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Enabling factors for the diffusion of circular economy and their impacts on sustainability

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Circular Economy is a new industrial paradigm aimed at overcoming the linear "take, make, disposal" model, which "relies on large quantities of easily accessible resources and energy, and as such is increasingly unfit to the reality in which it operates". The Circular Economy can be defined as "a regenerative system in which resource input and waste, emission, and energy leakage are minimised by slowing, closing, and narrowing material and energy loops". Slowing resource loops is about extending the utilization period of products, for instance through long-lasting design and maintenance operations, to slow down the overall flow of resources. Closing resource loops is about ensuring circular flows of resources by closing the loop between post-use and production. Narrowing resource loops is about reducing the resource use associated with products and production process. The Circular Economy model promises to reduce the environmental and social impact of current production and consumption activities (Kirchherr et al., 2017) and, simultaneously, provide companies with relevant environmental benefits. Hence, the Circular Economy is fully integrated into the broader sustainability paradigm.

Recently, Circular Economy has become increasingly debated at business and practitioners' level, claiming for profound changes in managerial and organizational practices of companies, such as energy, materials, and resources usage, as well as for reducing the environmental impacts of their activities. The above-mentioned Circular Economy principles claim that firms do not limit just to retrieve products at the end of their life cycle and reintegrate the parts into the value chains (closing resource loops), but also develop products that use less raw materials, have a longer life, and are easy to be maintained, repaired, reused, and disassembled (slowing and narrowing resource loops).

A variety of strategies can be exploited for supporting the transition towards the Circular Economy, such as reverse logistics and closed-loop supply chains, industrial symbiosis, design for disassembly and recyclability, green product design, environmental innovation, among the others. Despite their potentiality, these strategies appear not fully implemented in practice. Hence, there is an urgent need to identify how to promote their application.

To this aim, it is critical to study the enablers for the Circular Economy from the company perspective and their impact outside the company's boundaries (Albino et al., 2016). Several enablers have been identified in the literature that seem particularly promising for enhancing Circular Economy and Sustainability: supply contracts, business models design and innovation, green technological innovations, green consumer behavior, platformization – i.e., how firms can organize social and economic interactions via online platforms to achieve greater circularity, for example through dedicated sharing platforms – among the others (Urbinati et al., 2021). However, even though a high number of guidelines for governments and policymakers towards Circular Economy are currently available, there is still a lack of consolidated managerial guidelines – at the levels of single company, network of companies, supply chains, industrial ecosystems, etc. – able to push firms towards the implementation of Circular Economy. In

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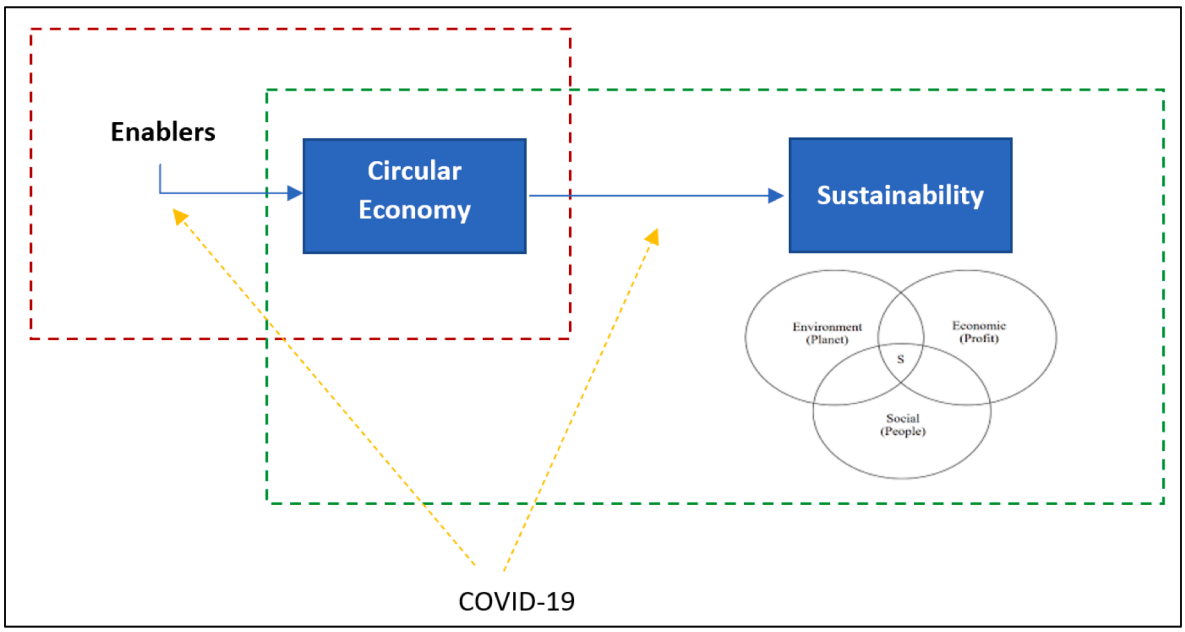

