

THE VALUE OF DYNAMIC CAPABILITIES FOR CIRCULAR-ORIENTED INNOVATION AT THE ORGANIZATIONAL LEVEL

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Purpose: The concept of Circular-Oriented Innovation represents a new, valuable, and growing stream of research embedded in management literature. The conceptualization of such innovations indicates that they are involved in the systemic creation and implementation of environmental changes in all dimensions of companies' activities (process, product, organization, business model). Since the effective implementation of sustainable practices requires the development of resources, skills, and competencies/capabilities, especially dynamic capabilities, the paper aims to identify the dynamic determinants of Circular-Oriented Innovation at the organizational level.

Design/methodology/approach: The paper is theoretical and cognitive and is based on an in-depth literature review. The developed conceptual model considers the direct and indirect relationships linking a company's propensity and ability to act for Circular-Oriented Innovation with three types of dynamic capabilities (i.e., relation, absorption, and digitalization capabilities), the organizational processes underlying their building, and elements of the organizational context (leadership, organizational structure, and culture, as well as a long-term strategic vision for the company's development).

Findings: The paper adds to the existing literature and contributes to understanding Circular-Oriented Innovation from the dynamic capability perspective. In addition, they indicate the need for further scientific research that can use the proposed conceptual framework to formulate research proposals and then develop (in the future) testable research hypotheses necessary for empirical verification of this conceptual model.

Originality/value: The critical scientific contribution of the paper is the development of a research framework that goes well beyond existing studies on Circular-Oriented Innovation and Circular Business Model Innovation. The proposed extension of the model's theoretical structure to include propensity (representing behavioral and structural aspects) and ability (i.e., practices, routines, and actions) indicates that a paradigm shift in how companies do business requires developing both propensity and ability to act for Circular-Oriented Innovation, through shaping the structural and organizational context, on the one hand, and simultaneous building of dynamic capabilities, on the other.

Keywords: Circular-Oriented Innovation, propensity-ability perspective, dynamic capabilities, theoretical framework.

Category of the paper: Research paper.

1. Introduction

The concept of Circular Economy (CE) represents a strategic shift in the economic paradigm (Prieto-Sandoval et al., 2019; Bocken et al., 2019; Vence, Pereira, 2019) and marks the replacement of the traditional linear model based on ‘take-make-use-dispose’ with a ‘make-remake-use-return’ logic (Parida et al., 2019 after Sandberg). The heart of the Circular Economy is the creation of feedback cycles: resource-product-resource, according to the classic 3R (reduce, recycle, reuse) principle (Liu, 2012; Sehnem et al., 2022). Closing the material flow loop is possible by undertaking activities such as sharing, remanufacturing, and restoration, as well as the combination of processes for maintenance and cascading, reparation and upgrading, product, component, and material reuse, renovation, remanufacturing and refurbishment throughout the product value chain, and recycling (Kirchherr et al., 2017; de Jesus et al., 2021; Kanda et al., 2021; Fernandez de Arroyabe et al., 2021). CE refers to realizing sustainable development’s economic and environmental goals (Pieroni et al., 2019). It incorporates the assumptions underlying such concepts as Boulding’s (1966) *The Economics of the Coming Spaceship Earth*, Ayres and Kneese’s (1969) *Industrial Ecology*, Stahel’s (1997) *Performance Economy*, Biomimicry by Lovins et al. (1999), McDonough and Braungart’s (2002) *Cradle to Cradle Concept*, *Regenerative Design* and *The Blue Economy Theory*, among others.

The increasing number of publications on the Circular Economy appearing in recent years (Pieroni et al., 2019; Bocken et al., 2019; Brown et al., 2019; Geissdoerfer et al., 2020; Reim et al., 2021; Johnson, 2022; Sandberg, 2023) indicates the growing practical and academic importance of this concept. Initiatives promoting CE are increasingly being introduced not only in European Union countries but also by the governments of China, Japan, the United Kingdom, and Australia (Kanda et al., 2021; Fernandez de Arroyabe et al., 2021). Academic research, in turn, provides many valuable insights into implementing sustainable practices both at the macro and mesoeconomic level, based on the concept of industrial symbiosis and at the company level (Prieto-Sandoval et al., 2019; Franklin-Johnson et al., 2016).

