How to close the loop? Organizational learning processes and contextual factors for small and medium enterprises' circular business models introduction[1]

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Abstract

Frame of the research: *The paper is framed under the organizational learning (OL) theory, to investigate the circular economy (CE) transition of small and medium enterprises (SMEs).*

Purpose of the paper: *This paper focuses on the identification of enabling factors and processes able at influencing the introduction of circular business models (CBMs) in SMEs, with a specific attention toward OL processes.*

Methodology: *In the light of grounded theory, the study offers an interpretative analysis of focus group discussions among Italian construction SME managers.*

Results: *Four key OL contextual factors - external environment, supply chain context, organizational features, and culture - appear to favor the application of CBM-oriented intraorganizational and interorganizational learning processes among SMEs.*

Research limitations: *The paper's limitations are mainly linked to a single-context analysis and the qualitative approach to the investigation.*

Practical implications: *We identify OL processes to be encouraged among SMEs for CE application, the related dynamics, as well as the contextual factors to be managed in the CE transition.*

Originality of the paper: *The paper's originality resides in the disclosure of the Italian context as one of the most advanced EU countries in the CE, and in the analysis of its the related traditional construction sector evolution process.*

Key words: organizational learning; sustainable management; circular economy; supply chain; small and medium enterprises

1. Introduction

Scholars and practitioners have paid attention to the circular economy (CE) as an alternative to linear production (Ghisellini *et al.*, 2016) focused on a balanced use of environmental resources (Ellen MacArthur Foundation, 2015). Recently, CE studies have focused on understanding how organizations (Ünal *et al.*, 2019) - including small and medium

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enterprises (SMEs) (Dey *et al.*, 2020) - could holistically address the circular transition. Among industrial sectors, the construction sector attracts the European Union (EU) legislators' attention, as it is responsible for "25% of solid waste generated in the world" (Benachio *et al.*, 2020, p. 121046); hence, scholars increasingly analyze this sector for waste reduction and material value maximization solutions (Hossain *et al.*, 2020), and for developing business models aimed at introducing CE within organizations, - the circular business models (CBMs) (Geissdoerfer *et al.*, 2020), - particularly among SMEs (Prieto-Sandoval *et al.*, 2019). Recent studies highlight the need to identify CBMs in the construction sector (Benachio *et al.*, 2020), and contextual factors that might contribute to seeking a wider applicability of CE-related interorganizational processes (Dzhengiz, 2020), and organizational solutions (Pieroni *et al.*, 2019).

The study focuses on SMEs and traditional sectors, which present peculiar structural and cultural barriers that need to be addressed (Rizos *et al.*, 2016; Ünal *et al.*, 2019). Specifically, we explore the construction sector, as it represents an inherently traditional sector, yet "undergoing important transformation processes, driven by (..) greater attention to environmental sustainability" (European Observatory for Clusters and Industrial Change, 2019, p. 7). Recent studies emphasize the relevance of addressing "how the current business models of construction companies can adapt to this change" (Benachio *et al.*, 2020, p. 10).

Under these circumstances, the study aims at contributing to the CE discussion through the qualitative identification of OL contextual factors and organizational processes positively influencing CBM implementation. Precisely, our analysis focuses on Italian construction SMEs.

We identified the OL theoretical framework as the activation of intraorganizational, and interorganizational learning supports an effective sustainability-oriented evolution (Dzhengiz, 2020). The OL literature offers well-established conceptualizations of contextual factors influencing OL (e.g., Fiol and Lyles, 1985), including CE-oriented OL processes.

This paper also addresses recently-proposed OL research questions, such as the investigation of SMEs' OL processes within countries where SMEs play a dominant role (Chikweche and Bressan, 2018) to "provoke critical reflection that results in action and the development of new practice for future and current managers" (Anderson *et al.*, 2020, p. 30). Furthermore, we answer the call for the identification of "factors that facilitate or inhibit" knowledge transfer (Argote and Miron-Spektor, 2011), knowledge creation, and retention processes (Argote, 2011). Five propositions provide more granular perspectives on the study's theoretical background, to guide the analysis.

2. Theoretical background

2.1 Organizational learning processes and circular economy

OL is widely analyzed by scholars and practitioners in psychology, education, management science, and organization theory, as it searches

a better understanding of the "social phenomena that are considered the core of organizational learning" (Easterby-Smith, 1997, p. 3). Thus, OL literatures result in multiple definitions ranging from organizational actors' cognitive and behavioral changes (e.g., Crossan *et al.*, 1999), to knowledge-related dynamics across organizational levels (e.g., Nonaka, 1994). In this sense, different focuses, - e.g., antecedents, stages of learning, - and levels of analysis (Mazutis and Slawinski, 2008) have fragmented the research.

