

Which shape fits best?

Designing the organizational form of local government procurement

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Journal of Purchasing and Supply Management
Volume 25, Issue 3, June 2019, Article number 100504

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Abstract

The way that public procurement activities are organized has an impact on the performance of public institutions. By reviewing the literature on public procurement organization dimensions this study offers a conceptual framework for public procurement organizational design, distinguishing between the macro, micro and process level dimensions. The framework is tested across the procurement departments of 15 local governments in Wales and Italy. We identify six alternative organizational configurations, differing in their level of centralization and their procurement status within the institution. Their suitability and potential for redesign depend on several internal and external contextual factors (goals,

government decision, regulation, geographical environment) in line with the contingency view of organizational design.

Keywords: Public Procurement; Organizational Design; Municipality

1. Introduction

According to OECD data, public procurement represents a substantial proportion of government expenditure (spanning from 20% to 45% in 2015) and national GDP (from 6% to 21% in 2015), giving procurement decisions a strategic role in modern economies, rather than the traditional and operational perspective of “spending public money on goods and services” (OECD, 2017). Even though public procurement has received growing academic attention (Thai 2015) there is still a significant lack of research on several aspects of public procurement when compared to the overwhelming proportion of purchasing and supply studies in the private sector (Verma et al. 2005; Tadelis, 2012). Surprisingly, this is particularly true concerning the organizational aspects of public procurement.

Private sector research shows that the way procurement departments are organized can have an effect on overall firm performance (e.g. Foerstl et al., 2013; Ates et al., 2017) and that among the influential characteristics of procurement departments are the formal and informal recognition of the procurement function within the organization (Carter and Narasimhan 1996; Tchokogué et al., 2017), the degree of centralization of decision-making (Johnson and Leenders 2004; Bals and Turkulainen, 2017), the formalization of procurement tasks and procedures (Malatesta and Smith 2011; Pemer and Skjølvik, 2016), the specialization of procurement tasks (Joyce 2006; Glock and Broens, 2013), the automation of procurement (Quintens et al. 2006; Nurmandi and Kim, 2015), and the maturity level of the procurement department (Carter et al., 2000; Bemelmans et al., 2013). Even though the way that procurement is organized is also relevant for the public sector (e.g. Christensen et al., 2007), such procurement aspects have received little attention in a public context. Dimitri et al. (2006) put forward the idea that the way procurement is

organized clearly affects the performance of public institutions. Recently, a few studies have tried to explore how procurement department characteristics can contribute to performance (Glock and Broens, 2013; Tchackenko et al., 2017). Public organizations need to design their procurement departments in a way that is consistent with their goals, including commercial, socio-economic, and regulatory targets (Patrucco et al., 2017). The effective design of procurement departments and flexibility in responding to external characteristics (e.g. regulatory changes) can impact on procurement performance, contributing in turn to “public value creation” (Benington 2009), the ultimate goal of public sector organizations.

The present study aims to contribute to this area of public procurement research by answering the following research question:

- *What are the possible organizational forms for local government public procurement departments and what are the key characteristics that affect procurement organisation?*

This research makes three contributions to the public management, and more specifically, to the public procurement fields. First, we propose a conceptual model for public procurement organizational dimensions and explore the linkage between organizational design and public procurement performance, which is increasingly important in the public value era. Second, to the best of our knowledge, no previous study has focused in depth on the formalization of organizational archetypes of public procurement departments, despite the fact that this issue has been explored in the private sector and found to be an important

factor in procurement improvement. Third, we provide practical recommendations for policy makers and senior public procurement practitioners, providing archetypes to assist in configuring and redesigning procurement departments in response to evolving contextual factors.

2. Theoretical underpinnings: Contingency theory

Many authors in the public management field have explored how public organizations, constrained by political and institutional goals, always adapt their strategy and try to develop more effective managerial approaches, organizational models and tools (McAdam et al. 2011; Rubery et al. 2013; Iacovino et al., 2017), in this way creating a path towards continuous improvement. This is particularly true for public procurement, where government and politicians are pushing institutions at all levels to deliver efficiency and “value for money” in the use of public funds, whilst adhering to EU requirements and to national laws and policies (Coulson, 2008; Afonso et al. 2010). Public procurement needs to meet various objectives within a changing context (e.g. commercial, regulatory compliance and socio-economic; Erridge and McIlroy 2002; Patrucco et al., 2017), and the decision of how to organize the procurement department constitutes a unique lever to achieve these objectives. Shaping suitable procurement configurations may be a way to deliver improved organizational performance and meet such varying goals (Parker and Bradley, 2000; Chestner and Radnor, 2012).

Public procurement organizational decisions need to be periodically reviewed, due in part to the political, regulatory and economic contextual changes that affect public institutions every year. In addition, each public organization may set different goals and priorities

within the overarching policy framework (Hood, 1991; Fernandez and Rainey, 2006; De Vries et al., 2016). Public procurement organizations may face a degree of contextual regulatory and policy change to which many private procurement organizations are not exposed.

For this reason, contingency theory seems an appropriate theoretical lens to start from in order to discuss public procurement organizational dimensions, which should be designed both to accommodate contextual characteristics as well as institutional and procurement - specific goals (Thai 2009; Boyne and Walker, 2010). Contingency theory suggests that an organization's structure should reflect its strategy and that organizations perform better when their structures are properly aligned with the context within which they operate (Lawrence and Lorsch 1967; Ginsberg and Venkatraman, 1985). Organizational design characteristics need to match both the external context and the organization's strategy in order to ensure improvements in organizational performance (Mintzberg 1980; Pennings 1992). Contingency theory has been adopted as a lens to explore issues in operations management (e.g. Sousa and Voss, 2008), in studies concerning the organization of municipalities (e.g. Andrews and Boyne, 2012), and in studies linking purchasing and supply practices with performance (e.g. Flynn et al. 2010; Spina et al., 2016), and will be adopted as the theoretical underpinnings for defining how to shape procurement organization in the public context.

2.1 Literature review of the dimensions of procurement department organization

Comparatively little attention has been paid to public procurement organization, especially at the local government level (McManus 1991; Murray 2001; 2011), with only a few

studies explicitly addressing how procurement departments should be organized (e.g. Thai and Piga 2007; Kamann, 2007; Glock and Broens 2013). Thus, private procurement studies are also reviewed below, partly due to the paucity of public procurement studies on organizational design, and partly because the elevation of the procurement department to a strategic value adding-function has been noted in numerous private sector studies (e.g., Carter and Narasimhan 1996; Carr and Pearson 2002; Gonzalez-Benito 2007; Luzzini and Ronchi, 2016; Tchackenko et al., 2017). The context for procurement in the private sector differs considerably from procurement in public institutions (Thai, 2008; Knight et al., 2012). However, the key choices related to procurement organizational design seem to be similar across the public and private sectors (Johnson et al., 2006; Arlbjørn and Freytag, 2012).

Recently, Glock and Hochrein (2011) and Schneider and Wallenburg (2013) conducted extensive reviews of the literature on purchasing organization and design. Combining their findings, we can conclude that research on procurement organization can be divided into three main streams (i) works addressing macro-organizational aspects i.e. the role the procurement department plays within the organization; (ii) works addressing micro – organizational aspects i.e. decisions and characteristics related to procurement organization; (iii) works combining both previous aspects (although not necessarily using the macro and micro organizational terminology) and which propose organizational configurations for the procurement department.

In reviewing the literature in the public procurement field we decided to adopt this classification and add a fourth dimension, the process-related aspects of procurement design. We needed to add this process dimension because in the public sector the

procurement process has the additional constraint of strict internal and external policy and regulation (Decarolis and Giorgiantonio, 2015) so the procurement process is an essential part of the overall organizational design (Rendon, 2008).

2.1.1 Macro-organizational design aspects

The first group of studies acknowledge the fact that procurement's contribution to value creation depends upon the status of the procurement department within the organization (Schneider and Wallenburg, 2013; Luzzini and Ronchi, 2016; Ates et al., 2017). There is general consensus that increasing the automation (Caniato et al. 2010) and outsourcing (Brewer et al. 2014; Bals and Turkulainen, 2017) of procurement activities leads to a reconfiguration of procurement roles and responsibilities, which are becoming less operational and more strategic. However, evidence about the procurement department's position in the organizational hierarchy and its status relative to other functions is still equivocal (Harland et al. 2007). Most studies that discuss the procurement role within an organization suggest that the status of the procurement department can have a positive impact on the implementation of procurement practices and resulting performance (e.g. Carr and Pearson 2002; Cousins et al. 2006). If an organization were in the position to establish a new procurement department its status could be steered by giving it a strategic position within the organization (Johnson et al., 2014). The procurement status is reflected in its position on the organizational chart, its interaction with other functions, its perception by top management, its involvement in the strategic planning process and the level of procurement in the firm (Pearson et al. 1996; Johnson et al. 2006; Jia et al., 2014). Such procurement status characteristics are likely to be fundamental to a procurement

department's organizational configuration (Moody 2001; Chen et al. 2004; Cousins et al. 2006; Bals and Turkulainen, 2017).

2.1.2 Micro-organizational design aspects

The second group of studies focuses on the main structural elements of procurement organization. The most studied variable is the level of procurement centralization – i.e. the degree to which authority, responsibility and power are concentrated within an organization or buying unit (Johnston and Bonoma 1981). Procurement activities may be centralized in one organizational unit, decentralized by being dispersed across multiple units, or have a hybrid design with a mixture of both centralization and decentralization by establishing meta-structures and mechanisms (Johnson and Leenders 2006; Trautmann et al. 2009; Luzzini et al., 2014; Johnson et al., 2014; Bals and Turkulainen, 2017).

Private sector studies have shown that the degree of centralization depends on how procurement resources and competencies are organized and structured within the firm (e.g. Carter et al. 2000). Procurement resources can be organized according to product line divisions or geographic area (e.g. Giunipero and Monczka 1997), procurement categories (e.g. Jia et al., 2014) or procurement sub-processes such as strategic and tactical tasks (Monczka et al. 2015).

Several empirical studies in the public procurement domain aim to explore the diffusion of procurement centralization in public institutions and the related benefits (McCue and Pitzer 2000; Giannakis and Wang 2000; Karjalainen, 2011; Glock and Broens, 2013; Wang and Li, 2014), while others compare procurement organization in public and private institutions (Laios and Xideas 1994; Johnson et al. 2006).

Other micro procurement organization characteristics have also been identified for both private and public sector , such as resources specialization (i.e. the division of labour within the department; e.g. Arnold 1999; Kamann 2007) and cross-functional integration (i.e. the extent of integration of procurement resources with other departments; e.g. Schiele 2005). Procurement skills and competencies are also recognized as having an impact on the organization of procurement (Callender and McGuire 2004; Tassabehji and Moorhouse, 2008; Kern et al., 2011; Mc Kevit et al., 2012).

2.1.3 Combined Macro and Micro-organizational design aspects

The third group of studies suggest possible configurations for organizing procurement departments, by combining some of the various macro and micro aspects discussed above. In private sector studies, Cavinato (1992) describes procurement organizations as playing a supporting role for logistics, with reference to seven basic organizational models which vary according to logistics objectives. Arnold (1999) proposes three organizational models for effective global sourcing: central purchasing (suitable for organisations with low international sourcing activities and high degrees of centralisation), coordination (suitable for centralized and internationally active companies) and outsourcing (suitable for highly decentralized and internationally oriented companies). Cousins et al. (2006) propose a cross - sector taxonomy of procurement department organization, which identifies four configurations (strategic, capable, celebrity, and undeveloped), differentiated on supplier and organisational performance outcomes as well as resource characteristics. Hartmann et al. (2008) developed a classification of procurement department organization for global transnational companies, differentiated by the global sourcing strategy, the level of

centralization and the characteristics of the process. Recently, Jia et al. (2014) profile organizational configurations of global procurement departments by differentiating them according to the breadth of activities executed by the department as well as the relevance of procurement for the company.

