends to remain 'future-focused' and normative, planning scholarship may miss the broader temporal settings critical to understanding the fabric of forces in motion that resist change.

To better understand the temporal dynamics of territorial transitions, we present a framework to identify inertial forces as a way to investigate the interplay between resisting and transforming forces within a territorial context. We adopt the Franco-concept of a *territoire* as multi-scalar in the material, institutional, and ideal dimensions (Pachoud et al., 2022). The material dimension encompasses the spatial extent of the biophysical matter and the built environment, including infrastructure. Concepts such as 'path dependency' (Haasnoot et al., 2020) allow us to consider how planning decisions and long-term infrastructure investments reshape the surrounding territory while remaining 'fixed' (Brochet et al., 2025). The institutional dimension includes the territorial actors and the rules and norms that guide their practices. New institutional economics theory offers a way to analyze the role of 'transaction costs' in shaping these governance and institutional arrangements (Shahab, 2022). Finally, the ideal dimension refers to all that contributes to the territorial actors' imaginaries, including their identities, cultural values, and attachments to the territory. Though completely immaterial, imaginaries have a consequential role in shaping territories (Hommes et al., 2022); the ways in which they persist or evolve plays a critical part in the capacity of actors to envisage territorial futures.

We mobilize this framework in the context of a medium-sized, mid-mountain ski resort community in the French Alps, Saint-Pierre-de-Chartreuse. Located north of Grenoble, tourism for this community started to develop in the early 20th century, becoming a ski resort village in the 1950s with major re-investments in the 1980-90s. Today, the local community has embraced a collective planning effort to confront their climate realities and economic pressures linked to the uncertainty of ski operations. This case study highlights the coexistence, and at times, strong opposition between forces of resistance and transformation; it also demonstrates the importance of collective planning to evolve actors' imaginaries about transitions before conflict-minimizing adaptive actions can be implemented.

Keywords:

Territorial Transitions; Social Inertia; Pathway Dependency; Imaginaries; Ski Resorts

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T_18 TOURISM / 266

Land Use Planning for Second Homes in Norway: Addressing the Challenges of Balancing Expanding Touristification, Environmental Sustainability and Competing Local Identities

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The growth of tourism, and particularly second-home development, has created significant challenges for municipal land use planning in Norway. Ownership of a second home in the mountains or coast for sport and relaxation is a long-standing part of Norwegian culture and lifestyle. However, their growing numbers and intensive commercialisation in connection with new forms of tourism have raised concerns about how their development can be harmonised with national targets for environmental sustainability. There is a touristification of second homes aimed at short-term occupation. Climate change is also a factor in encouraging increased construction, with locations previously considered only suited for Winter sports now being marketed as year-round destinations with all the amenities this requires. In this paper, I draw on my qualitative research on the planning dynamics of local municipalities to explore these changes and how planners and politicians address concerns regarding environmental sustainability. The findings of my qualitative research demonstrate that municipalities play a key role in promoting sustainable tourism, but this is done in tension with multiple competing agendas. Also, drawing on a theoretical framework informed by Steven Luke's three dimensions of power, my research reveals the tensions and negotiations between the demands of global tourism, local landowners and the limited resources of local planners and governments. In conclusion, the proposed paper suggests a need to redesign planning procedures. I argue that through planning, the needs of the local economy must be balanced with long-term concerns regarding environmental sustainability and the concerns of a plurality of local identities.

Keywords:

Second Homes; Tourism; Climate Change; Environmental Sustainability; Power; Planning

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T_18 TOURISM / 1302

Tourism-led regeneration strategies in left-behind regions: healing therapy or end-of-life care?

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Tourism-led regeneration is emerging as a widespread strategy to bring some economic resources to left-behind places. While many cities across the world are dealing with the consequences of over-tourism and increased rates of short-term lettings (e.g., increased house prices, inflation of consumer costs and wider clashes between residents and visitors or the seasonal population of these touristic hotspots), tourism is seen as the potential “healing therapy” solution for many declining regions and towns. However, is betting on another extractive economic activity, such as tourism, really a sustainable path for regeneration in left-behind places?

In the UK, seaside resort towns have served as a landmark example of how tourism can create economic lock-ins and as such they have been defined as a British “Salt Fringe”, in analogy with the American “Rust Belt”.