In this study, we specifically consider OL as knowledge creating, transferring, and retaining processes (Argote, 2011) moving across the individual, group, organizational (Crossan *et al.*, 1999; Nonaka, 1994), and interorganizational level, thus identifying a multi-level set of processes. This conceptualization offers several connections with the knowledge management field, contributing to a more effective outlining of innovative and radical evolutions (Berends *et al.*, 2016; Sanz-Valle *et al.*, 2011).

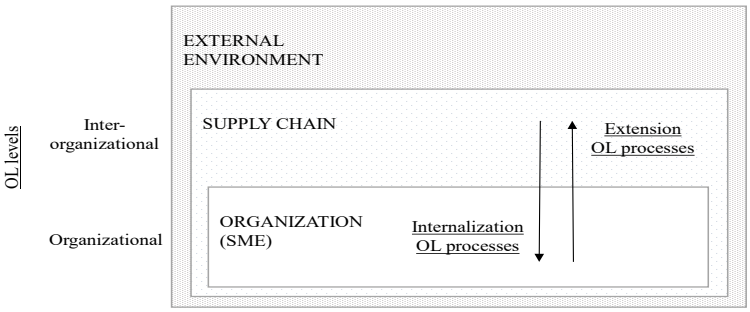
At the intraorganizational level, OL takes place via knowledge creation and transfer processes within structured and practice-oriented environments, including internal working groups, and communities of practice (Wenger, 1999). Internal training activities and knowledge-sharing tools (Barba Aragón *et al.*, 2014; Michalski, 2014) might activate OL processes for environmentally-related activities. Consultants (Clegg *et al.*, 2004) and external good practices represent other sources of knowledge transfer and retention affecting the organization from the outside, foreseeing the activation of internal OL processes (Bulkeley, 2006). At the interorganizational level, strategic alliances and interorganizational networks - e.g., business networks and supply networks - activate learning processes (Gulati *et al.*, 2009; Van Hoof, 2014).

OL processes have been aligned with the concept of exploitation, as they could refine existing organizational processes, and also support an organization's exploration, aimed at introducing new technologies and knowledge from external sources (March, 1991). Holmqvist (2004) aligns the conceptualization of explorative and exploitative OL processes with the intraorganizational and interorganizational levels, identifying opening-up/focusing, and internalization/extension OL orientation. Exploitative and explorative OL processes are, in fact, equally important for an organization, which should simultaneously activate them for a complete achievement of specific objectives (Crossan *et al.*, 1999) - i.e. applying the organizational ambidexterity (Felício *et al.*, 2019). However, organizations frequently decide to choose either an explorative, or an exploitative approach, as the organizations, and especially SMEs (Felício *et al.*, 2019; Rizos *et al.*, 2016) "compete for scarce resources" (March, 1991, p. 71).

For the CE evolution, scholars suggest organizations to search for a circular business model (CBM)-enabling activities to stimulate, first, the organization's cultural, structural, and strategical change toward circularity (Tura *et al.*, 2019) and, second, networking solutions within supply chains (Chen *et al.*, 2020). These two objectives might be achieved as with OL intraorganizational processes aimed at transitioning organizational culture toward CE, - with the support of specific structures and technologies (Sanz-Valle *et al.*, 2011), - as with interorganizational learning processes oriented toward the creation of collaborative solutions in the value networks (Van

Hoof, 2014). Adapting the Holmqvist's model (2004) to CE, we propose that SMEs should seek the connection among the involved OL levels-i.e. the organizational, and supply chain levels-by using two dynamics: first, with extension OL processes, thus intraorganizational learning processes (exploitative or explorative) that generate interorganizational ones at the supply chain level; second, through internalization processes, i.e. interorganizational learning processes that stimulate the activation of intraorganizational ones (Figure 1).

Fig. 1: Extension and internalization OL processes for CBM introduction



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In this context, we aim at investigating how an ambidextrous approach could be envisioned within SMEs, and which OL processes might be more effectively activated for CE, as stated in Proposition 1.

Proposition 1: Ambidextrous SMEs, which activate intraorganizational and interorganizational learning processes oriented toward exploitation and exploration, are more likely to sustain the introduction of CBMs.