In public procurement studies a first configuration model for procurement organization was proposed by Farrer (1969), who studied purchasing for defence procurement, by developing two models of alternative sourcing structures (one focused on the requirements of the end user and the other on technical characteristics), with the first performing better. Kamann (2007) uses a stakeholder approach to define four possible archetypes (teams, squeezers, star-satellites and flexibilizers) and their organisational characteristics. Schotanus and Telgen (2007) develop a classification of alternative forms of cooperative purchasing for public institutions by defining five models of cooperative sourcing and characterizing them with respect to the influence their members have on purchase decisions and the number of different group activities performed. Bakker et al. (2008), Schotanus et al. (2011) and Walker et al. (2013) also focus on collaborative procurement organization in public hospitals and municipalities, defining different models of cooperative sourcing and analysing frameworks, life cycles and insights of the proposed organisational forms.

2.1.4 Process-related organizational design aspects

The process-related aspects of organizational configuration concern how activities are executed and organized within a department structure; for public procurement this refers to how *external regulations* and *internal procedures* in the public sector affect how the procurement process is enacted within the different organizational roles/units involved

(Harland et al. 2013; OECD 2013). External regulations include the constraints that public procurement law puts on specific phases of the procurement process, such as supplier selection (e.g. tendering and selection criteria), supplier evaluation (e.g. definition of KPIs and not being able to evaluate suppliers based on past performance) and contract management (Flynn and Davis, 2016). These should not vary across public organizations as they are mandatory and enshrined in EU procurement law.

Setting aside mandatory and unvarying external regulations, in this study we explore the variance in internal procurement procedures across local authorities. These process-related aspects of procurement are observed in the private sector, and we explore them in our public sector context: the level of formalization (i.e. the degree to which an organization relies on rules and procedures to orient resources; e.g. Wood and Ellis 2005), the level of specialization and distribution of responsibilities (i.e. how activities are segregated and executed into unique elements; e.g. Johnson and Leenders 2004), the span of control (i.e. how many activities plan to actively involve procurement people; Nair et al., 2015) and the degree of decision-making authority (i.e. how much activities are driven by the procurement department; Erridge et al., 2001).

Drawing on the literature reviewed in the section above, the main classifications and characteristics of procurement organization are presented in Table 1.

Table 1: Procurement department characteristics from private and public PSM literature

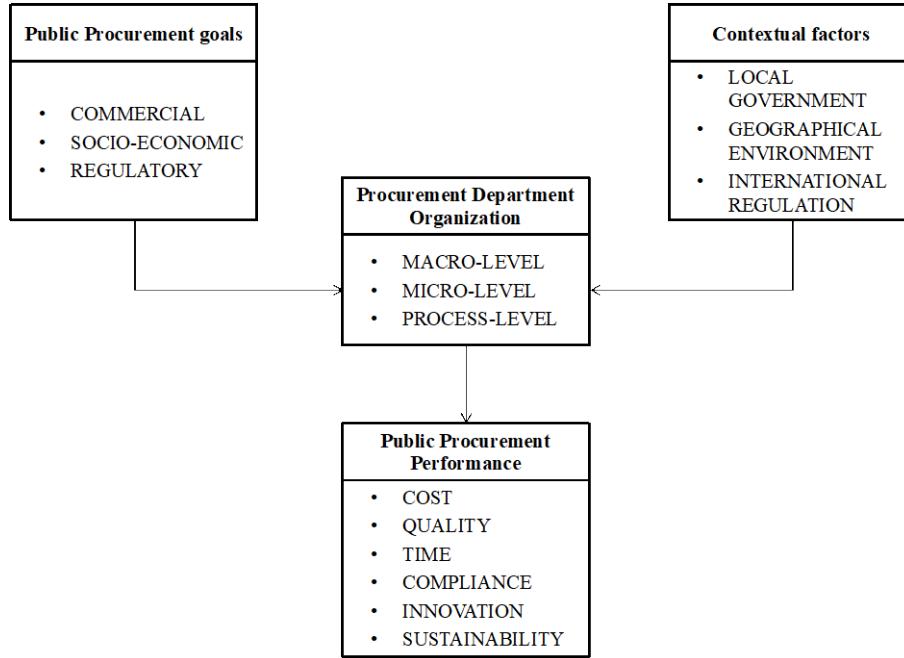
Classification	Characteristics	Sector	Authors
Macro aspects - Role of the procurement department in the organisation	<ul style="list-style-type: none"> • Status and recognition • Reporting level • Value adding 	Private	Brewer et al (2014) Carter and Narasimhan (1996) Cousins et al (2006) Johnson and Leenders (2009) Johnson et al. (2014) Pearson et al. (1996) Pooley and Dunn (1994) Zheng et al (2007)
Micro aspects - Procurement organisation		Private	Arnold (1999)

characteristics	<ul style="list-style-type: none"> • Level of centralization • Grouping criteria • Procurement skills and resource specialization • Internal cross – functional integration 		Bals and Turkulainen (2017) Callender and McGuire (2007) Dawes et al. (1992) Faes et al. (2000) Johnson and Leenders (2001; 2004, 2006; 2009) Johnson et al. (2006; 2014) Kern et al., (2011) Luzzini and Ronchi (2011) Malatesta and Smith (2011) Quintens et al. (2006) Rozemeijer (2000) Schiele (2005) Trautmann et al. (2009) Trent (2004)
		Public	Glock and Broens (2013) Johnson et al (2003) Kamann (2007) Karjalainen (2011) McCue and Pitzer (2000) Wang and Li (2014)
Combined Macro and Micro-organizational design aspects	<ul style="list-style-type: none"> • Combination of procurement organizational characteristics • Contingencies and model suitability 	Private	Arnold (1999) Cavinato (1992) Cousins et al. (2006) Jia et al. (2014) Hartmann et al. (2008)
		Public	Farrer (1970); Kamann (2007); Schotanus and Telgen (2007) Bakker et al. (2008) Schotanus et al. (2011) Walker et al. (2013)
Process aspects – processes executed by procurement departments	<ul style="list-style-type: none"> • Level of activity formalisation • Level of activity specialization • Span of control • Level of authority 	Private	Johnson and Leenders (2004) Nair et al. (2015) Wood and Ellis (2005)
		Public	Erridge et al. (2001) Harland et al. (2013)

3. A conceptual framework of procurement department organization

We have reflected on the specific contextual factors, goals, and performance issues related to public procurement described in the theoretical underpinnings section above. We also draw on the procurement organisation classifications and characteristics detailed in *Table 1*. We adopt a contingency theory approach to public procurement organizational design, assuming that differing factors will affect the most appropriate configuration. We propose the following conceptual model of organizational design in public procurement.

Figure 1: Conceptual framework of factors influencing the organization of procurement departments



Describing the different elements of the conceptual framework in more detail, we first of all propose two types of factors that influence the organizational design of procurement departments in public institutions. In line with the contingency perspective, the design is first affected by internal factors, i.e. **(1) public procurement goals**, which include objectives that are regulatory (i.e. compliance with internal policy, external compliance with particular regulations), commercial (i.e. best price at the best quality, cost reductions and savings in given categories), and socio-economic (i.e. social development, economic development, environmental protection) (Erridge and McIlroy 2002; Patrucco et al., 2017). Such goals can be considered internal drivers within public sector organizations and can lead to different possible procurement configurations (Kamann 2007).

Procurement organization is also influenced by **(2) contextual factors** and environmental characteristics related to the local governmental context (i.e. governmental organizational

structure and characteristics), the geographical environment (i.e. characteristics of the region), and international regulation (Thai 2008; Trautman et al., 2009).

Public procurement goals and contextual factors influence the appropriate design of **(3) procurement department organization**; dimensions include micro, macro and process level.

Finally, the effectiveness of the organization can be measured through evaluation of **(4) public procurement performance**. Adopting a model provided by Patrucco et al. (2015), we conceptualize performance as a multidimensional construct that integrates the dimensions of cost, quality, time, innovation, compliance, and sustainability.

4. Methodology

Because of the exploratory research question being addressed (Yin, 2009), the lack of previous research on public procurement design and the type of problem being investigated (Stake, 2013), a case-based research method was considered the most suitable; case studies may help to develop new theories and have high validity with practitioners (Voss et al. 2002), and they have been used often when investigating public management (e.g. Sanderson, 2009; Knight et al., 2012).

4.1 Case selection

First, a decision was made regarding the public institutions to be included in the research. Considering the unit of analysis used in previous works (e.g. Martin et al., 2011; Buxton and Radnor, 2012; Haveri, 2015), we decided to focus on local governments. These were a convenient choice in terms of sample size, heterogeneity in expenditure amounts, the possibility of making comparisons with other countries, and potential relevance of results.

Municipalities constitute the lowest decisional node for government procurement and they have independence when it comes to deciding how to provide or commission a range of goods and services to the public, including education, social care, environmental services and planning. In order to enable theoretical replication and extend the research generalizability, we adopted a convenience sampling approach and identified municipalities in Italy and the UK, where we could more easily negotiate access to municipalities and respondents.

Italy has 7,978 municipalities, with spend for goods, services and capital expenditure of 40 billion €(ISTAT, 2016). A minimum size and spend threshold was required to ensure the existence of a structured procurement department of some form and we therefore decided to target only medium, big and very big municipalities (i.e. with more than 20,000 citizens and yearly spend amounts above 22 million € according to the Italian ISTAT classification). This reduced the potential numbers to 520 local governments. Within these, we selected those municipalities conveniently accessible within the authors' geographical reach and with which contacts had already been established; twenty-three municipalities were contacted and asked to participate in the research project, and eight accepted.

In the UK we focused on the Welsh region, examining the twenty-two “county councils” that were formed after the 1996 reform, with spend for goods, services and capital acquisition of approximately 4.3 million £ (Welsh Government Statistics 2016). A workshop was initially organized with public procurement representatives from all 22 councils to identify councils that could give us an in-depth understanding of local governments’ procurement organizations. Furthermore, we took into account relevant statistical characteristics such as population density, level of spend, and past procurement

department rating. In the end, seven councils were invited to participate as case studies in the research; these seven were chosen both for their characteristics and their willingness to provide access and participate in the research, thus guaranteeing sample heterogeneity.

Table 2 summarizes the characteristics of the 15 municipalities and 22 interviewees included in the analysis.

Table 2: Case study descriptions

	Name	Citizens (approx.)	Amount of spending (approx.)	Number of Procurement Department FTEs	Interviewees	Job title
Italian sample	ICLN	60,000	45 M €	5 FTE	2	Head of Procurement, Procurement Officer
	ICLC	48,000	40 M €	6 FTE	1	Head of Procurement
	IHCB	72,000	45 M €	10 FTE	2	Senior Procurement Manager, Procurement Officer
	IHCM	75,000	60 M €	15 FTE	1	Head of Procurement
	IDSG	35,000	48 M €	8 FTE	1	Head of Procurement
	IDPV	65,000	50 M €	2 FTE	2	Head of Procurement, Procurement Officer
	IDBS	550,000	240 M €	20 FTE	2	Head of Procurement, Technical officer (Environment Directorate)
	IDMZ	125,000	140 M €	4 FTE	1	Head of Procurement
Welsh sample	WCCY	180,000	£150 M	18 FTE	2	Head of Procurement, Category manager
	WCRH	250,000	£180 M	24 FTE	2	Head of Procurement, Category manager
	WCNP	150,000	£200 M	9 FTE	2	Principle Procurement officer, Senior Procurement officer
	WHCF	350,000	£300 M	18 FTE	1	Head of Procurement
	WHSN	250,000	£200 M	20 FTE	1	Head of Procurement
	WDCM	200,000	£180 M	7 FTE	1	Senior Procurement officer

	WDVG	120,000	£100 M	2 FTE	1	Procurement policy officer
Total	15 cases				22 interviewees	

4.2 Interview protocol

The interview protocol was designed by drawing on the literature review of previous public and private procurement studies investigating the organizational characteristics of procurement departments, covering all the relevant sections of the research framework [*see table A1 in appendix*].

Some interviews were recorded with permission while for others permission was not granted due to confidentiality agreements and we took notes during the meetings. In addition, we consulted publicly available data about each municipality as well as a range of internal documents that interviewees were able to share. Interviews were conducted for a minimum of 0.5 days per case and the interviewers' field notes were used as a starting point for data analysis. In most cases, two employees were interviewed. Most were heads of the procurement department;. However, a senior procurement officer and a category manager with a clear view of procurement organization and processes were also interviewed.