In many cases, branding strategies to attract tourism in these areas are anchored on the very same industrial past of these locations or the landscape opportunities offered by their liminal geographies (e.g., mountain and rural areas or even coastal ones). But is this a positive way of incorporating the past legacy or just another way of fuelling feelings of nostalgia and discontent? This paper explores a selection of left-behind places where tourism has been used as the main strategy to revive the local economy and the connected spatial imaginaries evoked to establish whether signs of healing have appeared or whether this was rather an end-of-life care measure.

T.18 TOURISM / 325

Identification of Spatial Conflicts between Tourists and Local Residents: Based on “Nanjing Travel Pitfall Avoidance” Posts on Weibo and Xiaohongshu

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The rapid development of mobile Internet has made it more common for tourists to actively share their travel experience and itineraries on social media platforms, influencing the offline travel destination choices of other tourists with similar travel intention. This has had a huge impact on the traditional tourism routes, which were once centred around travel agency-recommended attractions. The spatial range of tourists is no longer confined to limited tourist attractions of the past, but gradually permeates into the daily lives of local residents, leading to a reconstruction of the urban tourism space. However, the activity trajectories of local residents are regular, and their living spaces are also relatively stable. This emerging shift in tourism trend has inevitably led to spatial conflicts between tourists and local residents, disrupting the original balance of space usage. In recent years, numerous “Travel Pitfall Avoidance” posts have emerged on social media platforms such as Weibo and Xiaohongshu. These posts reflect the dissatisfaction of tourists with certain urban spaces, many of which are closely related to the living spaces of local residents, becoming an important manifestation of the spatial conflicts between tourists and local residents.

This paper focuses on the spatial conflicts between tourists and local residents. It selects “Nanjing Travel Pitfall Avoidance” posts from popular social media platforms such

as Weibo and Xiaohongshu as the research data. Text mining techniques are used to extract spatial location information from the posts and their comments. By utilizing ArcGIS for spatial localization and spatial analysis model construction, the paper analyses the distribution of spatial conflicts between tourists and local residents in Nanjing, as well as the underlying causes. The paper also categorizes the types of spatial conflicts and provides targeted strategies for alleviating these conflicts. Strengthening the identification of spatial conflicts will provide scientific evidence for urban planning, tourism management, and community development in Nanjing, facilitating better coexistence and sharing between tourists and local residents.

Based on preliminary judgment, the following conclusions can be hypothesized. The spatial conflicts between tourists and Nanjing residents primarily concentrate in three types of areas: high-profile spaces that are deeply embedded into the daily life of local residents' communities, spaces with a high frequency of use by local residents but with low levels of tourism service facilities, spaces served for transportation and mobility. Additionally, with the rising demand of tourists for ecological environments and landscape quality, the distribution of spatial conflicts also shows seasonal variations. The emergence of spatial conflicts between tourists and local residents is essentially a result of the mismatch between spatial supply and spatial demand caused by the development of the mobile internet.

Keywords:

space conflict, mobile Internet, social media, urban tourism

T_18 TOURISM / 1497

Between overtourism and abandonment: territorial tensions in coastal areas

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In many regions of the world, and undoubtedly among them in Mediterranean countries, the dynamics of tourism are laying bare many tensions of a social, economic, cultural and spatial-territorial nature. Many cities are affected by heavy dynamics in which tourism-related transformations are intertwined according to recurring but contextually determined logics with dynamics of gentrification and replacement of resident populations; at the same time, in both coastal and mountainous areas, the tourism models of the past, rapidly obsolescing, leave behind a legacy of abandonment and underuse of buildings and parts of settlements.

In particular, in many coastal areas of the Mediterranean, and therefore also in our country, different models of tourist use have followed one another over the decades, and have become intertwined with the peculiar economic and social dynamics of each context, such as the more or less accentuated tourist specialisation of the labour market, the temporal forms and models of heritage use (e.g. that of second homes), the new residential and work models of metropolitan populations, and so on.

Starting from this problematic background, the paper questions the peculiar relations that can be read at a spatial level between overtourism and abandonment, which sometimes affect different territories, but which in many cases affect, on the contrary, the same contexts. In particular, the paper critically discusses some cases of abandonment or underuse of buildings, structures and tourist complexes in coastal areas, where in other respects the dynamics of tourist flows lead to congestion, overuse of existing infrastructures and services, and expulsion of the resident population, starting from some contexts of the Tyrrhenian coast in Italy and the Ionian coast in Greece with a long tradition of tourism, which has therefore gone through different phases and patterns.

The research carried out in these contexts shows the difficulties associated with the passive adherence to a development model based on a sector that is undoubtedly important, but with low added value and based on the depletion of environmental and territo-

rial resources, and the importance of initiating a critical, contextual and argued reflection as a basis for imagining different development policies.