Despite such an extensive body of literature on the Circular Economy, many important research questions still need to be answered. In particular, they concern the determinants of circular activities at the organizational level. Following this research perspective, many authors emphasize the critical role of innovation and argue that it is ecological innovation that is essential for companies to pursue sustainable practices (de Jesus and Mendonça, 2018; de Jesus et al., 2021; Sehnem et al., 2022). However, incorporating the goals and principles of CE into organizational practice requires a systemic approach to a company’s eco-innovation activities, which eludes the classical conceptualization of eco-innovation. Therefore, a new and valuable is the analysis of Circular Business Models (CBM), and in particular, the so-called Circular Business Model Innovation (CBMI) or otherwise Circular-Oriented Innovation (COI). The term

COI comes down to undertaking ‘coordinated activities that integrate CE goals, principles, and recovery strategies into technical and market-based innovations’ (Brown et al., 2019, p. 3) and includes strategies for designing circular products, introducing sustainable business models, and configuring existing value networks (Blomsma et al., 2019; Brown et al., 2019; Johnson, 2022).

Since Circular-Oriented Innovation is concerned with the systemic creation and implementation of eco-innovation in all dimensions of companies' activities (process, product, organization, business model) (Brown et al., 2019; Brown et al., 2021), it is, therefore, essential to understanding which specific capabilities are necessary for COI at the organizational level. The paper makes two critical methodological choices to answer the above research question. First, it is assumed that the concept of Circular-Oriented Innovation can be considered in terms of both the propensity and the ability to act (built on such propensity) for companies to pursue sustainable practices, which not only goes well beyond the existing CBMI studies but, importantly, makes it possible to analyze COI concerning companies' actual circular business abilities. Secondly, the logic of the economic paradigm shift indicates that not only the ‘static’ resources and skills that a company possesses, according to the Resource-Based View of the Firm (RBV), but also – or primarily – the ‘dynamically’ conceptualized capabilities that condition the undertaking of practical circular activities should be examined. Following the relevance of this research question, as highlighted in the literature (Prieto-Sandoval et al., 2019; Fernandez de Arroyabe et al., 2021; Stucki et al., 2023), the main objective of this paper is to identify the dynamic determinants of Circular-Oriented Innovation at the organizational level.

To fulfill the research objective, the paper:

- explains the Circular-Oriented Innovation, a concept that represents a new research area that draws from Sustainability-Oriented Innovation (SOI) literature and includes the progress of research on CE at the organization level (Brown et al., 2019);
- makes a decomposition of the COI concept into a company's propensity and ability to implement sustainable organizational practices based on Innovation Theory;
- assumes – following the Resource-Based View of the Firm, Dynamic Capabilities Theory, Organizational Learning Theory, and Open Innovation Theory as theoretical frameworks – that Circular-Oriented Innovation requires companies to develop dynamic capabilities, i.e., relation, absorption, and digitalization capabilities. This assumption is in line with Eisenhardt and Martin (2000), who characterize dynamic capabilities as concrete and identifiable strategic and organizational processes, and with Teece (2007), who emphasizes that these capabilities not only determine companies' adaptation to a dynamically changing market environment but also enable them to shape it by conducting innovation activities;

- shows – through the developed theoretical framework – that a paradigm shift in how companies conduct business following the 3Rs requires developing both the propensity and the ability to act for Circular-Oriented Innovation, through the shaping of the structural and organizational context, on the one hand, and the simultaneous building of dynamic capabilities, on the other.

2. Theoretical Background

2.1. From eco-innovation to circular-oriented innovation

The debate in the literature on implementing sustainable practices at the organizational level was initially focused on eco-innovation. For example, eco-innovation has been recognized as an essential source of strategic change for companies (Klewitz, Hansen, 2014) and a critical factor in improving their economic and environmental performance (Zhang, Walton, 2017; Cai, Li, 2018). Such an assumption is consistent with the realization of a ‘win-win’ scenario, taking into account both types of benefits and indicating that they arise from the characteristic positive knowledge spillover effects generated by these innovations and the accompanying internalization of adverse environmental impact (Kesidou, Demirel, 2012; Díaz-García et al., 2015). The concept of eco-innovations was developed in the mid-1990s, and one of their first definitions was formulated by Fussler and James (1996), indicating that they are new products, processes, or services that offer value to both the company and consumers while significantly reducing harmful environmental impacts.