Fig. 1. Research framework.

addition, the extent to which the enablers of Circular Economy also impact the triple bottom line, i.e., economic (or profit), environment (or planet), and social (or people) dimensions of Sustainability, still deserves further investigation (Hussain and Malik, 2020). Indeed, Circular Economy is often seen as a new industrial approach for achieving Sustainability, although it has mostly a focus on the economic and environmental aspects.

Furthermore, investigating the enabling factors for the diffusion of Circular Economy, as well their impacts on Sustainability, is nowadays a relevant issue in the light of the health emergency caused by the Covid-19 pandemic, which has caused a disruption of the scenario with unpredictable effects that reverberate on civil society, businesses, and institutions. The Covid-19 pandemic contributed to the emergence of new environmental challenges – e.g., disposing of the significant amount of sanitary wastes such as masks and gloves – that should be tackled with a Circular Economy-oriented perspective. Among the many negative aspects that have emerged, however, there are some positive ones such as the reduction of pressure on the environment and atmospheric pollution, both for poor mobility and for the reduction of traffic. Numerous, albeit preliminary studies discuss or present data on the controversial relationship between air pollution levels and the pandemic (e.g., Wu et al., 2020). Thus, the health emergency caused by Covid-19 is strongly linked to Sustainability issues. In this sense, the pandemic represents a real contextual disruption that stimulates reflection on the role of enablers pushing policymakers, businesses, and individuals to exercise for sustainable recovery and Circular Economy transition.

Starting from the above premises, we propose a research framework that takes stock of the existing research at the intersection between the fields of Circular Economy and Sustainability from the perspective of enablers and in a contextual situation characterized by a global pandemic (Fig. 1).

Accordingly, with this call for papers we solicit to examine the above-mentioned – but not limited to – enablers of Circular Economy and Sustainability in companies and to evaluate their impact on the companies' external boundaries, also in the light of the health emergency caused by Covid-19. Particularly welcome are specific theories and applications that address the open questions above-mentioned.

Topics of interest include, but are not limited to, the following:

- Enablers of Circular Economy implementation at the company and business ecosystem level
- Impact of Circular Economy enablers outside the firm's boundaries
- Impacts of Circular Economy on the triple bottom line of Sustainability
- Impacts of Circular Economy strategies on the company performances
- Impacts of Covid-19 pandemic on Circular Economy enablers
- How the Covid-19 pandemic has affected the contribution of Circular Economy to the triple bottom line of sustainability

A detailed submission guideline is available as "Guide for Authors" at: https://www.journals.elsevier.com/resources-conservation-and-recycling-advances. All manuscripts and any supplementary material should be submitted through the online editorial system (https://www.editorialmanager.com/rcradv). The authors must select "SI: CE" in the submission process.

Important Dates

- Full paper submission deadline: October 31, 2022
- Final decision notification: April 30, 2023
- Publication: As soon as accepted (VSI)

Declaration of Competing Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

Albino, V., Fraccascia, L., Giannoccaro, I., 2016. Exploring the role of contracts to support the emergence of self-organized industrial symbiosis networks: an agent-based simulation study. J. Clean. Prod. 112, 4353–4366.
Hussain, M., Malik, M., 2020. Organizational enablers for circular economy in the context of sustainable supply chain management. J. Clean. Prod. 256, 120375.

Kirchherr, J., Reike, D., Hekkert, M., 2017. Conceptualizing the circular economy: an analysis of 114 definitions. Resour. Conserv. Recycl. 127, 221–232.
Urbinati, A., Franzò, S., Chiaroni, D., 2021. Enablers and barriers for circular business models: an empirical analysis in the Italian automotive industry. Sustain. Prod. Consum. 27, 551–566.
Wu, X., Nethery, R.C., Sabath, M.B., Braun, D., Dominici, F., 2020. Air pollution and COVID-19 mortality in the United States: strengths and limitations of an ecological regression analysis. Sci. Adv. 6, eabd4049.