Keywords:

coastal areas; overtourism; abandonment

T_18 TOURISM / 1265

Examining the Phenomenon of Overtourism in the Context of Local Community Perception: The Case of Bodrum.

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The concept of “overtourism,” introduced by Claudio Milano in 2017, is defined as the increasingly unsustainable development of mass tourism practices (Milano, 2017). This phenomenon addresses the unsustainable social, economic, physical, and environmental impacts of tourism activities on destinations, particularly focusing on the perceptions of local communities. The effects of overtourism include the disruption of local spatial usage habits, overcrowding and traffic in public spaces, economic dependency on a single season or sector, rising property prices, environmental degradation, and reduced contributions to the local economy. These issues lead to local residents feeling discomfort with tourists, a decline in their sense of belonging, and eventual abandonment of residential areas. Although the concept of overtourism is considered a relatively new phenomenon in the literature, studies on the impacts of tourism on settlements have been conducted in various fields since the 1960s. Initially, this body of literature was limited to examining the economic effects of tourism, but by the 1980s, it began focusing on the environmental impacts of mass tourism. However, the social impacts of tourism on community structures were less frequently studied during this period. In the 2000s, studies addressing the social effects of mass tourism from the perspective of local perceptions gained momentum. The introduction of the concept of overtourism into the literature in 2017 has since gained significance as a contemporary field of research, emphasizing the viewpoint of local communities. According to Dods and Butler, the emergence of overtourism is driven by the tipping point of public resistance to tourism and the transformation of almost every area into a tourist destination. The increasing ease of travel has created a flow of visitors on an unprecedented scale, further complicating the lives of local residents (Dods, Butler, 2019). This study analyzes the social, economic, physical, and environmental dynamics of Bodrum, an internationally significant sea-sun-sand destination. International overtourism indicator sets were examined and adapted to the region using data from national tourism statistics. Subsequently, local perceptions were investigated through surveys and in-depth interviews. Combining theoretical and practical approaches, this study aims to contribute to understanding the multifaceted impacts of overtourism. By focusing on systematic issues in tourism and local-level challenges, the study seeks to present an adaptable framework for similar contexts. The findings aim to identify tourism activities' carrying capacity, determine areas requiring limitation or development, and provide strategic inputs for future measures.

Keywords:

overtourism; resident's perceptions; social impacts; sustainable tourism

References:

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T_18 TOURISM (O) / 251**A Study on the Correlation Between Street Space of Tourism-Oriented Traditional Villages and Tourist Behavior Under Different Development Models: A Case Study of Yuanjia Village, Shaanxi Province****Author:** Zejing Zou¹**Co-authors:** Xiaojian Chen¹; Yixin Liu¹; Yuxin Wang¹; Leihao Liu¹¹ Xi'an University of Architecture and Technology**Corresponding Authors:** 2430438308@qq.com, 466674096@qq.com, 362613346@qq.com

The tourism development of traditional villages is not only an important part of driving local economic growth but also a powerful means of historical and cultural preservation and rural revitalization. In recent years, with the acceleration of China's economic development and urbanization, traditional villages have faced the dual challenge of modernization while also seizing unprecedented development opportunities. The tourism development of traditional villages plays a crucial role in cultural heritage preservation. Utilizing visitors' experiences in traditional villages to achieve historical and cultural inheritance under the support of the tourism economy is a vital way to protect and develop tourism-oriented traditional villages. During the development of tourism-oriented traditional villages, different development models have varying impacts on the functional configuration of village streets, alleys, traditional culture, and modern tourism, as well as on the spatial form it can accommodate, which in turn influences tourist behavior. Research from this perspective is a key component in achieving the above objectives. Existing studies mainly focus on the analysis of street and alley spaces and tourist behaviors under a single development model, lacking a comprehensive approach that considers the organizational relationship between traditional culture and modern tourism functions and forms within street and alley spaces under multiple development models in tourism-oriented traditional villages. This study uses Yuanjia Village in Shaanxi Province as a case study, examining street and alley spaces under three development models: village collective independent development, developer independent development, and village-enterprise cooperation development. It explores the correlation between the functional complexity and spatial diversity of street and alley spaces under these three development models and tourists' behavioral characteristics, such as walking speed, dwell time, and interaction modes. Regarding data collection, street and alley space elements are obtained through crawling POI (Point of Interest) data, field surveys, and scoring and categorizing 13 objective indicators of functional complexity and spatial diversity from both traditional cultural and modern tourism perspectives. Behavioral elements are recorded through fixed-location video filming, capturing tourists' walking speed, dwell time, and interaction modes, which contribute to the construction of a comprehensive subjective behavioral indicator. In data analysis, a multiple regression model is established to quantitatively analyze the strength of the relationship between street and alley space elements (traditional culture and modern tourism) and tourist behaviors under different development models. The study then uses the data to conduct a detailed analysis of the causes behind the relationships between street and alley space elements and tourist behavior, revealing the interactive dynamics. This research, using a systematic analysis framework of subject-object elements, fills the gap in the study of the organizational relationship and interactive mechanism between street and alley space and tourist behavior in a tourism-oriented traditional village under multiple development models. It further clarifies how the multi-model street and alley spaces of tourism-oriented traditional villages should be organized and coordinated to achieve cultural preservation based on tourism development. Methodologically, this study introduces a combination of video fixed-point filming and POI data crawling, enhancing the comprehensiveness and accuracy of data acquisition and providing a methodological reference for the study of space and behavior in tourism-oriented traditional villages.