Awareness of the momentous importance of eco-innovation has fostered an intensification of academic research. The growing number of studies on the subject has resulted in the emergence of related terms in the literature, i.e., green innovation (Chen et al., 2012; Huang, Li, 2017), environmental innovation (Kammerer, 2009) or sustainable innovation (de Medeiros et al., 2014), whose understanding, however, has not deviated (for the most part) from the logic of eco-innovation. Regardless of the terminological differences, researchers (de Jesus, Mendonça, 2018; de Jesus et al., 2021) agree that eco-innovation is a necessary tool for implementing sustainable practices at the organizational level.

However, introducing even the most radical eco-innovation only sometimes means fully integrating CE goals and principles into the company's long-term development strategy. Indeed, the circular orientation of a company depends more on its ability to create and implement eco-innovation than on separate changes. This is in line with Pieroni et al. (2019) and Sehnem et al. (2022), who point out that the implementation of sustainable practices by companies requires organizational innovation as much as technological or product innovation. In other words, only the art of systemic generation and implementation of eco-innovation enables

companies to change the paradigm of doing business following the 3Rs. Looking for ways to put this assumption into practice, researchers (de Jesus et al., 2021; Bocken et al., 2016) indicate the importance of designing Circular Business Models, which ‘have become an essential means of making the circular economy conducive to application in organizations’ (Sehnem et al., 2022, p. 4).

The conceptualization of a business model stems from the ‘traditional’ logic of how a company generates value and means – in simple terms – the organizational and financial architecture for creating, delivering, and capturing value, leading to competitive advantage and, ultimately, profit (Kanda et al., 2021). However, for a company’s business model to represent a paradigm shift in doing business according to the 3Rs, it must be circular. The essence of the Circular Business Model is to use the company’s abilities to create value not only economically but also socially and environmentally (Pichlak, Szromek, 2022) through eco-design, use of renewable energy sources, minimization of waste, and reuse of goods and extensive use of recycling processes (Linder, Williander, 2017). This is consistent with the notion that a key role of CBM is ‘to incorporate the circular economy principles into a design or redesign of business activities and partnerships and to create a cost and revenue structure that is compatible both with sustainability and with profitability’ (Zucchella, Previtali, 2019, p. 275).

The concept of Circular Business Models assumes that companies can reduce their negative impact on the environment using an alternative proposition for creating, delivering, and capturing value (Reim et al., 2021). Incorporating the circularity imperative into a business model is a strategic choice. It can follow one of the following modes: downstream circular (changing value capture and delivery through new revenue streams and customer interface), upstream circular (changing value creation systems, such as reverse logistics), and full circular (combining upstream and downstream principles) (Urbinati et al., 2017; Pieroni et al., 2019).

The literature emphasizes that a paradigm shift in doing business at the organizational level, leading to the final closure of material flow loops, requires adapting, redesigning, or transforming existing business models (Johnson, 2022) so that they are based on ‘using as little resources for as long as possible, while extracting as much value as possible in the process’ (Geissdoerfer et al., 2020, p. 2). In other words, one can conclude that for companies to pursue long-term growth strategies in line with the CE logic, they should implement the Circular Business Model Innovation.

While Business Model Innovation involves changes in business models (Johnson, 2022), the aim of CBMI is to increase the efficiency of resource and material use (and ultimately close the loop of their flows) by changing perceptions of value (Geissdoerfer et al., 2020; Bocken et al., 2016). Moreover, taking such coordinated action requires the creation and implementation of process, product, and organizational eco-innovations, as well as the design of sustainable business models (Brown et al., 2019; 2021), i.e., making changes in practically every layer of a company’s operation. Relating Circular-Oriented Innovation to the determinants of systemic eco-innovation activities involves decomposing the COI concept.

Such a methodological procedure leading to the separation of a company's propensity and ability to act for COI is a starting point for their further analysis from the dynamic research lenses.