5. Qualitative case analysis

We adopted a two-stage approach to data analysis, initially providing qualitative descriptions of the cases, and subsequently undertaking a more-fine grained quantitative analysis, drawing on the elements of our conceptual model.

Most research on organizational design suggests that the level of centralization is the

driving variable of procurement configuration (e.g. Arnold, 1999; Glock and Hockrein, 2011; Johnson et al., 2014; Schneider and Wallenburg, 2013; Wang and Li, 2014). For our initial qualitative description of the cases we chose to start by focusing specifically on the level of centralisation, and our choice was affirmed as it became clear that this was the predominant differentiator of the different organisational forms we observed in the case data. We also cover procurement goals, context and performance in the case descriptions below.

5.1 Decentralized case examples

WDVG, IDPV and IDMZ cases adopt a decentralized approach to procurement management. The two people operating in the WDVG procurement department act as controllers of external operational activities. They do not have any categories under their responsibility and simply support and monitor the execution of operational activities of technical offices. Especially for technical and complex spend, continuous interactions and verification by the procurement department is needed.

“They have many doubts about what to buy and how to buy, and they ask us to teach them (...) we have to follow them in each step, every time repeating the same things”. (Procurement policy officer, WDVG)

Some knowledge management tools have been proposed (e.g. procedure and policy manual, bid model, contract framework) but the office personnel still rely on the procurement department.

“They don’t want to waste so much time on procurement activities”. (Procurement policy officer, WDVG)

No strategic plans or objectives are set for categories (except for the overall budget expenditures of single offices) and dissatisfaction exists on both sides: procurement professionals are frustrated by their role (without any decision-making power), while office staff are vexed by the need to execute activities that are not part of their core roles and for which they feel some lack of competence. This situation has a negative effect on procurement performance, which is certainly aligned in terms of compliance but takes a long time.

“The time required for sourcing goods and services will be much lower if we directly manage them!”. (Procurement policy officer, WDVG)

The absence of long-term strategic plans limits the possibility of identifying potential improvements on the cost and socio-economic sides, with targets barely met. The situation is slightly better for IDPV and IDMZ, where the procurement departments are given the responsibility to directly execute operational activities for some non-strategic and non-technical categories (e.g. cleaning services and materials, some ICT products, office services and materials), supervising and supporting Offices in the remaining operational activities (especially in using e-procurement solutions, such as supplier repositories, central institution portals, and publication of tender opportunities and bid collection).

“We can’t decide anything but, without us, procurement activities will be stuck”.
(Procurement Officer, IDPV)

WDCM, IDSG and IDBS are also examples of decentralized procurement management, although with some differences. In the WDCM council , the Department is significantly involved in all the decisions concerning procurement (e.g. requirement definition, planning, supplier scouting) with a representative sitting at board meetings. Contacts with the

stakeholders are made on a regular basis to ensure reductions in cost and improvements in service delivery.

“Procurement departments act as points of connection in defining the procurement strategy of each Directorate”. (Senior Procurement Officer, WDCM)

Thus, the procurement department is perceived as a key figure in optimizing strategic procurement plans, and it is asked to organize formal development and training programs to teach staff how to execute operational activities efficiently and in compliance with applicable regulations. Additionally, knowledge management tools and best practice sharing are good ways to support individual Offices. In these ways, most of the procurement professionals’ time is not dedicated to executing (or supporting execution of) operational activities but is centred on strategic procurement and training, creating opportunities for performance improvements (with socioeconomic indicators and cost measures usually above target).

“Even though an integrated procurement strategy doesn’t exist, individual Directorates still prevail.” (Senior Procurement Officer, WDCM)

IDSG and IDBS, instead, take this integration one step further than WDCM, whereby the procurement departments’ few personnel are not only consulted and involved in the procurement decisions of each Office but are empowered to manage some common non-strategic goods and services (e.g. office equipment, some ICT products and services).

“It is a good choice because we have decisional authority in a small part of spending, but we can help in making strategic decisions by showing results in the categories under our responsibility”. (Head of Procurement, IDBS)

This empowerment has a positive impact on procurement performance for these non-

strategic categories (especially on the cost and quality sides), with the possibility of positively orienting procurement performance in beyond-the-scope categories.

5.2 Hybrid case examples

WHCF and IHCB are examples of a hybrid approach to procurement management, given that purchasing of technical and special goods and services (e.g. construction and special projects, social services) is under the control of related Offices, while non-technical spend is the responsibility of the procurement department for both strategic and operational aspects.

The WHCF council, which is in a stage of organizational evolution, although it implements a category management approach, the procurement department is not yet mature to possess the entire spectrum of competencies needed to independently manage all the spend categories. In particular, there is a lack of technical knowledge for social care services. For this reason, the Chief Executive allocated management of social care supply to the “Social Care, Health and Housing” Office. This organization results in a duplication of procurement activities within the same administration, with potential misalignments, especially at the strategy level.

“We buy according to our strategy and procedures, they buy setting their own rules; (...) there is comparison, but it is not planned, and no one asks us to teach them how to buy (and we don’t want to)”. (Head of Procurement, WHCF)

Furthermore, lack of communication within the administration on centrally managed categories may lead to undesired behaviour. Negative impacts are evident in overall procurement performance: the WHCF procurement department performs on target on cost,

quality, and sustainability measures (some problems exist regarding the process time dimensions), while savings on social care services (sole performance measured) are minimal.

“Sometimes individual departments start the procurement process because they think it’s their own responsibility (...) once we realize it we try to stop them if it’s not too late”. (Head of Procurement, WHCF)

The case of the IHCB municipality is similar to WHCF, with differences in the number and types of categories beyond the scope of the procurement department (i.e. technical consulting services; highway, environmental and engineering products; works and buildings). Although category management is not fully implemented, a lack of integration remains between procurement activities executed by the procurement department and activities that are executed for categories beyond the scope of the procurement department. An attempt was made to share some best practices in requirements standardization by using integrated ICT solutions, though the benefits were minimal. Efficiency and savings targets in categories beyond the scope of the procurement department are never reached.

“Even though we really don’t know how badly other Departments buy...”.

(Procurement Officer, IHCB)

In both cases however, customer satisfaction surveys show extensive recognition of the procurement departments’ ability to provide required goods and services.

WHCF and IHCM are also examples of a hybrid approach, where responsibility for purchasing categories is split between the procurement department and other Offices, but integration solutions and mechanisms are in place to ensure strategic and operational alignment.

In WHCF, the procurement department directly manages non-technical categories (i.e. transport services, safety and security services, office equipment and services, building materials and services) using a category management approach. Category managers (required to have managerial and technical backgrounds) are in charge of developing aligned category plans and directing their category teams to put them into practice. Technical spend (i.e. building and engineering works) is under the responsibility of individual Offices. To ensure visibility in external activities the procurement department puts its staff “on the Offices’ site” to support them in executing operational activities. Regular meetings are held between category managers and the Office responsible in order to ensure strategic level alignment. As for performance, although the WHCF Council has some disadvantages in terms of process time (especially for categories beyond the scope of procurement), efficiency (i.e. savings) effectiveness (i.e. customer satisfaction) and socioeconomic indicators are all over target.

“Procurement efficiency and effectiveness are the basis to give citizens the desired level of service...human resources are the centre of procurement activities and performance”. (Head of Procurement, WHCF)

In the municipality of IHCM the procurement department is independent in managing common and non-technical categories, while supporting and integrating with technical offices through knowledge management systems.

“We exploit tools, best practices and coordination on a regular basis in order to ensure alignment on both sides”. (Head of Procurement, IHCM)

For technical spend (e.g. specific adults’ and children’s services, sports equipment maintenance, geotechnical and geology services) policies and procedures are shared on an

intranet, a common database of past contracts has been created, and monthly coordination meetings are held to discuss problems and updates on changes in regulations or mandatory tools to be used (e.g. e-procurement transactions, portals, collaborative agreements contracted by national/regional institutions). Performance is on target but is not as good as that of the “harder” Hub configuration of the WHCF case (savings in categories beyond the scope of the procurement department are obtained but never exceed the target).

5.3 Centralized case examples

WWCCY, WCRH, ICLN, WCNT and ICLC are examples of centralized procurement management, with some notable differences. With a massive structure composed of 18 staff (reorganized in 2008), the Central Procurement Unit (reporting to the Head of Financial Services) of WCCY manages all the spend of the institution (i.e. social services, people and professional services, construction and special projects, environmental works and services, transport and facilities management, corporate and ICT), and is responsible for both decisional and operational activities. Category management is considered strategic within the procurement department and so is its integration with other Offices. WCCY relies on the strong procurement and technical competencies of its staff.

“This choice was a key point of our reorganisation (...) as procurement competencies were not enough”. (Head of Procurement, WCCY)

Category teams communicate procurement decisions to other Offices on a regular basis, requesting occasional support for specific purchases (e.g. social care).

“Social care has a great impact on overall authority performance (...) it’s better to share decisions in this area”. (Category manager, WCCY)

These contacts are also possible due to an advanced e-procurement solution that facilitates communications within the administration, execution of sourcing and order management activities and strategic analyses. The WCCY procurement department represents a real “*market maker*”, being able to create real value for citizens by choosing and engaging the most cost-efficient sources of supplies. All the performance areas are measured extensively with KPIs (except for innovation) with results confirming a healthy functioning of the structure. Savings by category are obtained on a yearly basis, process functioning is monitored and targeted, and external quality indicators are always defined at a contract level for suppliers and assessed internally through customer satisfaction surveys, while sustainability measures essentially relate to economic development and social dimensions. Procurement organization is similar in WCRH, where the Corporate Procurement Unit is responsible for strategic and operational activities for all the categories. Extensive integration exists and regular contacts are maintained with representatives from other Offices to ensure that procurement decisions are shared, integrated and accepted at all levels.

“We have to raise the visibility and importance of procurement, (...) staff throughout the Council must have an appropriate understanding of procurement procedures and regulations, (...) we have to foster an environment of procurement capability and continuous improvement (...) ensuring that procurement spending is subjected to an appropriate level of professional involvement and influence”.

(Head of Procurement, WCRH)

These features result in wide recognition of the procurement department, able to deliver great performance in the areas of cost savings, quality and customer satisfaction,

compliance and sustainability.

Not all centralization initiatives succeed. For ICLN, despite the responsibility given to the management for the spending of the entire municipality, a lack of technical and specific competencies within the department and an unsuitable organization of resources have generated critical problems such as the need to frequently consult other Offices at different times in the process.

“Category management is just an idea (...) imagine I have to buy road construction services: do I have to consider the characteristics of all the roads in the municipality in the design specifications? Is it enough to consider past bids to define supplier evaluation and choice criteria?”). (Procurement Officer, ICLN)

This need creates confusion within the Department and contributes to undermining its role; its formal authority and status are not recognized or respected, resulting in undesired behaviour, with negative impacts on final performance (e.g. unachieved savings, longer process times, poor compliance with internal procedures).

“It’s not unusual that Directorates act independently in satisfying their needs. I can sometimes accept that unless contracts are already in place...”

(Procurement Officer, ICLN)

Centralization was focused on operational activities in the case of WCNT and ICLC. At WCNT the procurement department is responsible for reviewing required documents, preparing bids, selecting suppliers, awarding contracts and managing orders.

“Our support is required to improve efficiency in executing these activities because we have specific knowledge in regulation, eSolutions and government instruments”.

(Principle Procurement officer, WCNT)

Personnel are specialized by activity and act as “executors”, resulting in frustration as they cannot exploit their competencies and discuss strategic decisions.

“We are forced to interact many times per year and many times for each bid, with all the people managing council social care services; (...) they tell us requirements, preferred suppliers based on past experiences, evaluation criteria to be used, and future needs; (...) once we have collected all the information, we put it into practice”. (Senior Procurement officer, WCNT)

These steps lengthen the duration of the process because interaction mechanisms are not structured and occur reactively. Poor category strategy and long-term procurement plans exist; performance is good on the compliance and sustainability sides but less so on the cost side (savings are rarely obtained).