Keywords:

Tourist Behavior□Street Space□Cooperative Shareholding System□Development Models□

Yuanjia Village

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T_18 TOURISM (O) / 222

Study on construction of recreation opportunity spectrum in Qinghai Section of Great Wall National Cultural Park

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National cultural Park is the localization practice of large-scale linear heritage protection and utilization in China, and the integration of culture and tourism is an important way to activate the utilization of heritage. With rich heritage, as the Qinghai section of the Great Wall with the highest altitude in the world, it plays an important demonstration role in the integrated development of culture and tourism. However, at present, the integrated development of culture and tourism in the Qinghai section of the Great Wall has some problems, such as incoordination between ecological protection and resource development, mismatch between heritage value and utilization degree, etc. The recreation opportunity spectrum has strong applicability to balancing ecology and resource protection and utilization. Therefore, according to the current characteristics of the ecological and cultural coupling heritage of the Great Wall National Cultural Park in Qinghai Province, this paper, from the perspective of the recreational experience and needs of the recreational visitors, uses Arc GIS spatial analysis tools, and puts forward a model of constructing the recreational opportunity spectrum based on the ecological and cultural dual dimensions through multivariate statistical methods and factor analysis. The tourism service potential and development level of existing tourism resources are evaluated effectively. The findings are as follows: (1) The ecological and cultural axis recreation opportunity pedigree can be obtained through ecological sensitivity evaluation and cultural development potential evaluation, and the recreation opportunity grade of each region can be determined; (2) The Qinghai Section of the Great Wall National Cultural Park is divided into 9 areas, and 5 types of recreation opportunities are identified; (3) The corresponding construction strategies are proposed according to the characteristics of the recreation opportunity spectrum corresponding to the zoning and the recreation needs of the recreational users. The recreation opportunity spectrum constructed in this study can further guide the cultural and tourism departments to identify priority tourism development and construction areas and rationally formulate and optimize development strategies.

Keywords:

The Great Wall; Recreation opportunity spectrum; Cultural travel

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T_18 TOURISM (0) / 382

Research on the Measurement and Evaluation of the Development Performance of the Red Cultural Tourism Space in Hadapu Town based on AHP and Fuzzy Comprehensive Evaluation Method

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As an important supply strategic position during the Long March of the Chinese Workers' and Peasants' Red Army, Hadapu Town has obvious red cultural characteristics, and its red cultural tourism development has a certain source of customers. However, since the red cultural tourism in the town is still in its early stages, in view of a series of problems such as unreasonable industrial structure, lagging infrastructure, insufficient development funds, single homogeneous tourism products, and insufficient interaction between urban and rural areas, this paper selects the evaluation indicators of the spatial development performance of red cultural tourism in Hadapu Town based on national standards, relevant specifications and expert consultation, and constructs a relevant evaluation system on this basis. By introducing the AHP hierarchical analysis method, the criterion layer, indicator layer and factor layer of Hadapu Town are weighted and calculated to obtain indicators at all levels. At the same time, the fuzzy comprehensive evaluation method is introduced to construct a fuzzy evaluation set. On the basis of single-factor evaluation of secondary indicators, the fuzzy evaluation of the indicator factors at different levels of the development performance of Hadapu Town is carried out layer by layer, and the results of the assignment of indicators at four levels of the development performance of red cultural tourism in Hadapu Town are summarized in combination with the grade assignment. Through the comparative analysis of various indicators, the comprehensive level of the overall development performance of Hadapu Town is finally evaluated and obtained. It is hoped that it will point out the direction for further enhancement and improvement of the red cultural tourism space in Hadapu Town, and at the same time serve as a demonstration to drive the sustained, healthy development and vitality of other towns with red cultural tourism resources, provide more optimized strategies, and explore the establishment of a long-term mechanism for the protection and transformation of red cultural tourism towns.