A company's propensity and ability to undertake innovative activities are immanently related concepts. This is consistent with recent work by, for example, Daronco et al. (2022), who emphasize that propensity is an intangible reflection of ability. 'If organizations don't display a propensity for innovation (...), innovation cannot and will not occur' (Dobni, 2006, p. 331). The notion of a company's ability to innovate is the substance of Innovation Theory. Researchers argue that innovation ability can be considered concerning both technical and non-technological innovations (Ngo, O'Cass, 2009), has a multidimensional character (Hogan et al., 2011), and contributes significantly to the achievement of specific organizational outcomes (Calantone et al., 2002; Dangelico et al., 2017). In turn, 'the propensity to innovate is more closely linked to an organization's DNA and relates to the degree to which the firm will achieve a state of innovativeness' (Daronco et al., 2022, p. 5).

Drawing from Innovation Theory, a company's propensity to pursue sustainable practices is derived from interrelated organizational characteristics and attributes (Daronco et al., 2022), including leadership, organizational structure, and culture, as well as a long-term strategic vision for the company's development. On the other hand, a company's propensity for COI refers to taking practical action through coordination and integration, as well as the transformation and recombination of its resources, skills, and competencies to meet the challenges of adopting the CE paradigm at the organizational level (Johnson, 2022).

When analyzing the propensity for COI, the involvement of the CEO comes to the fore. Vaccaro et al. (2012) argue that the leaders' role is crucial in creating an intra-organizational context conducive to experimentation and introducing flexible organizational systems and structures. In addition, leaders can stimulate the propensity to pursue sustainable practices by formulating a long-term vision for the company's strategic development, developing an effective incentive system, and building an eco-innovative organizational culture. Defined by leaders and communicated to employees, a clear and integrated shared 'green' vision sets the strategic goals and aspirations of the CEO regarding the company's future development (Jansen et al., 2008). Moreover, it becomes part of the organizational identity and determines the scope and expected results of the eco-innovation activities undertaken by the company (Chen et al., 2014). Finally, the critical role of leaders' attitudes, skills, attributes, values, and behaviors also manifests itself by reducing the complexity and uncertainty associated with the implementation of closed-loop strategies, building a climate of tolerance for failure and risk, i.e., creating a 'green' organizational culture (Prieto-Sandoval et al., 2019; Vence, Pereira, 2019).

Unlike propensity, a company's ability to pursue sustainable practices (built on such propensity) requires taking practical actions and is therefore determined by the development of specific resources, skills, and competencies/abilities, especially dynamic capabilities, which addresses the next section of the paper.

2.2. The origin of dynamic capabilities

The examination of resources, skills, and competencies/capabilities that facilitate the development and implementation of Circular-Oriented Innovation was initiated by Barney's (1991) work on the Resource-Based View of the Firm. This concept captures the firm as a set of diverse resources that distinguish it from its competitors. According to the logic of RBV, a company's resources can be tangible (infrastructure) or intangible ('know-how') (Prieto-Sandoval et al., 2019; Chaudhuri et al., 2022), and to be a natural source of competitive advantage, they should be valuable, rare, imperfectly imitable and non-substitutable (VRIN Framework), as well as durable and not easily traded.

An extension of the RBV is the Competence-Based Theory of the Firm, according to which gaining and maintaining competitive advantage is determined not only by the company's resources but also (or primarily) by the competencies it develops. Competencies, particularly core competencies, have strategic value, implying the need to update them constantly (Prieto-Sandoval et al., 2019). Some researchers use the terms competencies and capabilities interchangeably, defining them as bundles of skills necessary to organize resources (Doran and Ryan, 2016), the ability to achieve things by using and coordinating a set of tangible and intangible resources (Dangelico et al., 2013), capabilities that result from repeatedly performing activities in an organization (del Río et al., 2016) or the ability to deploy resources through the use of organizational processes (Albino et al., 2012). These processes are company-specific and can be developed (over time) by combining different resources and capabilities (Amit, Schoemaker, 1993).

According to the impact of capabilities on the development of the company, one can make a distinction between dynamic and operational (ordinary, substantive) capabilities (Teece et al., 2016; Helfat, Peteraf, 2003), captured as the abilities to solve emerging problems (Zahra et al., 2006) through the ongoing use of existing resources, processes and systems.