The municipality of ICLC faces a similar situation with its procurement department dedicated to the execution of operational activities. However, due to the strong emphasis on regulatory goals for procurement, the municipal approach in selecting procurement personnel has privileged legal competencies for ensuring internal and external compliance, which does away with the need for a legal office.

6. Quantitative analysis of procurement department organization characteristics

Having described the different cases and their degree of centralization above, along with various other procurement department characteristics, we proceeded to the next step in our analysis. In order to better structure the data collected during interviews and facilitate cross-case comparisons our next step was to adopt a quantitative coding approach in a

similar vein to previous studies on public procurement (e.g. Walker et al 2013; Patrucco et al., 2017).

A numeric scale from 0 to 100 was adopted for each of the elements of our conceptual framework (Public procurement goals, contextual factors, procurement organization characteristics and performance) and all of them have been divided into sub-dimensions (e.g. for procurement goals we classify goals as commercial, regulatory and socio-economic).

For some characteristics, the scoring was relatively straightforward. For example, for level of centralization the “degree to which spend responsibility is concentrated within a single department” was evaluated as the ratio between the amount of spend centrally managed by the procurement department and the total amount of spend of the authority. For other characteristics a multi-step approach was adopted. To assign the score to public procurement goals for each sub-dimension we considered the number and the nature of the objectives explicitly defined by the authority. This approach was first cross-checked amongst the authors (who are all experienced academics in the public procurement field) but, most importantly, with government experts in Italy and Wales in order to address any inconsistencies.

Table 3 summarizes the case evaluation on each of the characteristics [for more information about the coding approach please see explanation and Table B1 and B2 in the appendix].

Table 3: Quantitative evaluation of the cases included in the analysis (out of a 100-scale)

	Proc urem ent s	Cont extua l	MACRO	MICRO	PROCESS	PERFORM.

			Reporting level	Procurement recognition	Level of centralization	Grouping criteria	Procurement skills	Internal integration	Span of control	Level of authority	Process formalization	PMS structure	PMS results
IDSG	60	1381.5	30	60	25	20	60	70	50	70	80	60	80
IDPV	10	717.3	20	10	25	10	40	20	10	10	10	10	20
IDBS	80	436.4	50	70	15	100	80	60	60	60	70	70	70
IDMZ	20	1081.3	30	20	5	20	70	20	10	10	20	20	30
IHCB	50	612.5	70	60	70	60	60	60	70	70	50	90	60
IHCM	90	762.5	90	90	75	80	90	80	90	90	70	80	80
ICLN	40	720	90	20	100	60	60	30	70	90	70	80	40
ICLC	60	846.8	50	70	100	30	50	60	10	10	60	60	60
WCCY	100	814.6	100	100	95	100	100	60	100	100	70	70	90
WCRH	100	760.7	100	80	90	100	100	90	80	80	80	70	70
WCNP	10	1407.15	30	20	90	20	50	70	40	10	30	20	30
WHCF	70	1014.5	70	50	65	90	70	70	80	70	80	50	60
WHCF	80	1046	70	70	80	80	80	90	70	70	70	60	50
WDC M	30	924	30	40	20	40	60	40	30	40	30	20	40
WDVG	10	868.2	10	10	0	10	30	30	10	10	20	10	20

6.1 Public procurement goals

Different organisations had differing public procurement goals, illuminated by the different types and number of objectives explicitly defined by the authority. Attention given to type and number seems strictly related to the role played by procurement within the institution: the higher the level of authority and the recognition of this government function, the higher the efforts put into defining the specific public procurement goals to be achieved. The operational perception of procurement realizes few normative and efficiency - driven procurement objectives (most of them suggested by national regulation) while a more

strategic role leads toward the definition of superior goals like support to local economy, community benefits and sustainability.

6.2 Contextual factors

In terms of the broader national context we did not observe any national preferences for certain configurations, especially with regard to the macro-variables. In the current Italian and Welsh local government context the degree of procurement (de)centralization cannot be altered in the medium term as this would require radical changes, management commitment, and capital investments. Consequently, these contextual factors limit the decision about the level of centralization, forcing institutions to focus on other organizational characteristics to improve procurement organization.

The Welsh cases appeared to be more flexible to changes and improvements thanks also to the lead role of the central government in driving procurement improvement programs and promoting a strategic role. In Italy procurement reorganization is mainly driven by central budget (cut) objectives and spending review programs, leaving the specific design of procurement actions to single municipalities (which are often very conservative). Instead, government role and national regulation play a more normative role for other aspects such as the definition of a minimum number of procurement goals to be included in the institution's strategic plan, and the emphasis placed on defining the performance measurement system (e.g. for the Italian cases by regulation at least two KPIs must be reported for each public office in institutions at all levels).

In our quantitative analysis we chose to show spend per capita to give an indication of the contextual setting that procurement is working within.

6.3 Performance

The cases varied in the degree that procurement performance was measured (and the extent to which procurement contributed to the overall performance of the organisation) and, of course, this can be linked to the role that procurement takes on for the organization.

In our quantitative analysis of performance, the cases with higher scores (i.e. having a structured PMS in place, a relevant number of procurement KPs monitored and most of the performance aligned with the target) were those which also give a higher span of control and authority to procurement department, giving it full power to influence the procurement operations and decisions. Cases not investing in this reveal instead a great lack of awareness of how procurement really works in their institutions, regardless of whether performance (e.g. budget) is under, over or aligned with targets.

6.4 What are the key characteristics affecting procurement configurations?

After analysing the within- and cross-case comparisons for organizational dimension reported in *Table 3* it became clear that some factors were particularly significant in classifying cases from an organizational perspective. In the previous qualitative case analysis it was apparent that degree of centralization was a key distinguishing feature of procurement departments. For our analysis we measured the “*level of centralization*” as the percentage of the total spend for which the procurement department is responsible.

Close scrutiny of the case data also revealed that several characteristics were inter-related and could be grouped under the theme, “*procurement status*”. Scholars have observed that the status of procurement within the organization affects the value that the department can deliver for the organization (e.g. Murray 2001; Cousins et al., 2006; Schneider and

Walenburg, 2013; Luzzini and Ronchi, 2016; Ates et al., 2017). “*Procurement status*” was measured as the average of several organizational characteristics, shaded in grey in *Table 3*: reporting level, grouping criteria, span of control, internal integration, purchasing recognition, and level of authority (Pearson et al., 1996; Cousins et al., 2006). We also included “*spend per citizen*”, which can be considered a relevant contextual variable when looking at the procurement department configurations (e.g. Glock and Broens 2013).

Table 4: Key factors affecting procurement organisation

	Level of centralization	Status	Spending per citizen
IDSG	25	62	1381.5
IDPV	25	21.5	717.3
IDBS	15	73	436.4
IDMZ	5	31	1081.3
IHCB	70	65	612.5
IHCM	75	85.5	762.5
ICLN	100	58	720
ICLC	100	52	846.8
WCCY	95	93	814.6
WCRH	90	88	760.7
WCNP	90	32	1407.15
WHCF	65	72	1014.5
WHCF	80	75	1046
WDCM	20	37	924
WDVG	0	13	868.2

Table 4 summarizes these key dimensions affecting procurement organisation: the *level of centralization*, *procurement status*, and *spend per citizen* for the cases in our sample. We chose the threshold of “50” as the cut-off threshold from a “low” to a “high” value for the

dimension. *Figures 2 and 3* show the positioning of the two sub-samples (i.e. Italy and UK).

Figure 2: Positioning of Welsh case studies (diameter of the bubble is given by the “spending per citizen”)

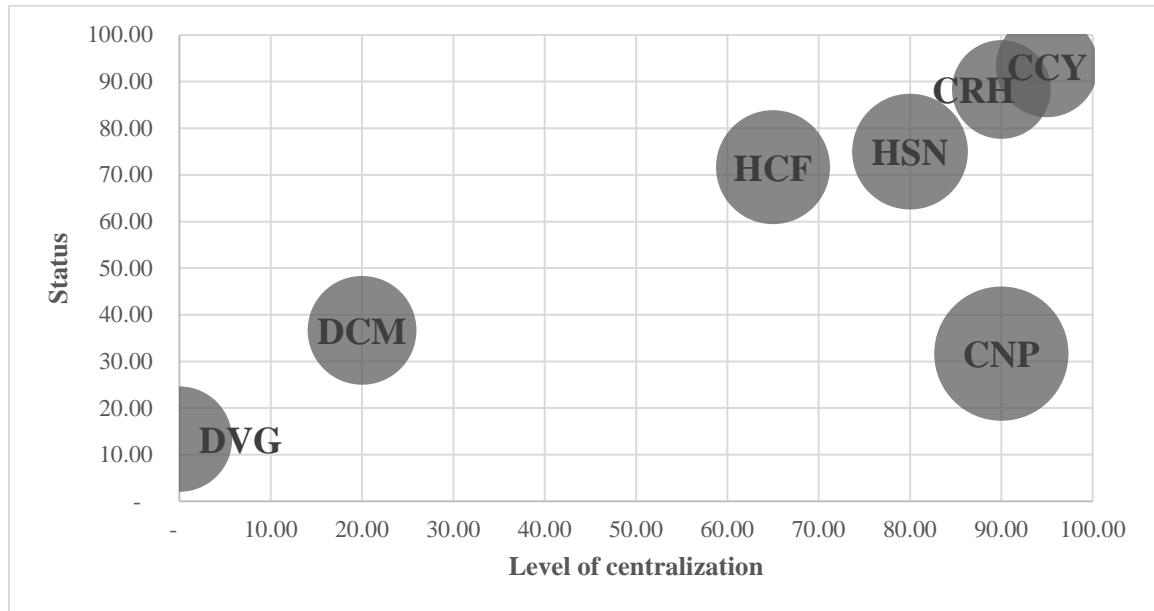
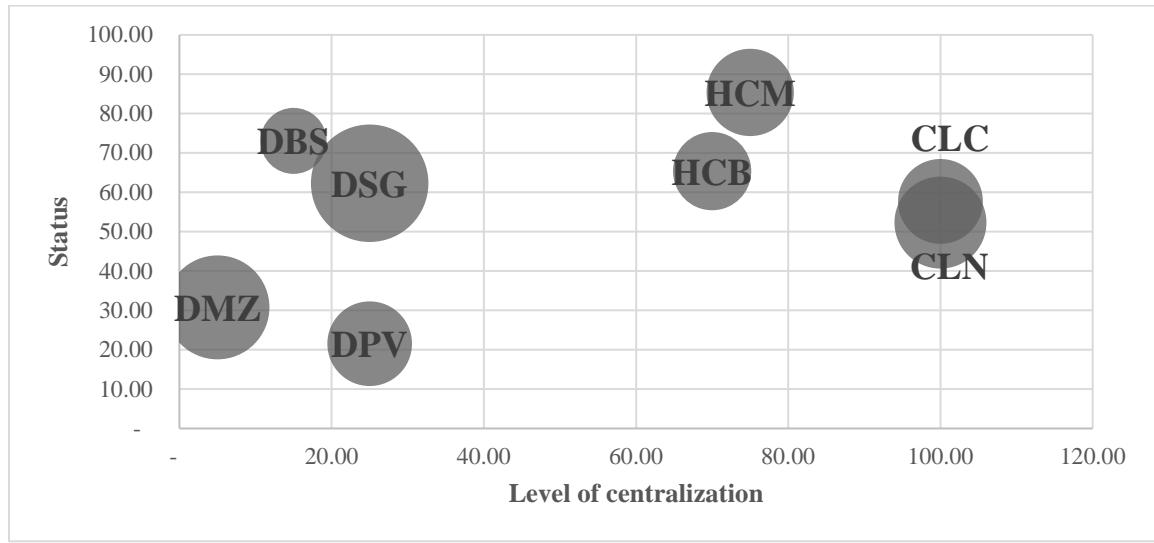