2.2 OL contextual factors for CBM application

OL theory can help in the detection of those factors influencing the effectiveness of CBM-oriented learning processes; Fiol and Lyles (1985) identify organizational culture, strategy, structure, and environment as contextual factors that influence the occurrence of OL processes (Chatterjee *et al.*, 2018). In the light of CE literature, the above-mentioned factors appear to influence the implementation of CBMs, as they imply the redesign of organizational business models (Ünal *et al.*, 2019), together with the evolution of the surrounding environment (Rizos *et al.*, 2016; Tura *et al.*, 2019). Compared to other innovations, the CE transition involves specific levels, i.e. the organizational level, the interorganizational level, and the societal level (Pieroni *et al.*, 2019). Through the cross-pollination of OL and CE literatures, we propose a CE-related set of contextual factors that appear to influence the occurrence of CBM oriented OL processes: external environment, supply chain context, organizational features, and multi-level culture.

External environment is the macro-level environment, composed of external stakeholders, (Abrahamson and Fombrun, 1994). Among

them, public institutions are important to support and stimulate the environmental change (Dey *et al.*, 2020; Dzhengiz, 2020), as they might activate CE-oriented planned processes, regulations, and incentives (Van Bueren and Priemus, 2002) to encourage sustainability-oriented solutions at the organizational level (Rizos *et al.*, 2016; Tura *et al.*, 2019). SMEs might appear more willing to introduce sustainable innovations if they are culturally stimulated from the external environment and sustained by "effective taxation policy, laws and regulations" oriented toward CE (Rizos *et al.*, 2016, p. 4). Thus, the external environment identifies a relevant contextual factor influencing the application of CBM-oriented OL processes within SMEs, as stated in Proposition 2.

Proposition 2: The external environment - composed of external organizational stakeholders - represents a macro-level contextual factor positively influencing OL processes oriented toward CBM implementation within SMEs.

Supply chains, as "organizations mutually and co-operatively working together to control, manage and improve the flow of materials and information from suppliers to end users" (Christopher, 2011, p. 4), should evolve towards CE to guarantee the widest sustainable impact (Boström *et al.*, 2015). Regarding SMEs, collaborative solutions can reduce structural limitations, introduce innovations through resource sharing and OL (Van Hoof, 2014); moreover, supply-chain-level collaboration is a key strategy to implement CE within SME (Prieto-Sandoval *et al.*, 2019). We therefore propose that supply chain context, embedded in the overall external environment, represents a separated contextual factor, as reported in Proposition 3.

Proposition 3: The supply chain context is embedded within the external environment, and represents a separated and positive contextual factor influencing OL processes oriented toward CBM implementation within SMEs.

At a single-firm level, organizational factors can influence the activation of OL processes: formal structures, adopted business models (Berends *et al.*, 2016), internal practices (Edenius and Yakhlef, 2007), physical and virtual teams of internal actors (Kauppila *et al.*, 2011), internal/external training, economic, physical, and human resources (HR) (López *et al.*, 2006). Organizational features matters also for organizational resilience, defined as the organizational ability to respond to external threats: resourcefulness of personnel, and redundancy of structures, in fact, can support responsive business model adaptation and redesign (Bruneau and Reinhorn, 2006; Linnenluecke, 2017). For CE and SMEs, the cited organizational elements are critical for introducing CBMs, both as barriers and drivers (Dey *et al.*, 2020; Prieto-Sandoval *et al.*, 2019). In this context, the investigation of organizational structures' and processes' role as contextual factors for CBM-oriented OL processes appears necessary (Proposition 4).

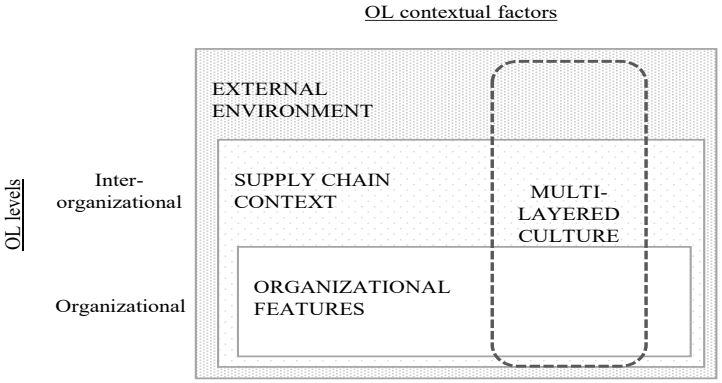
Proposition 4: The organizational features - specifically organizational processes, structures, and HR - are embedded in the supply chain context, as in the external environment, and represent a positive contextual factor influencing OL processes oriented toward CBM implementation within SMEs.