Keywords:

AHP; Fuzzy Comprehensive Evaluation Method; Hadapu Town; Red Cultural Tourism

T_18 TOURISM (O) / 1608**Cultural Route Perspective: Tourism Value Evaluation and Route Optimization of the Silk Road Heritage Resources (Shaanxi Section)****Author:** Weining Shi¹**Co-author:** Chao Ma¹¹ Xi'an University of Architecture & Technology**Corresponding Authors:** 1591842513@qq.com, 1540358100@qq.com

Spanning thousands of years, the Silk Road is the link between the exchange and integration of Eastern and Western civilization. Xi'an, as the eastern starting point of the Silk Road, has long been a gateway to this historic trade route. The Shaanxi section is home to a vast array of cultural heritages, which not only form the core of Silk Road cultural conservation efforts but also represent significant tourism resources. However, due to the uneven development of the regional economy and transportation, tourists are flocking to popular attractions such as wild goose pagodas and terracotta warriors. In contrast, few people visit niche historical sites such as Xingjiao Temple and Binxian Dafo Temple, which damages the integrity of the Silk Road cultural route. Starting from the integrity of cultural routes, this study combs the relationship between the existing heritage resources and the Silk Road, and excavates 86 potential heritages. Using literature research and analytic hierarchy process, the tourism value evaluation model of heritage resources in the Silk Road (Shaanxi section) was constructed. The historical value, cultural connotation, tourist experience and other dimensions were comprehensively considered, and the value ranking of each heritage tourism was quantitatively analyzed. Based on the evaluation results, this study further optimizes the existing tourist routes. The goal is to enhance the overall tourism experience for visitors and improve the coherence of the Silk Road cultural routes. This research provides a valuable reference for the tourism planning of other cultural routes.

Keywords:

Cultural routes; Silk Road; Heritage Resources; Tourism value evaluation

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T_18 TOURISM (O) / 507**Constructing tourism corridors in Xi'an based on tourism footprint and minimum resistance model**

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The concept of a heritage corridor represents a novel approach to the conservation and development of heritage assets. This approach has garnered increasing attention on the international stage in recent years; however, it remains in its infancy within the Chinese context. The majority of traditional studies on heritage corridor routing have been initiated from an environmental perspective, with a focus on analysing material spatial conditions, often disregarding the subjective perceptions of users. The city of Xi'an, located in the hinterland of Weihe Plain in the middle reaches of the Yellow River, is surrounded by mountains and rivers, and is a key area through which the ancient Silk Road passed, attracting a large number of domestic and foreign tourists every year. This paper takes the cultural heritage tourist sites in Xi'an as the research object, borrows the MCR model for constructing heritage corridors and ArcGIS technology, analyses the digital footprints of tourists, incorporates the tourists' preference for spatial perception into the route construction process, and combines the results of suitability evaluation and co-occurrence analysis with the corridors' hierarchical classifications, and finally generates a '3+5' tourism corridors in Xi'an. The study is structured in three sections. Firstly, factors related to the comprehensive environment of towns and cities are selected, and a comprehensive resistance surface of urban construction is constructed and suitability zones are generated. Secondly, the digital footprints of tourists in Xi'an city are analysed through co-occurrence analysis, popular cultural heritage tourist spots are selected, and preliminary routes are generated accordingly. Thirdly, tourism corridors are generated based on the suitability zones and the analysis of the characteristics of the co-occurrence features in a graded classification. The objective of this study is to establish a cultural heritage display network that is founded upon the built environment of towns and the subjective choices of tourists. In addition, the study will explore new ways of protecting and utilising cultural heritage in the context of culture and tourism.