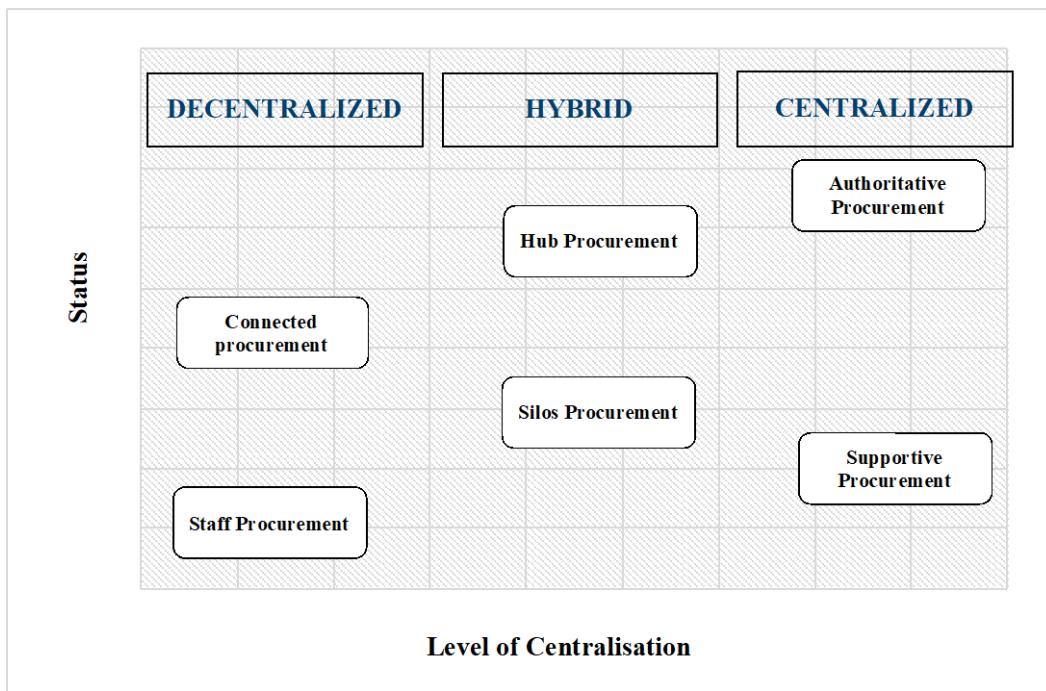
Figure 3: Positioning of Italian case studies (diameter of the bubble is given by the “spending per citizen”)



7. Public procurement configuration archetypes

By focusing our quantitative analysis of the case data on the key dimensions affecting procurement organization we were able to map out the cases and identify different organizational archetypes for procurement departments in local government. Focusing first on the level of centralization we can separate three clusters of configurations: *decentralized*, *hybrid*, and *centralized*. Then, considering the different levels of procurement status, we discriminate high and low procurement status configurations for each cluster, giving six models in total (*Figure 4*).

Figure 4: Possible Procurement Department configurations



Among the decentralized configurations we recognized two different models: *Local procurement* and *Connected procurement*; in both cases the procurement department is a staff function with differences in the extent of support to local government functioning. In the Local procurement configuration (cases WDVG, IDPV, IDMZ) procurement activities are managed and executed directly by local institution offices, with the procurement department acting as a simple supervisor for verifying compliance with

external regulations and internal procedures. In the connected procurement configuration (cases WDCM, IDSG, IDBS) procurement activities are still managed and executed by single offices but the procurement department has a supervising role in decision – making activities. In *Table 4* we summarize the characteristics of these decentralized configurations.

Table 4: Profile of Decentralized configurations

	Connected Procurement	Local Procurement
Description	The Procurement Department is responsible for very few categories (mainly non-critical purchases) and is directly involved in the decision - making activities and sourcing guidelines definition for strategic purchases managed by other Departments (e.g. planning of social and people services acquisition; definition of requirements for building maintenance...), with a strategic consulting role	The Procurement Department doesn't have any formal responsibilities in the procurement process given that purchasing responsibilities are fragmented among the different Departments; The Procurement Department may act as a controller of budget and procedure and/or support Departments when problems of compliance arise in executing operational activities
Procurement goals	No formal processes for procurement strategy definition are in place	No formal process for procurement strategy definition is in place
Reporting level	The Procurement Department is a staff Department	The Procurement Department is a staff Department, usually combined with other functions (Legal, Policy Office...)
Level of centralization	Non - critical purchases are centrally managed by the Procurement Department for both strategic and operational activities, while other categories are managed at the Department level	No categories are the responsibility of the Procurement Department, which can be involved in activities as needed by single Departments (who have distributed responsibilities on different categories)
Grouping criteria	No specific grouping criteria are used	No specific grouping criteria are used
Span of control	The Procurement Department manages the whole process for non-critical categories and is involved and consulted for strategic sourcing decisions on other categories	The Procurement Department has no defined responsibilities except that of assuring internal and external compliance to procedures
Authority	The Procurement Department emerges as having a consulting role	The Procurement Department only has a "control" function with no decision making power
Procurement skills	The Procurement Department can rely on few very skilled resources and is able to participate in and contribute to procurement strategy definition	The Procurement Department can rely on very few resources, with basic procurement competencies for dealing with formal procurement rules and regulation
Internal integration	There is a great deal of integration and interaction between the Procurement Department and single Departments; even though in a reactive and uncoordinated way, sourcing strategy and decision are driven by the Procurement Department suggestions	There are frequent and unpredictable interactions with other Departments as most of resources do not have competencies for managing procurement activities independently
Purchasing recognition	The Procurement Department is perceived as a key participant in sourcing decision - making activities, especially for more critical categories	The Procurement Department is perceived as having an "avoiding mistakes" role and is consulted to verify the accuracy of execution of operational activities

Process formalization	Procurement tools and procedures are designed and shared among all Departments	Procurement tools and procedures are designed and shared among all Departments
Performance measurement	The performance measurement system is designed around cost savings by categories and quality improvements	No performance measurement system is in place (single Departments are focused on respecting budget cost)

Among the hybrid configurations we identified two options: ***Silo procurement*** and ***Hub procurement*** departments. In the Silo procurement configuration (cases WHCF, IHCB) management and execution of procurement activities are differentiated by purchasing category, with ownership split between the procurement department and other offices (e.g. technical and special goods and services are under responsibility of other offices whereas non-technical spend is the responsibility of the procurement department). In the Hub procurement configuration (cases WHCF, IHCM) management and execution of procurement activities are still differentiated by purchasing categories and split between the procurement department and other offices but integration solutions and mechanisms are in place to ensure strategic and operational alignment. In *Table 5* we summarize the characteristics of these hybrid configurations.

Table 5: Profile of Hybrid configurations

	Hub Procurement	Silo Procurement
Description	Procurement resources are "distributed" in the different municipality Departments, with a central office (category manager, senior procurement officer) in charge of decision-making activities for common and non-critical purchases and operational staff are positioned on-site in the Departments. Strategic and technical guidelines for specific and critical purchases are usually provided by single Departments and operational activities are executed by on-site staff	The Procurement Department is responsible for the supply of non-specific goods and services and in charge of both operational and decision-making activities; the supply of specific technical goods and services is directly managed by single Departments
Procurement goals	A long - term plan is clearly defined and targets are set, especially for commercial objectives (e.g. value for money, customer satisfaction)	Strategic plans are defined on a yearly basis (as category scope may vary) with a great focus on efficiency targets and actions
Reporting level	The Procurement Department is generally positioned at the same level as other Departments	The Procurement Department is generally a second level Department
Level of centralization	The Procurement Department is responsible for common goods and service purchases while technical categories are managed at the	The Procurement Department is responsible for common goods and services purchases with marginal or no visibility (and involvement) in other

	Departmental level (with the support of on-site resources)	categories
Grouping criteria	Category management criteria are used to organize resources	Category management criteria are used to organize resources
Span of control	The Procurement Department has responsibilities for both operational and strategic activities for categories under its control, providing operational support for all the others	The Procurement Department has responsibilities for both operational and strategic activities for categories under its control
Authority	The Procurement Department manages all the decisions and interacts with single Departments in order to pursue joint strategies	The Procurement Department can manage decisions independently (with other Departments having supporting/consulting roles)
Procurement skills	There is an adequate number of resources for creating a central procurement structure (with highly skilled and professional people) and operational procurement resources are distributed at Department level	The Procurement Department can rely on a significant amount of resources with strong procurement and managerial competencies
Internal integration	Frequent, planned and intense meetings with heads of single Departments are in place in order to align procurement category guidelines in and out of the scope of the Procurement Department	Integration is very weak as procurement decisions are taken independently by the Procurement Department and single Departments according to category responsibilities distribution
Purchasing recognition	The Procurement Department is perceived as a critical cornerstone for the efficient and effective delivery of goods and services for final users	Due to the weak integration and lack of communication the Procurement Department's role in managing non-specific goods and services is not clearly perceived within the institution
Process formalization	Procurement tools and procedures are shared and made available to all Departments and targeted cross-functional meetings are planned regularly	Procurement tools and procedures are defined at a general level in the Procurement Department; for other Departments the Procurement Department is often not aware of how the process should be structured and executed
Performance measurement	There is a structured and shared performance measurement system, including cost and process savings measures for categories managed by the Procurement Department, and quality improvements and value for money measures for categories out of its scope	The performance measurement system is designed around traditional procurement performance areas (Cost, Quality, Compliance), only for categories under the Procurement Department's responsibility

Finally, among the centralized configurations, we have two options: ***Authoritative procurement*** and ***Supportive procurement***. In the Authoritative procurement configuration (cases WCCY, WCRH, ICLN) the management and execution of procurement activities is fully centralized in the procurement department, which holds responsibility for both strategic and operational aspects. In the Supportive procurement configuration (cases CNT, ICLC) full centralization is in place only for operational activities, for which procurement-specific competencies are essential to ensure regulatory

and internal compliance. In *Table 6* we summarize the characteristics of these centralized configurations.

Table 6: Profile of Centralized configurations

	Authoritative Procurement	Supportive Procurement
Description	A strong Procurement Department is responsible for all the procurement operational and decision-making activities, within a centralized structure	The Procurement Department is directly responsible for executing all the operational activities for the different categories (bid design and evaluation, supplier qualification, order management), which are fully centralized
Procurement goals	A long - term plan is clearly defined, with targets set for commercial, regulatory and socio-economic objectives	Strategic objectives are almost built around efficiency (savings and process cost) and regulatory aspects
Reporting level	The Procurement Department is generally positioned at the same level as other Departments	The Procurement Department is generally a second/third level Department
Level of centralization	All the categories are centrally managed for both strategic and operational activities	All the categories are centrally managed for operational activities, with strategic guidelines communicated by single Departments and/or final users)
Grouping criteria	Category management criteria are used to organize resources	No specific grouping criteria are used; activities are allocated according to spending responsibilities assigned to each buyer
Span of control	The Procurement Department has responsibilities for both strategic and operational activities	The Procurement Department has responsibilities only for operational activities
Authority	The Procurement Department can manage decisions independently (other Departments have a supporting/consulting role)	The Procurement Department acts as an executor of guidelines set by other Departments
Procurement skills	The Procurement Department can rely on many resources with strong backing and competencies	The Procurement Department can rely on few resources; due to the nature of activities, also basic procurement competencies are sufficient to execute tasks
Internal integration	Coordination meetings with other Departments are planned, with spot interactions for technical support	No formal or planned coordination mechanisms are in place, as communication between the Procurement Department and other Departments takes place on a regular basis, albeit in a reactive way
Purchasing recognition	The Procurement Department's role, competencies and authority are clearly recognized by other Departments	The Procurement Department is perceived as the "executive arm" of the procurement process
Process formalization	Procurement tools and the procedures manual are defined at a general level, as all the activities are executed within the same Department	Procurement tools and procedures are defined at a general level but communication mechanisms with Departments and stakeholder involvement can occur in unpredictable ways
Performance measurement	There is a structured and shared performance measurement system, covering all the main areas (cost, quality, compliance, sustainability)	The performance measurement system is designed around cost savings by categories and compliance aspects (e.g. community benefits, local supplier rotation, number of tenders' invitation...)

8. Discussion

Our qualitative and quantitative analysis of case data supports the elements included in our conceptual framework, and points to the existence of six specific configurations for procurement organization in local administrations. The key characteristics affecting procurement organisation are the level of procurement centralization and the status of procurement within the institution. The first classification dimension is recurrent in recent private and public procurement literature (e.g. Johnson et al., 2014; Wang and Li, 2014; Bals and Turkulainen, 2017) while the link between procurement organization and its status is relatively new (e.g. Luzzini and Ronchi, 2016; Tchokogué et al., 2017) and has not been addressed in the public management field.