Lastly, culture represents a key element in the activation of OL processes. We conceptualize culture as multi-level underlying assumptions in terms of values and beliefs shared among actors (Erez and Gati, 2004; Schein, 2004), encompassing the organizational level, (Durst and Wilhelm, 2012), the supply chain level, and the macro-level concept of national culture (Abrahamson and Fombrun, 1994). At the organizational level, certain typologies of organizational culture can stimulate the overall organizational capacity of acquiring new knowledge (Harrington and Guimaraes, 2005) and of opening up the organization toward external collaborations (Pérez López *et al.*, 2004). At the supply chain level, a collaborative culture appears fundamental to activate the CE-oriented networking solutions and OL processes required to develop CBMs (Van Hoof, 2014), while the sustainability-oriented national culture is an overall support for the transition (Chen *et al.*, 2020). Proposition 5 summarizes the multi-layered culture as a key contextual factor for CBM-oriented OL processes.

Proposition 5: The multi-layered culture represents a positive and key contextual factor influencing OL processes oriented toward CBM implementation within organizations and particularly within SMEs.

We explore the five propositions in the context of Italian construction SMEs, to identify involved dimensions, and dynamics among factors and processes in the transition toward CE in traditional, yet evolving, sectors. Figure 2 conveys the interrelation among the proposed CBM-oriented OL contextual factors.

Fig. 2: Contextual factors for CBM-oriented OL processes activation



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3. Methodology

To explore the developed propositions, following previous scholars we employ a qualitative methodology (e.g., Ünal *et al.*, 2019).

To employ a managerial-oriented investigation, we consider the CBMs described in the BS 8001:2017 (BSI, 2017) standard. This standard is increasingly used in academic studies as a basis for CBM-related analyses (e.g., Chen *et al.*, 2020), as it includes the following CBMs: on-demand, -

production based on customers' demand, - dematerialization, - replacing physical infrastructure and assets with digital/virtual services, - product life-cycle extension, - repairing, reusing, and reselling products for an extended durability, - recovery of secondary raw materials, - recovery of resources from waste or by-products, - product-service system, - which considers the product as a service, - and collaborative consumption, - i.e., connection among actors to share resources and giving rise to synergies in product use. We have integrated the BS 8001's list with the circular supply CBM (Lacy *et al.*, 2015) focused on the use of renewable resources, as it identifies an envisioned evolution path for constructions (European Observatory for Clusters and Industrial Change, 2019). Scholars have used this standard to certify exemplary CE projects within the Italian construction sector (Scipioni, 2021), thus, it identifies a realistic tool SMEs can use for the evaluation, development, and assessment of CBMs.

We focus on construction SMEs, as they represented around 80% of total value added in Europe and 99.9% of enterprises' total number (Eurostat, 2020). Among EU countries, Italy covers a prominent position in CE, holding the first place in the circularity index ranking (Circular Economy Network & ENEA, 2020). Furthermore, the Italian construction sector is totally characterized by SMEs, "accounting for (...) a significant share of total value added generated by SMEs" (European Commission, 2019, p. 20), and by an increasing number of recognized CE-oriented companies (about 10% of Confindustria's 2020 CE awarded companies; Confindustria, 2020).

The focus group methodology represented an appropriate research design, as it favors the investigation of multiple perspectives and the activation of in-depth responses and discussions of CBM-related interpretations, limiting the subjective influences (Morgan, 1997).

We held four focus group discussions during the spring 2020 COVID-19 lockdown period via a virtual platform over two days. In the sessions, the top managers of 24 Italian private and public building construction SMEs qualitatively evaluated CBMs' use. Moreover, the top managers identified learning activities and contextual factors at the organizational, the supply chain, and the external environment levels. We selected the participants covering from North to South Italy (Chart 1). The participants, furthermore, represented micro, small, and medium enterprises (Chart 2). Other details related to the participants (age, gender, year of experience) are presented in Table 1. Before and after each session, we performed a double survey evaluation through online platforms. First, we conducted a survey to understand the CE/CBM knowledge prior to the focus group sessions, proposing the above-mentioned list of CBMs as a reference. Second, we administered another questionnaire after the session to weigh a set of OL processes rooted in the OL literature. All the questions presented a five-point Likert scale for the different items. The quantitative assessment enabled a more precise evaluation of the qualitative impressions raised during the focus group discussions and, thus, more objective results.