The most commonly cited definition of dynamic capabilities in the literature is that by Teece et al. (1997), according to which they represent the abilities to build, integrate, and reconfigure internal and external skills, resources, and functional competencies held within an organization to meet the demands of a rapidly changing market environment. Teece (2007, p. 1319) further emphasizes that 'dynamic capabilities enable business enterprises to create, deploy, and protect the intangible assets that support superior long-run business performance', meaning that these capabilities not only enable a company to adapt to a dynamically changing market environment but also to shape it, by carrying out effective innovation activities.

Following the logic proposed by Teece et al. (1997), Helfat and Peteraf (2003) emphasize that dynamic capabilities change the company's resource base and must be embedded in it and repeatable. Eisenhardt and Martin (2000) capture dynamic capabilities in terms of processes (as concrete and identifiable strategic and organizational processes), while Zollo and Winter (2002) define them in the context of organizational routines, referring directly to the evolutionary perspective on change described by Nelson and Winter (1982). Finally, other conceptualizations of dynamic capabilities characterize them much more broadly as the orientation (Wang, Ahmed, 2007) or potential (Barreto, 2010) of an organization, i.e., an aggregate multidimensional construct consisting of various interrelated components (capabilities).

Despite the different conceptualizations of dynamic capabilities, most researchers agree on two fundamental issues related to the nature of these capabilities. The first is the priority role of organizational learning processes in building and developing dynamic capabilities (Teece et al., 1997; Zollo, Winter, 2002; Teece, 2007). Organizational learning manifested both in the form of individual employee skills and in the form of organizational knowledge (embedded in activity patterns, routines, or the logic of actions taken in the company), can prevent the occurrence of so-called 'strategic blindspots' (Teece et al., 1997), and thus enable the company to overcome barriers to innovative activity by strengthening existing and building new organizational capabilities (Johnson, 2022). The second point emphasized in the literature is the assumption that dynamic capabilities are difficult to imitate and, as in the resource concept, are heterogeneous since they are usually built by companies rather than bought on the market (Makadok, 2001; Teece et al., 1997). The need to develop such capabilities requires two subsequent organizational processes: the coordination/integration of the company's existing resources (resulting in a new resource base) and the reconfiguration of resources (their transformation and recombination) (Teece et al., 1997). Expanding on the above concept, Teece (2007) argues that, along with the organizational learning processes, coordination and reconfiguration represent the potential for resource orchestration and are essential for building dynamic capabilities.

The literature also emphasizes that all the organizational processes identified above are essential for Circular-Oriented Innovation. Organizational learning processes facilitate not only the transformation of existing but also the design of new business models for extending product life cycles and implementing recycling strategies to close material flow loops (Bocken et al., 2019) while creating and delivering as much value as possible (Geissdoerfer et al., 2020). Moreover, considering these processes from a knowledge-based perspective links them directly to Organizational Ambidexterity. According to a pioneering publication by March (1991), the essence of knowledge exploration is the development of fundamentally new competencies, for example, through radical innovations and new business models, while the nature of knowledge exploitation remains the improvement of competencies held within companies, leading to the incremental changes. In contrast, concerning coordination/integration and

resource reconfiguration procedures, both Huang and Li (2017) and Salim et al. (2019) argue that they are catalysts for different types of eco-innovation in companies. In addition, Sandberg (2023) points out that resource orchestration processes, not only intra- but also inter-organizational, enhance the creation of sustainable value. This is particularly relevant in the context of Circular-Oriented Innovation, as it allows the broad analysis to include the collaborative relationships undertaken to implement sustainable practices within companies.

3. Dynamic capabilities for Circular-Oriented Innovation – A Conceptual Framework

The literature review indicates that implementing Circular-Oriented Innovation requires the development of specific firms' capabilities to respond to the dynamically changing environment in which they operate (Prieto-Sandoval et al., 2019; Fernandez de Arroyabe et al., 2021; Stucki et al., 2023). The present study assumes that among such capabilities can be distinguished relation, absorption, and digitalization capabilities, as illustrated in Figure 1. Moreover, the developed conceptual framework points out the proposed decomposition of the COI concept, which seems more representative because it indicates that: (1) not all companies have the same circular business abilities; (2) having a mere propensity, or intention, for companies to pursue sustainable practices is not enough for COI; and finally (3) building dynamic capabilities is immanently embedded in the structural and organizational context, and thus requires developing the propensity to incorporate CE goals and principles into organizational practice.