All the six proposed configurations have their strengths and weaknesses (summarized in *Table 7*) and their suitability and potential for redesign depend on several internal and external factors, in line with the contingency view of organizational design (Boyne and Walker, 2010).

Table 7: Strengths and weaknesses of proposed configurations

Authoritative	Strengths	There is a great deal of control over the whole process and performance improvement can be reached at all levels (e.g. savings, lower process cost, better requirements, higher customer satisfaction)
	Weaknesses	High investments are needed to design and implement a centralized structure, together with the need for strong management commitment to affirm the new authority of the Procurement Department
Supportive	Strengths	The execution of operational activities by the Procurement Department assures internal compliance and respect for regulations
	Weaknesses	Integration and deployment of external guidelines can be critical for procurement resources, both for the number of interfaces to be managed and for the lack of authority to introduce changes when bad practices are evident; this may result in longer times and higher costs for the process and create frustration
Hub	Strengths	Organizational (more than financial) investments are needed to implement the structure, achieving maximum integration between single Departments and the Procurement Department, with continuous communication and opportunities for sharing best practices
	Weaknesses	The Procurement Department results in a very complex structure where communication mechanisms and integration must be carefully managed in order to avoid duplication of activities and a negative impact on performance

Silo	Strengths	With a fair level of resources and investment, this configuration can be easily adopted by many types of institutions, with good distribution of procurement responsibilities
	Weaknesses	A non - integrated procurement strategy may result whereby the Procurement Department lacks visibility on many categories. What's more, weak integration and low Procurement Department recognition could result in undesired behaviour (e.g. maverick buying)
Connected	Strengths	Strategic procurement decisions integrate the points of view of both technical and procurement people and the Procurement Department is assigned a value adding role even with a low spending coverage
	Weaknesses	Interaction mechanisms and procurement strategy definition are not formalized processes and the Procurement Department operates mainly in a reactive way thus missing out on opportunities
Local	Strengths	The Procurement Department acts as a "filter" for procedures, assuring compliance
	Weaknesses	The Procurement Department's role is minimal, with no possibilities to contribute to the municipality's broader objectives

Government characteristics and regulatory and policy goals seem to influence the choice of level of centralization (and the way it is implemented) thus positioning procurement organization in one cluster (i.e. centralized, decentralized, hybrid). While, in recent years, procurement centralization has increased at all levels in many countries (OECD 2013; Karjalainen 2011), our findings suggest that for local governments an a priori optimal choice at this level does not exist. Past discussions suggest that procurement should evolve from a decentralized towards a hybrid and finally to a centralized configuration (e.g. Erridge et al. 2001; Karjalainen, 2011; Baldi and Vannoni, 2017). According to our cases, the opportunity to increase procurement centralization only seems possible if certain conditions exist. For all the cases we studied, higher or lower centralization choices were always driven by government factors and regulatory objectives, making institutions question whether centralization is justified by substantial spend and aligned with regulatory changes and institutional policy objectives; whether there are enough resources to support change; and whether a real management commitment to promote this change within the institution is present.

These factors when not present can also limit organizational development. The Supportive procurement configuration, for example, maximizes time performance and compliance for operational activities but the frustrating situation of only being the executor of procedural aspects (without any involvement in strategy and planning) may undermine these benefits in the long term. So, in order to avoid this, local governments can think about increasing the procurement department's responsibility (e.g. in common goods and services offices) but only if specific organizational factors are present and/or can be improved (e.g. competencies development, the availability of resources).

While government and regulatory aspects may influence centralization decisions more, the evolution of commercial and socio-economic goals seems to drive changes on the status dimension thus (re)positioning the procurement organization inside a cluster (Local or connected; Silo or Hub; Supportive or Authoritative). For example, as the Local procurement configuration is designed to guarantee the normative and regulatory aspects of procurement it does not have direct control over procurement activities, with potential loss of opportunities in cost, time and quality performance, and has no interest in "higher" procurement goals (e.g. sustainability; innovation). When these become priority goals for the institution a possible change would be to engage procurement in strategic planning and decision-making in order to identify opportunities at the category management and process level.

The cases were also useful for clarifying the scope and impact of the geographical location factor. The country effect is not easy to define given that some of its aspects (such as government pressure toward certain objectives, or specific regulation) are already isolated in other contingent factors. What we found more significant at the country level (i.e. Italy

and Wales) was the cultural aspect. The possibility of reshaping procurement organization and moving to another of the possible archetypes initially depends on how procurement is perceived as strategic inside the institution, but mainly on how much the institution wants to enhance this recognition, and this is strictly linked to the country's "procurement culture". As described, the Silo procurement configuration reveals certain challenges, especially concerning how procurement activities are misaligned in their execution by the individual offices of the authority, which limits the possibility of obtaining collective savings, assuring compliance, and controlling the supply base. The introduction of specific communication mechanisms and roles that favour the coordination of procurement processes may bring greater homogeneity and best – practice sharing and substantially improve overall process management, supply base control and compliance to internal and external procedures. With a bigger investment, a Silo procurement configuration can be transformed by assigning responsibility over the whole government spend (thus overcoming the integration problem), enabling a long-term action plan for improving all dimensions of procurement performance. Both situations are feasible only if efforts, in terms of managing and communicating the changes to other offices, are extensively introduced. In a country culture where public management is based on continuous improvement, and procurement is perceived as one of the key points for achieving broader national objectives, these efforts are more likely to be put in place. In a country culture where public management is still seen under a bureaucratic lense, with procurement being perceived as just an administrative function, efforts and investment are likely to be allocated to other areas.

9. Conclusions and implications

Procurement in the public sector is often seen as playing a less strategic role than in the private sector, as it is generally regarded as an operational means to an end to deliver goods and services that are required by governments (Thai, 2015).

Researchers are paying more attention to public procurement and its strategic role for institutions at all levels, but the field is still relatively new and lags behind private procurement literature (Murray, 2009). With our study we would like to contribute to this body of research, focusing on the role that procurement organization can have in shaping procurement performance in public institutions.

In line with contingency theory we put forward a conceptual framework of the factors affecting the organization of procurement departments, and found support for all the factors that we gleaned from the literature in our subsequent empirical study. We then identified three potential clusters of configurations, represented by two sub-types - decentralized (*Local* and *integrated*), hybrid (*Silo* and *Hub*), and centralized (*Supportive* and *Authoritative*) - each one differentiated according to the level of centralization of procurement activities and the status of procurement in the institutions. We also presented the overall strengths and weaknesses for each of the six configurations, discussing how internal and external contextual factors affect the (re)design of public procurement organization.

Public administrations will always seek the structure that increases their ability to deliver value to the public, even though there will always be differing views concerning procurement's role and potential contribution to public value. The inclusion of both UK and Italian municipalities allowed us to compare the level of maturity and status of

procurement in both national contexts. The status of procurement was found to be higher in the UK public sector, which indicates that procurement managers in the UK may be better placed to influence procurement configurations and indeed the public value and performance improvements attributable to them.

Finally, the cases show a clear linkage between organizational choices and performance measurement system design. Although we cannot generalize about which type of performance each configuration is able to guarantee we can conclude for sure that the choice of one of the archetypes directly or indirectly defines the level of depth and the structure of the PMS.

In light of this, our study has several theoretical contributions. It establishes a conceptual framework for public procurement organisation that draws on a contingent approach and is grounded in previous literature. It also identifies three levels of procurement department organization characteristics (the micro, macro and process level). The case studies provide empirical evidence that confirms the conceptual framework and, following a focused analysis of key dimensions (level of centralisation, procurement status, spend per capita), it is possible to map out the different organisation types for each case and propose possible organizational archetypes for procurement in the public sector.

These findings are also useful for public managers, who should be aware of the potential to be gained from a well-organized procurement department. First, they can use the conceptual framework as a reference model to understand which variables need to be considered when designing procurement organization in their institution, using the six archetypes as a starting point. Secondly, the framework is useful for evaluating the internal

and external contextual factors that will influence public procurement organizational design, and also when it comes to considering the connections between design and performance. This can help promote a change in the perceptions of public procurement's potential contribution to the functioning of public institutions: the procurement department should be configured to deliver value to the authority thus contributing to its ability to deliver a valuable service to citizens and broader government policy and objectives.

This study can be further developed. First of all, the case study methodology allowed us to focus upon municipalities as the unit of analysis (to maximize the completeness and accuracy of our findings) and this may limit the possibility of generalizing our findings to other parts of the public sector. One possible suggestion for future research could be to consider the proposed configurations in the context of other public institutions (e.g. central governments, universities, healthcare) and to verify whether they still apply or need to be adapted. Moreover, adopting a case study methodology makes it difficult to explore the interconnections within the proposed conceptual framework and how the different elements relate to one another (e.g. how types of goals relate to specific configurations, or how certain characteristics relate to performance). A further suggestion could be to conduct a survey and collect quantitative data, to explore the relationships between the various components of the framework.

References

- Afonso, A., Schuknecht, L., & Tanzi, V. (2010). Public sector efficiency: evidence for new EU member states and emerging markets. *Applied Economics*, 42(17), 2147-2164.
- Andrews, R., & Boyne, G. (2012). Structural change and public service performance: The impact of the reorganization process in English local government. *Public Administration*, 90(2), 297-312.
- Arnold, U.. 1999. Organization of global sourcing: Ways towards an optimal degree of centralization. *European Journal of Purchasing & Supply Management* 5 (3): 167-74.
- Ateş, M. A., van Raaij, E. M., & Wynstra, F. (2017). The impact of purchasing strategy-structure (mis) fit on purchasing cost and innovation performance. *Journal of Purchasing and Supply Management*.
- Bakker, E., Walker, H., Schotanus, F., & Harland, C. (2008). Choosing an organisational form: the case of collaborative procurement initiatives. *International journal of procurement management*, 1(3), 297-317.
- Baldi, S., & Vannoni, D. (2017). The impact of centralization on pharmaceutical procurement prices: the role of institutional quality and corruption. *Regional Studies*, 51(3), 426-438.
- Bals, L., & Turkulainen, V. (2017). Achieving efficiency and effectiveness in Purchasing and Supply Management: Organization design and outsourcing. *Journal of Purchasing and Supply Management* (in press).
- Bemelmans, J., Voordijk, H., & Vos, B. (2013). Designing a tool for an effective assessment of purchasing maturity in construction. *Benchmarking: An International Journal*, 20(3), 342-361.
- Benington, J. (2009). Creating the public in order to create public value? *International Journal of Public Administration* 32 (3-4): 232-49.
- Boyne, G. A., & Walker, R. M. (2010). Strategic management and public service performance: The way ahead. *Public administration review*, 70(s1).
- Brewer, B., Wallin, C., & Ashenbaum, B. (2014). Outsourcing the procurement function: Do actions and results align with theory?. *Journal of Purchasing and Supply Management*, 20(3), 186-194.
- Callender, G., & McGuire, J. (2007). 21 People in public procurement. *Public Procurement: International Cases and Commentary*, 314.
- Caniato, F., Golini, R., Luzzini, D., & Ronchi, S. (2010). Towards full integration: eProcurement implementation stages. *Benchmarking: An International Journal*, 17(4), 491-515.
- Carr, A.S., and Pearson J. (2002). The impact of purchasing and supplier involvement on strategic purchasing and its impact on firm's performance. *International Journal of Operations & Production Management* 22 (9): 1032-53.
- Carter, J. R., & Narasimhan, R. (1996). Is purchasing really strategic?. *Journal of Supply Chain Management*, 32(4), 20-28.
- Carter, P. L., Carter, J. R., Monczka, R. M., Slaight, T. H., & Swan, A. J. (2000). The Future of Purchasing and Supply: A Ten-Year Forecast1. *Journal of Supply Chain Management*, 36(4), 14-26.