Chart 1: Participants' area of activity

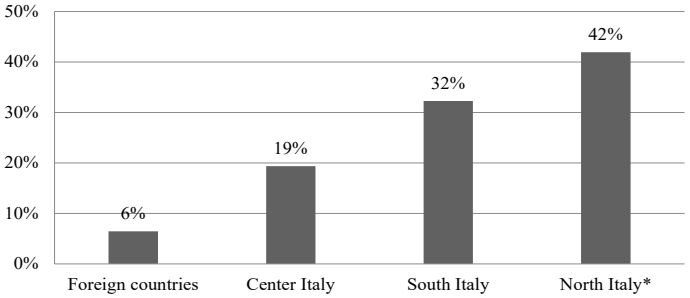

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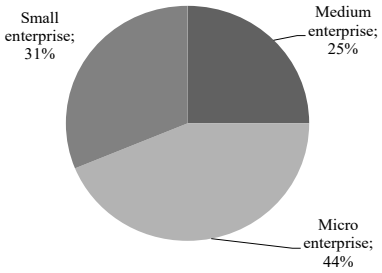
Chart 2_SME included in the analysis



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Tab. 1: Personal details of focus groups' participants

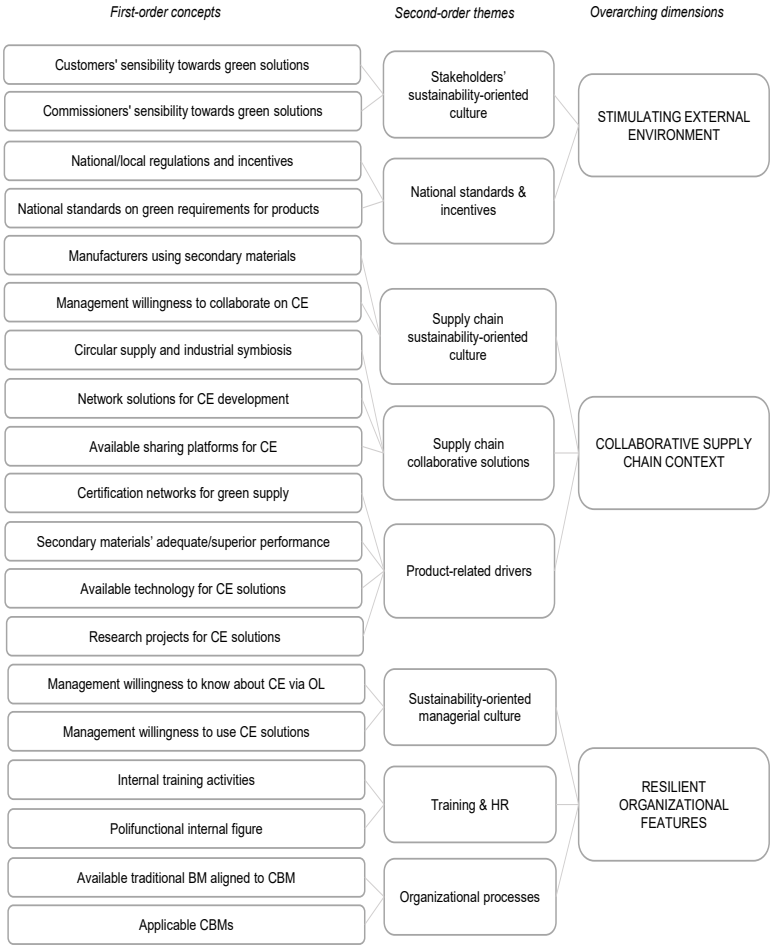
Personal details	Possible answer	n°	%
Age	Under 35 yrs	11	45.83%
	35 yrs or more	13	54.17%
Gender	Woman	6	25.00%
	Man	18	75.00%
Experience	Less than 7 yrs	8	33.33%
	8-14 years	11	45.83%
	More than 14 yrs	5	20.83%
Total		24	

Source: own elaboration

Using NVIVO software and informed by the logic of grounded theory (Suddaby, 2006), the two researchers double-coded each focus group's transcriptions. Particularly, the researchers identified first-order themes as in-context meanings aligned with the informants' viewpoints on OL and CE theoretical concepts. The coding followed an iterative process (Langley, 1999) until data and concept saturation, resulting in 87 first-

order concepts. Following Gioia's *et al.* (2013) methodology, we identified similarities and differences among the obtained themes, reducing first-order concepts to a "more manageable number" (Gioia *et al.*, 2013, p. 20), trying to maintain informants' terminology. Through the aggregation of first-order concepts into wider structures of meanings, we identified eight second-order theory-centric themes. The overarching dimensions were distilled by the grouping of second-order themes, as three main theoretical elements clearly emerged from the second-order themes. The derivation of concepts, themes, and overarching dimensions followed an interpretative and non-mechanical process (Langley, 1999) through the engagement in mutual discussions among the researchers to arrive at a final consensus on data interpretation and coding. The overall qualitative data analysis process enabled the construction of the data structure, which highlights the progression from raw data to the overarching dimensions (Figure 3).