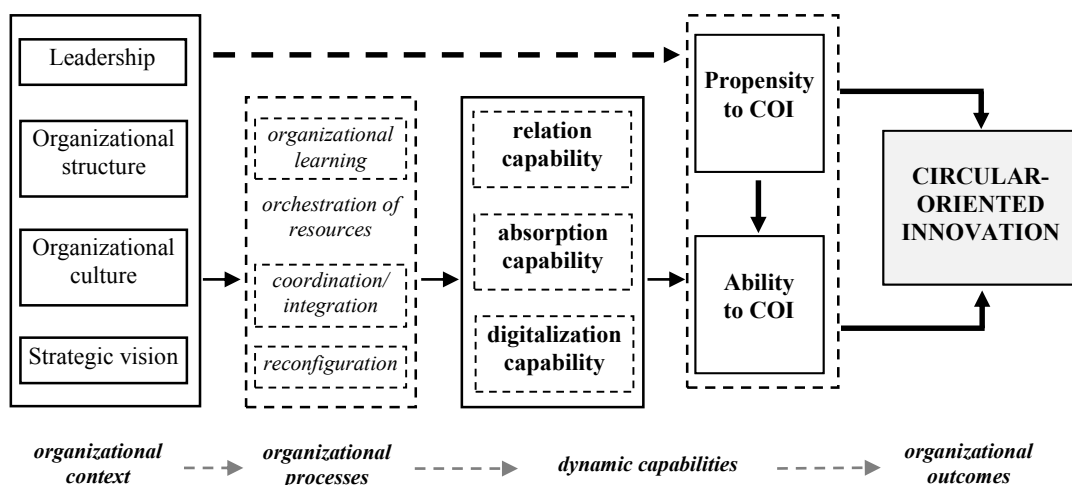


Figure 1. Theoretical framework.

Critical to Circular-Oriented Innovation is relation capability, which leads to achieving 'synergy with relevant stakeholders in the production chain in which the circular economy is being executed' (Sehnem et al., 2022, p. 9). Collaboration contributes to knowledge and

information sharing, conflict management, promoting trust and generating value in companies, leading to improved organizational performance (Czakon, 2009). Researchers (Brown et al., 2021; Sandberg, 2023) emphasize that collaboration is a significant factor in a company's success when shifting from linear to circular practices. When analyzing the impact of relation capability on Circular-Oriented Innovation, some (Johnson, 2022) refer to the Open Innovation paradigm. This concept emphasizes a company's broad interaction with customers, suppliers, research institutions, business partners, and competitors. Open Innovation was first described by Chesbrough (2003), who relates this concept to the intentional (purposeful) inflow and outflow of knowledge, i.e., to all types of innovative activity that extend beyond organizational boundaries. Eisenreich et al. (2021) introduce the concept of Open Circular Innovation and identify the benefits that can be gained by companies seeking to implement circular initiatives (by accessing the knowledge and expertise of various stakeholders and getting their acceptance for the subsequent launch of eco-innovations).

Another capability necessary for Circular-Oriented Innovation is absorption capability, i.e., the ability of a company 'to recognize the value of new, external information, assimilate it, and apply it to commercial ends' (Cohen, Levinthal 1990, p. 128). As Wang and Ahmed (2007) point out, absorption capability is inherently dynamic. Zahra and George (2002) argue that it determines the creation and use of knowledge necessary for building organizational capacity. It also provides competitive flexibility for companies operating in dynamically changing markets. If identifying and assimilating new and valuable knowledge is the basis for conducting effective innovation activities, it is also crucial for Circular-Oriented Innovation (cf. Stucki et al., 2023). Moreover, as Sehnem et al. (2022) convincingly argue, the absorption capability stimulates the innovation-supported economy transformation into a new and eco-efficient circular-oriented system.