- Cavinato, Joseph L. (1991). Evolving procurement organizations: Logistics implications. *Journal of Business Logistics* 13 (1): 27-45.
- Chen, I. J., Paulraj, A., & Lado, A. A. (2004). Strategic purchasing, supply management, and firm performance. *Journal of operations management*, 22(5), 505-523.
- Chester Buxton, R., & Radnor, Z. (2012). How do they do it? Understanding back office efficiency savings made by English councils. *International Journal of Public Sector Management*, 25(2), 118-132.
- Christensen, T., Lægreid, P., Roness, P. G., & Røvik, K. A. (2007). Organization theory and the public sector: Instrument, culture and myth. Routledge.
- Coulson, A. (2008). Value for money in PFI proposals: A commentary on the UK Treasury Guidelines for Public Sector Comparators. *Public Administration*, 86(2), 483-498.
- Cousins, P. D., Lawson, B., & Squire, B. (2006). An empirical taxonomy of purchasing functions. *International Journal of Operations & Production Management*, 26(7), 775-794.
- De Vries, H., Bekkers, V., & Tummers, L. (2016). Innovation in the public sector: A systematic review and future research agenda. *Public Administration*, 94(1), 146-166.
- Decarolis, F., & Giorgiantonio, C. (2015). Local public procurement regulations: The case of Italy. *International review of law and economics*, 43, 209-226.
- Dimitri, N., Dini, F., & Piga, G. (2006). When should procurement be centralized. *Handbook of procurement*, 47-81.
- Erridge, A., McIlroy J. (2002). Public procurement and supply management strategies. *Public Policy and Administration* 17 (1): 52-71.
- Erridge, A., Fee, R., & McIlroy, J. (Eds.). (2001). *Best practice procurement: Public and private sector perspectives*. Gower Publishing, Ltd..
- Faes, W., MatthysSENS, P., & Vandenbempt, K. (2000). The pursuit of global purchasing synergy. *Industrial Marketing Management*, 29(6), 539-553.
- Farrer, D. G. (1969). The Organization of a Military Procurement Function. *Journal of Supply Chain Management*, 5(1), 68-81.
- Fernandez, S., & Rainey, H. G. (2006). Managing successful organizational change in the public sector. *Public administration review*, 66(2), 168-176.
- Flynn, B., Huo, B., and Zhao, X. (2010). The impact of supply chain integration on performance: A contingency and configuration approach. *Journal of Operations Management*, 28 (1), 58-71.
- Foerstl, K., Hartmann, E., Wynstra, F., & Moser, R. (2013). Cross-functional integration and functional coordination in purchasing and supply management: Antecedents and effects on purchasing and firm performance. *International Journal of Operations & Production Management*, 33(6), 689-721.
- Gianakis, G. A., & Wang, X. (2000). Decentralization of the purchasing function in municipal governments: A national survey. *Journal of Public Budgeting, Accounting & Financial Management*, 12(3), 421.

- Ginsberg, A., & Venkatraman, N. (1985). Contingency perspectives of organizational strategy: a critical review of the empirical research. *Academy of Management Review*, 10(3), 421-434.
- Giunipero, Larry C., and Robert M. Monczka. (1990). Organizational approaches to managing international sourcing. *International Journal of Physical Distribution & Logistics Management* 20 (4): 3-12.
- Glock, C. H., & Broens, M. G. (2013). Size and structure in the purchasing function: evidence from german municipalities. *Journal of Public Procurement*, 13(1), 1.
- Glock, C. H., & Hochrein, S. (2011). Purchasing Organization and Design: a literature review. *Business Research*, 4(2), 149-191.
- Gonzalez-Benito, J. (2007). A theory of purchasing's contribution to business performance. *Journal of Operations Management* 25 (4): 901-17.
- Harland, C. M., Caldwell, N. D., Powell, P., & Zheng, J. (2007). Barriers to supply chain information integration: SMEs adrift of eLands. *Journal of operations management*, 25(6), 1234-1254.
- Harland, C., Telgen, J., & Callender, G. (2013). International research study of public procurement. *The SAGE handbook of strategic supply management*, 374-401.
- Hartmann, E., Trautmann, G., & Jahns, C. (2008). Organisational design implications of global sourcing: A multiple case study analysis on the application of control mechanisms. *Journal of Purchasing and Supply Management*, 14(1), 28-42.
- Haveri, A. (2015). Nordic local government: a success story, but will it last?. *International Journal of Public Sector Management*, 28(2), 136-149.
- Hood, C. (1991). A public management for all seasons?. *Public administration*, 69(1), 3-19.
- Iacovino, N. M., Barsanti, S., & Cinquini, L. (2017). Public Organizations Between Old Public Administration, New Public Management and Public Governance: the Case of the Tuscany Region. *Public Organization Review*, 17(1), 61-82.
- Jia, F., Lamming, R., Sartor, M., Orzes, G., & Nassimbeni, G. (2014). International purchasing offices in China: A dynamic evolution model. *International Business Review*, 23(3), 580-593.
- Johnson, P. F., and Leenders M.. (2001). The supply organizational structure dilemma. *Journal of Supply Chain Management* 37 (2): 4-11.
- Johnson, P. F., and Leenders M.. (2004). Implementing organizational change in supply towards decentralization. *Journal of Purchasing and Supply Management* 10 (4): 191-200.
- Johnson, P. F., and Leenders M.. (2006). A longitudinal study of supply organizational change. *Journal of Purchasing and Supply Management* 12 (6): 332-42.
- Johnson, P. F., and Leenders M.. (2009). Changes in supply leadership. *Journal of Purchasing and Supply Management* 15 (1): 51-62.

- Johnson, P. F., Leenders M. Fearon H. (2006). Supply's growing status and influence: A Sixteen-Year perspective. *Journal of Supply Chain Management* 42 (2): 33-43.
- Johnson, P. F., Leenders, M. R., & McCue, C. (2003). A comparison of purchasing's organizational roles and responsibilities in the public and private sector. *Journal of Public Procurement*, 3(1), 57.
- Johnson, P. F., Shafiq, A., Awaysheh, A., & Leenders, M. (2014). Supply organizations in North America: A 24 year perspective on roles and responsibilities 1987–2011. *Journal of Purchasing and Supply Management*, 20(2), 130-141.
- Johnston, W. J., & Bonoma, T. V. (1981). The buying center: structure and interaction patterns. *The Journal of Marketing*, 143-156.
- Joyce, William B. (2006). Accounting, purchasing and supply chain management. *Supply Chain Management: An International Journal* 11 (3): 202-7.
- Kamann, Dirk-Jan F. (2007). Organizational design in public procurement: A stakeholder approach. *Journal of Purchasing and Supply Management* 13 (2): 127-36.
- Karjalainen, K. (2011). Estimating the cost effects of purchasing centralization—Empirical evidence from framework agreements in the public sector. *Journal of Purchasing and supply Management*, 17(2), 87-97.
- Kern, D., Moser, R., Sundaresan, N., & Hartmann, E. (2011). Purchasing Competence: A Stakeholder-Based Framework for Chief Purchasing Officers. *Journal of Business Logistics*, 32(2), 122-138.
- Knight, L., Harland, C., Telgen, J., Thai, K. V., Callender, G., & McKen, K. (Eds.). (2012). *Public procurement: International cases and commentary*. Routledge.
- Laios, L., and Evangelos X.. (1994). An investigation into the structure of the purchasing function of state-controlled enterprises. *Journal of Business Research* 29 (1): 13-21.
- Lawrence, P. R., & Lorsch, J. W. (1967). Differentiation and integration in complex organizations. *Administrative science quarterly*, 1-47.
- Luzzini, D., Ronchi, S. (2016). Cinderella purchasing transformation: linking purchasing status to purchasing practices and business performance. *Production Planning & Control*, 27(10), 787-796.
- Luzzini, D., Longoni, A., Moretto, A., Caniato, F., & Brun, A. (2014). Organizing IT purchases: Evidence from a global study. *Journal of Purchasing and Supply Management*, 20(3), 143-155.
- Luzzini, D., and Ronchi, S. 2011. Organizing the purchasing department for innovation. *Operations Management Research* 4 (1-2): 14-27.
- MacManus, S. A. (1991). Why Businesses are Reluctant to Sell to Governments. *Public Administration Review*, 51(4), 328-344.
- Malatesta, D., & Smith, C. R. (2011). Resource Dependence, Alternative Supply Sources, and the Design of Formal Contracts. *Public Administration Review*, 71(4), 608-617.
- Martin, S., Hartley, K., & Cox, A. (1999). Public procurement directives in the European Union: a study of municipality purchasing. *Public Administration*, 77(2), 387-406.

- McAdam, Rodney, Tim Walker, and Shirley-Ann Hazlett. (2011). An inquiry into the strategic-operational role of performance management in local government. *International Journal of Public Sector Management* 24 (4): 303-24.
- McCue, Clifford P., and Jack T. Pitzer. (2000). Centralized vs. decentralized purchasing: Current trends in governmental procurement practices. *Journal of Public Budgeting Accounting and Financial Management* 12 : 400-20.
- McKevitt, D., Davis, P., Woldring, R., Smith, K., Flynn, A., & McEvoy, E. (2012). An exploration of management competencies in public sector procurement. *Journal of Public Procurement*, 12(3), 333.
- Mintzberg, H. (1980). Structure in 5's: A synthesis of the research on organization design. *Management Science* 26 (3): 322-41.
- Monczka, R. M., Handfield, R. B., Giunipero, L. C., & Patterson, J. L. (2015). *Purchasing and supply chain management*. Cengage Learning.
- Moody, P. E. (2001). Strategic purchasing remains an oxymoron. *MIT Sloan Management Review*, 42(2), 18-18.
- Murray G., J., Rentell, P. G., & Geere, D. (2008). Procurement as a shared service in English local government. *International Journal of Public Sector Management*, 21(5), 540-555.
- Murray, J. G. (2007). Strategic procurement in UK local government: the role of elected members. *Journal of Public Procurement*, 7(2), 194.
- Murray, J. G. (2011). Third sector commissioning and English local government procurement. *Public Money & Management*, 31(4), 279-286.
- Murray, J. G. (2014). Debate: Public procurement needs outcome evaluations. *Public Money & Management*, 34(2), 141-143.
- Murray, J.G. (2001). Local government and private sector purchasing strategy: A comparative study. *European Journal of Purchasing & Supply Management* 7 (2): 91-100.
- Nair, A., Jayaram, J., & Das, A. (2015). Strategic purchasing participation, supplier selection, supplier evaluation and purchasing performance. *International Journal of Production Research*, 53(20), 6263-6278.
- Nurmandi, A., & Kim, S. (2015). Making e-procurement work in a decentralized procurement system: A comparison of three Indonesian cities. *International Journal of Public Sector Management*, 28(3), 198-220.
- OECD (2013). Monitoring of Public Procurement. *SIGMA Public Procurement Briefs*, No. 27, OECD Publishing, Paris.
- OECD (2017), *Government at a Glance 2017*, OECD Publishing, Paris
http://dx.doi.org/10.1787/gov_glance-2017-en
- Parker, R., & Bradley, L. (2000). Organisational culture in the public sector: evidence from six organisations. *International Journal of Public Sector Management*, 13(2), 125-141.