Keywords:

tourism footprint; tourism corridor; co-word analysis; Xi'an heritage tourism

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Research on the Correlation Between Tourists' Facial Emotion Perception and Street Spatial Elements Through Deep Learning: A Case Study of Tourist-Oriented Traditional Villages in China

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Chinese traditional villages serve as crucial carriers for rural revitalization and cultural heritage preservation, with their tourism-driven revitalization emerging as a key approach to achieving regional sustainable development and safeguarding historical culture. The morphology and organization of street spaces in these villages not only embody rich regional cultural characteristics but also significantly influence tourists' emotional perceptions and behavioral patterns. Emotional perception, as an important metric for evaluating the spatial and cultural characteristics of villages and tourism experiences, holds great significance for optimizing the spatial design of traditional villages. However, existing studies primarily focus on static descriptions of spatial forms, overlooking the dynamic impacts of spatial elements on tourists' emotions. Furthermore, traditional methods such as surveys and interviews are often subjective, time-consuming, and inadequate for capturing the distribution of emotions and behaviors in real-world scenarios. To address these gaps, this study introduces deep learning techniques to construct a quantitative evaluation system for tourists' emotional perceptions, exploring the correlation mechanisms between street spatial elements and tourists' emotional preferences in tourism-oriented traditional villages. A representative tourism-oriented traditional village was selected as the study area. Images of tourists' facial expressions were captured at designated points across different streets in the village. These images were combined with a manually labeled dataset for emotion and age classification to train and optimize the YOLOv5 deep learning model. During data processing, techniques such as RGB value adjustment, image flipping, and augmentation were applied, achieving an accuracy of 0.81 on the validation dataset, thereby ensuring the precision and robustness of emotion recognition. The optimized model accurately identified four types of emotions (smile, surprise, calm, and negative) and three age groups (elderly, middle-aged, and young) among tourists, subsequently generating spatial distribution maps of emotional and age-based preferences. Using the spatial distribution data of emotions, 13 physical spatial elements related to street organization, morphology, and interface were selected for multiple regression analysis. The results indicate that street spatial separation is the most significant factor influencing tourists' emotions, with a regression coefficient of 0.184, identifying it as a critical determinant of positive emotional perception. Additionally, elements such as water systems, façade smoothness, and commercial diversity also significantly enhanced tourists' emotional perceptions. This study identified five key street elements that positively impact tourists' emotional experiences and proposed specific recommendations for optimizing street space design. These findings provide scientific guidance for enhancing tourism experiences and promoting the sustainable development of traditional villages. By innovatively applying deep learning techniques to the study of emotional perceptions in traditional villages, this research overcomes the subjectivity and limitations of traditional methods. It enriches the theoretical and practical understanding of the regional spatial characteristics of village streets, offering scientific pathways and novel methodological support for the integrated development of cultural tourism and rural revitalization.

Keywords:

Facial expression perception; Deep learning; Alley space; Tourist Emotions;

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Research on the Construction of City Walk Tourism Routes from the Perspective of Cultural Heritage Conservation: A Case Study of Beiyuanmen Historic and Cultural District in Xi'an

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The immersive tourism model represented by City Walk is reshaping the spatial narrative logic of historic districts. While this pedestrian-centric spatial practice enhances visitors' deep perception of historical layering in urban spaces, it also risks homogenizing commercial formats and fragmenting the historical-cultural environment. In high-density, multi-ethnic historic districts like Xi'an's Beiyuanmen, the spatial organization of tourism routes faces multifaceted contradictions: the negative correlation between cultural heritage display intensity and conservation status, spatial conflicts between tourists and residents' daily lives, and the misalignment of linear tourism routes with the district's "courtyard-alley-market" spatial morphology. Addressing these challenges necessitates a City Walk tourism route system that balances cultural heritage conservation with tourism development. Taking Beiyuanmen as a case study, this research employs space syntax analysis to deconstruct spatial morphological characteristics, identifies cultural heritage perception gaps through kernel density hotspot detection of heritage distribution and geotagged social media data, and constructs a supply-demand-balanced cultural heritage display route by integrating GIS-based spatial accessibility simulations with tourist behavior preference mining via social media semantic analysis. Findings reveal that City Walk routes in historic districts must prioritize balancing heritage display with vulnerability protection to establish a resilient spatial foundation for cultural conservation. By organizing a main cultural tourism route alongside community-integrated micro-circulation paths rooted in the "courtyard-alley-market" spatial hierarchy, this study proposes a dual-loop City Walk route system. The research ultimately develops a heritage conservation-oriented route construction methodology, forming a new paradigm that harmonizes "heritage conservation, tourist behavior matching, and urban form adaptation." This framework aims to provide replicable strategies for revitalizing cultural heritage in historic districts, enhance tourists' recognition of heritage values, and promote sustainable cultural preservation.

Keywords:

cultural heritage conservation; historic districts; City Walk; tourism route