Circular-Oriented Innovation, moreover, requires new disruptive technological solutions immanent to Industry 4.0 (i.e., Big Data, 5G, IoT, 3DP, Blockchain, et al.). Suchek et al. (2021) point out that using 3D technologies improves the efficiency of the recycling processes. Advanced digital technologies are essential for driving change throughout the value creation chain (Stucki et al., 2023), and their use can close material flow loops through increased resource efficiency (Antikainen et al., 2018). Adopting a digital orientation catalyzes companies to acquire new skills, competencies, and technical knowledge (Chaudhuri et al., 2022), and enables sustainable environmental and socioeconomic benefits (Bag et al., 2020). Hence, referring to Reim et al. (2021, p. 2754), the last of the capabilities needed to COI at the organizational level is digitalization capability, which 'defines how companies utilize data and analytics to develop increased product lifecycle knowledge'.

The conceptual view of Circular-Oriented Innovation proposed in this paper indicates that a company's ability to pursue sustainable practices requires building and developing dynamic capabilities, including relation, absorption, and digitalization. However, these capabilities must be considered in collaboration. Establishing inter-organizational relationships results in access

to external knowledge, but with absorption capability, a company can assimilate and utilize it effectively. Similarly, the application of new technologies that support the undertaking of circular initiatives requires the recognition of the potential for their value and, therefore, developing absorption capability. In turn, absorption capability – embedded in organizational learning processes – is primarily determined by building intra-organizational relationships and is thus linked to so-called ‘internal’ relation capability. In summary, the incorporation of CE goals and principles into organizational practice - as a central reference point for the company’s long-term strategic development vision, embedded in the organizational culture and structure, and clearly defined and communicated by CEO – indicates the potential for companies to gain actual environmental, social and economic benefits, and as a result, achieve and maintain a sustainable and ‘renewable’ competitive advantage (Geissdoerfer et al., 2020).

4. Conclusion

The need, emphasized by many researchers, to integrate CE goals and principles into organizational practice is influencing the growing importance of the Circular-Oriented Innovation concept. It justifies undertaking research in this new research area. Such innovations – through the conceptualization and adoption of new business models (Geissdoerfer et al., 2020), as well as the adaptation, redesign, or transformation of existing ones (Johnson, 2022) – lead to increased efficiency of resources and the closing of material flow loops, thanks to a change in the approach to the entire process of generating economic value in companies (Pieroni et al., 2019). However, the systemic creation and implementation of eco-innovation in all dimensions of companies’ activities (Brown et al., 2019; 2021) can be risky, especially when CEOs lack experience working with the new circular business model (Johnson, 2022). Therefore, Circular-Oriented Innovation requires developing specific resources, skills, and competencies/abilities, including dynamic capabilities.

The paper’s main objective was to identify the dynamic determinants of Circular-Oriented Innovation at the organizational level. Based on the literature review conducted, relation, absorption, and digitalization capabilities are crucial for COI. In the face of increasing environmental pressures and the legitimacy of companies’ implementation of sustainable practices, inter-organizational collaboration is becoming increasingly important. Bocken et al. (2014, p. 43) note that ‘value is no longer created by firms acting autonomously, but by firms acting together with parties external to the firm through informal arrangements or formal alliances’. Similarly, a systemic change in the logic of how modern companies do business requires an open mindset (Eisenreich et al., 2021; Chaudhuri et al., 2022), not only concerning the assimilation of new organizational knowledge (absorption capability) but also the need for new and advanced digital solutions (digitalization capability) to support the adoption of the CE paradigm.

To conclude, the paper is theoretical and cognitive. Its main scientific contribution is developing a research framework beyond existing studies on Circular-Oriented Innovation and Circular Business Model Innovation. Since the context of dynamic capabilities for Circular-Oriented Innovation has yet to mature sufficiently, the formulation of research proposals, which provide a rationale for developing testable research hypotheses in the future, was deliberately abandoned. Instead, the proposed conceptual separation of the behavioral and structural nature of the propensity for COI from the practices, routines, and activities that make up the ability to innovate highlights an important practical implication, pointing to the fundamental role of the organizational context in building a company's propensity to incorporate CE goals and principles into organizational practice.

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