- Patrucco, A. S., Luzzini, D., & Ronchi, S. (2016). Evaluating the effectiveness of public procurement performance management systems in local governments. *Local Government Studies*, 42(5), 739-761
- Patrucco, A. S., Luzzini, D., Ronchi, S., Essig, M., Amann, M., & Glas, A. H. (2017). Designing a public procurement strategy: lessons from local governments. *Public Money & Management*, 37(4), 269-276.
- Pearson, John N., Lisa M. Ellram, and Craig R. Carter (1996). Status and recognition of the purchasing function in the electronics industry. *International Journal of Purchasing and Materials Management* 32 (1): 30-6.
- Pemer, F., & Skjølsvik, T. (2016). Purchasing policy or purchasing police? The influence of institutional logics and power on responses to purchasing formalization. *Journal of Supply Chain Management*, 52(4), 5-21.
- Pennings, J. M. (1992). Structural contingency theory-a reappraisal. *Research in organizational behavior*, 14, 267-309.
- Pooley, J., & Dunn, S. C. (1994). A longitudinal study of purchasing positions: 1960-1989. *Journal of Business Logistics*, 15(1), 193.
- Quintens, L, Pieter P., and MatthysSENS P. (2006). Global purchasing: State of the art and research directions. *Journal of Purchasing and Supply Management* 12 (4): 170-81.
- Rendon, R. G. (2008). Procurement process maturity: Key to performance measurement. *Journal of Public Procurement*, 8(2), 200.
- Rozemeijer, Frank. 2000. How to manage corporate purchasing synergy in a decentralized company? towards design rules for managing and organizing purchasing synergy in decentralized companies. *European Journal of Purchasing & Supply Management* 6 (1): 5-12.
- Rubery, J., Grimshaw, D., & Hebson, G. (2013). Exploring the limits to municipality social care commissioning: competing pressures, variable practices, and unresponsive providers. *Public Administration*, 91(2), 419-437.
- Sanderson, J. (2009). Buyer-supplier partnering in UK defence procurement: looking beyond the policy rhetoric. *Public Administration*, 87(2), 327-350.
- Schiele, J. J. (2005). Meaningful involvement of municipal purchasing departments in the procurement of consulting services: case studies from Ontario, Canada. *Journal of Purchasing and Supply Management*, 11(1), 14-27.
- Schneider, L., & Wallenburg, C. M. (2013). 50 Years of research on organizing the purchasing function: Do we need any more?. *Journal of Purchasing and Supply Management*, 19(3), 144-164.
- Schotanus, Fredo, and Jan Telgen. 2007. Developing a typology of organizational forms of cooperative purchasing. *Journal of Purchasing and Supply Management* 13 (1): 53-68.
- Schotanus, Fredo, Elmer Bakker, Helen Walker, and Michael Essig. 2011. Development of purchasing groups during their life cycle: From infancy to maturity. *Public Administration Review* 71 (2): 265-75.

- Sousa, R., & Voss, C. A. (2008). Contingency research in operations management practices. *Journal of Operations Management*, 26(6), 697-713.
- Spina G., Caniato F., Luzzini D., Ronchi S. (2016). Assessing the use of External Grand Theories in Purchasing and Supply Management research, *Journal of Purchasing and Supply Management*, Vol. 22(1), 18-30.
- Stake, R. E. (2013). Multiple case study analysis. Guilford Press.
- Stentoft Arlbjørn, J., & Vagn Freytag, P. (2012). Public procurement vs private purchasing: is there any foundation for comparing and learning across the sectors?. *International Journal of Public Sector Management*, 25(3), 203-220.
- Tadelis, S. (2012). Public procurement design: Lessons from the private sector. *International Journal of Industrial Organization*, 30(3), 297-302.
- Tassabehji, R., & Moorhouse, A. (2008). The changing role of procurement: Developing professional effectiveness. *Journal of Purchasing and Supply Management*, 14(1), 55-68.
- Tchokogué, A., Nollet, J., & Robineau, J. (2017). Supply's strategic contribution: An empirical reality. *Journal of Purchasing and Supply Management*, 23(2), 105-122.
- Thai, K. V. (2015). International Public Procurement: Innovation and Knowledge Sharing. In International Public Procurement (pp. 1-10). Springer International Publishing.
- Thai, K. V. (2009). International public procurement: Concepts and practices. *International Handbook of Public Procurement*: 2-24.
- Thai, K. V. (2008). *International handbook of public procurement*. CRC Press.
- Thai, Khi V., and Piga G. (2007). *Advancing public procurement: Practices, innovation, and knowledge sharing*. PrAcademics Press.
- Tkachenko, A., Yakovlev, A., & Rodionova, Y. (2017). Organizational Forms and Incentives in Public Procurement: Natural Experiment at a Large Public Sector Organization in Russia. *International Journal of Public Administration*, 1-12.
- Trautmann, G., Turkulainen, V., Hartmann, E., & Bals, L. (2009). Integration in the global sourcing organization—An information processing perspective. *Journal of Supply Chain Management*, 45(2), 57-74.
- Trent, R. J. (2004). The use of organizational design features in purchasing and supply management. *Journal of Supply Chain Management*, 40(2), 4-18.
- Verma, R. McLaughlin, C., Johnston, R. & Youngdhal, W. (2005). Operations Management in not-for-profit, public and government services: Charting a new research frontier. *Journal of Operations Management*, 23, 117-123.
- Voss, C., Tsikriktsis N, and Frohlich M. (2002). Case research in operations management. *International Journal of Operations & Production Management* 22 (2): 195-219.

- Walker, H., Schotanus, F., Bakker, E. & Harland, C. (2013). Collaborative procurement: a relational view of 'buyer-buyer' relationships. *Public Administration Review*, 73(4), 588-598.
- Wang, C., & Li, X. (2014). Centralizing Public Procurement in China: Task environment and organizational structure. *Public Management Review*, 16(6), 900-921.
- Wood, Gerard D., and Robert CT Ellis. (2005). Main contractor experiences of partnering relationships on UK construction projects. *Construction Management and Economics* 23 (3): 317-25.
- Yin, R. K. (2003). Case study research: design and methods, Applied social research methods series. *Thousand Oaks, CA: Sage Publications, Inc.*

APPENDIX

A. Interview protocol

Table A1: Interview protocol

Characteristic	Description	Main references	Interview question(s)
STRATEGY & GOALS	<i>Strategy</i>	Degree of which purchasing long term strategic plan are defined (considering commercial, regulatory, socio-economic objectives)	Erridge & McCollory (2002); Erridge (2005); Erridge (2007) How can you define the role of procurement in your organization? Are there any specific objectives around which procurement strategy is designed?
	<i>Reporting level</i>	CPO reporting line	Carr & Smeltzer (1997); Johnson & Leenders (2006) Where the Procurement Department is positioned in the organization chart?
	<i>Level of centralization</i>	Degree to which purchasing decision – making and operational activities are executed at a central level	Arnold (1999), Dimitri et al. (2006), Johnson & Leenders (2006), Kim (2007) Which is the percentage of spending which is directly managed and/or in charge to the Procurement Department?
MACROLEVEL	<i>Grouping criteria</i>	Criteria used for grouping purchasing personnel	Mintzberg (1980); Lakemond et al. (2001); Monczka et al. (2009) How are resources grouped in the department? Are employees organized according to specific positions? (e.g. category managers; buying/contracting; p-cards administration; administrative support; accounts payable...)
	<i>Procurement skills</i>	Worker and manager knowledge in the Procurement Department	Carr & Pearson (2002); Tu et al. (2006); Callender & Mc Guire (2007) Which are the skills and competencies purchasing employees must have? Are there education and training programs for procurement professionals?
	<i>Internal integration</i>	Degree of integration of purchasing with other Departments/Directorates	Das & Narasimhan (2001); Monczka et al. (2009) How Procurement Department coordinates with other Departments? How can you define this interaction in terms of type and frequency?
MICROLEVEL	<i>Purchasing recognition</i>	Purchasing's role and capabilities as perceived by others	Carr & Smeltzer (1997, 2000); Cousins et al. (2006) How procurement's role and resources are considered by other Departments?
	<i>Formalization</i>	Degree to which decisions and working relationships are governed by formal rules, standard policies and procedures	Stanley (1993); Leenders et al. (2006) To what extent are purchasing activities formalized in manual or similar tools?
	<i>Span of control</i>	Type of activities executed by the Procurement Department	OECD (2007); Erridge (2002); Leenders et al. (2006); Harland et al. (2009) Which type of activities are directly executed by Procurement Department?
PROCESS	<i>Authority</i>	Degree of decisional authority on purchasing activities	Stanley (1993) Which level of authority the Procurement Department has on purchasing activities (e.g. operational execution, decisional power, supportive role...)

PERFORMANCE	<i>Performance</i>	Areas and type of performance measured (cost, quality, time, compliance, innovation, sustainability)	Rendon (2008), Afonso & Fernandez (2006), Cadwell et al. (2005)	Do you have a purchasing performance measurement system? Which types of performance are being measured? Which of these performances are aligned with targets?
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B. Coding approach

The 0-100 scoring method has been chosen in order to exploit a clear comparative scale for each case, but it was not intended as an absolute evaluation.

Table B1 show the detailed breakdown structure of this analytical approach used for assigning the score for each construct:

Table B1: Scoring method structure and breakdown

Strategy - Commercial goals (40)	Value for money (0-20) Efficiency (0-20)
Strategy - Regulatory goals (30)	Internal compliance (0-15) External compliance (0-15)
Strategy - Socio-economic goals (30)	Social development (0-10) Economic development (0-10) Environmental protection (0-10)
Level of centralization (scoring resulting from the ratio)	(spending centrally managed by the procurement department) / (total amount of spending of the authority)
Reporting level (scoring resulting from one of the options)	Staff second (or less) level (10 - 20) Department third level (30 - 40) Department second level (50 - 60) Staff first level (70 - 80) Department first level (90 - 100)
Grouping criteria (scoring resulting from one of the options)	No grouping criteria (10) Process criteria (20 - 30) Internal client criteria (40 - 50) Category management (60 - 100, according to the level of category aggregation)
Procurement skills (scoring resulting as sum of)	CPO education (0-20) Minimum level of education required for procurement staff (0-10)

	<p>Training programs (0-20)</p> <p>Overall job competence of buyers (0-30)</p> <p>Ideas sharing mechanisms (0-20)</p>
Internal integration (scoring resulting as sum of)	<p>Communication between departments (0-40)</p> <p>Collaboration between departments (0-60)</p>
Procurement recognition (scoring resulting as sum of)	<p>Procurement is recognized equal to other departments (0-40)</p> <p>Procurement's views and proposal are considered valid by another department (0-40)</p> <p>Procurement performance measured with a long-term focus (0-20)</p>
Span of control (scoring resulting as sum of)	<p>Procurement involvement in strategic and planning activities (0-40)</p> <p>Procurement involvement in sourcing activities (0-30)</p> <p>Procurement involvement in operational activities (0-30)</p>
Authority (scoring resulting as sum of)	<p>Procurement drives strategic and planning activities (0-40)</p> <p>Procurement drives sourcing activities (0-30)</p> <p>Procurement drives operational activities (0-30)</p>
Process formalization (scoring resulting as sum of)	<p>Process - map diagram (0-20)</p> <p>Process procedure and activities manual (0-40)</p> <p>Clear job and responsibility definition (0-40)</p>
Performance measurement system - Structure (50)	<p>KPIs Cost (0-10)</p> <p>KPIs Quality (0-10)</p> <p>KPIs Time (0-5)</p> <p>KPIs Compliance (0-10)</p> <p>KPIs Sustainability (0-10)</p> <p>KPIs Innovation (0-5)</p>
Performance measurement system - Performance (50)	<p>Cost performance (0-10)</p> <p>Quality performance (0-10)</p>

	Time performance (0-5)
	Compliance performance (0-10)
	Sustainability performance (0-10)
	Innovation performance (0-5)

We also provide a detailed explanation for the strategy dimension.

“Commercial goals” for “procurement goals” can be assigned up to 40 points because, within commercial goals, there are sub categories of fall “Value for money” and “savings/efficiency”, which are the most relevant goals for public procurement (according to both literature and practical evidence), so we assigned 20 points each (by answering the question: “how does the local government set yearly goals for value for money in procurement activities and specific savings?”). By contrast, for socio-economic goals, we have three specific categories (social, economic, environmental), that may potentially be less relevant for local government compared to value for money and efficiency, but of the same level of importance for the “socio-economic goals” sub-dimension. That’s why we have assigned to these 10 points each when analyzing the cases. Same as regulatory goals, with internal and external compliance being more relevant goals than socio – economic ones (for local governments), but less than commercial ones.

The following Table reports an example of coding for the construct “Strategy” in the WCCY and IDMZ cases:

Table B2: Example of coding and scoring for strategy in WCCY and IDMZ

		CCY	DMZ
Commercial goals (40)	Value for money (0-20)	20	N
	Efficiency (0-20)	20	20
Regulatory goals (30)	Internal compliance (0-15)	15	N
	External compliance (0-15)	15	N
Socio-economic goals (30)	Social development (0-10)	10	N
	Economic development (0-10)	10	N
	Environmental protection (0-10)	10	N
Total		100	20

N = not present