Fig. 3: Data structure: from first-order concepts to overarching dimensions



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4. Results

As a result of the interpretative qualitative phase, and in the light of the theoretical propositions, we highlight three dimensions of contextual factors influencing CBM-oriented OL processes: stimulating external environment, collaborative supply chain context, and resilient organizational features. As a transversal dimension embedded in the three dimensions, we highlight a fourth factor - i.e. the sustainability-oriented multi-layered culture - as a key element for the development of CBM-oriented OL processes.

First, we have identified several contextual factors related to the external environment which are capable to stimulate the implementation of CBMs, grouped into national and stakeholder-related drivers. From a normative point of view, Italian standards required the use of green requirements for public procurements, prescribing construction firms to conform to the regulation for public tenders. Furthermore, private tenders increasingly ask for the use of sustainable products, stimulating their use among Italian construction firms. Moreover, national incentives for renovating private buildings, and specific local regulations for specific material reuse, stimulates the implementation of CE solutions. The mentioned national and local directives appear to identify positive conditions for the activation of CBM-oriented OL processes, at the macro level.

"Nowadays you need to respect certain norms that enable the development of the circular economy." - Focus group (FG) 4

Regarding stakeholders' culture, an increasing sensibility toward green products and sustainable construction techniques is present in private customers and public commissioners. This sensibility stimulates a sustainable-oriented evolution of construction firms, even if slightly differentiated across the country.

"I have proof that the private sector gives positive feedback on the circular economy." - FG 2

The combination of normative (*National standards & incentives*) and customer-related second-order themes (*Stakeholders' sustainability-oriented culture*) enabled the identification of the first overarching dimension, identified in the stimulating external environment contextual factor.

We also identify three supply-chain-related aspects from the discussions. As first element, the *Supply chain sustainability-oriented culture*; Among SC stakeholders, manufacturers offer several products composed of recycled materials (Lieder & Rashid, 2016) and thus foresee CE-oriented collaborations. Moreover, technical laboratories and landfills act as central actors in secondary material reuse activities and as joining element across stakeholders, facilitating the activation of circular processes along the supply chain. Furthermore, construction firms' cultural approach toward CE-oriented collaborations among SC stakeholders envisions the willingness to activate CBM-oriented OL processes at the interorganizational level.

"I think a sharing platform to promote CE and product reuse is a great idea." -FG 2

As second element, the presence of Supply chain collaborative solutions, stimulate the overall applicability of CBMs, i.e. industrial symbiosis and circular supply opportunities, and CE-oriented networks, such as those related to specific products' certifications (e.g., the KlimaHaus-CasaClima certification; CasaClima, 2020). Moreover, nationally- and privately-developed technological platforms for collaborative consumptions (e.g., waste sharing for direct reuse and renting machinery solutions) envisage the feasibility of collaborative CE application in the construction sector's SC.

"I am a consultant for CasaClima and through this network we have specialized in the biobuilding sector." - FG 3

Lastly, product-related drivers motivate building constructors' interest, as secondary products - i.e. products composed of a percentage of recycled materials - can present superior properties than virgin ones. Projects focused on CE are carried out by researchers, while product certifications guarantee technicians' and public authorities' approval. Furthermore, available high-tech solutions, such as those concerning advanced electrical systems and green energy production, help introducing CE solutions at supply chain level: all the mentioned factors form the *collaborative supply chain context*.

"Together with the university (...) we continue with innovation in the construction sector (...) we try to create insulation coatings with limestone and canvas, which are sustainable materials." - FG 1

As a third dimension, a set of organizational elements appear to be connected to the organizational resilience and sustainability of firms, particularly culture, HR, and processes. First, *CE-oriented managerial culture* is essential to envision CBM applicability. Scholars have emphasized organizational culture as one of the most important contextual factors for CE and technical innovation (Sanz-Valle *et al.*, 2011; Tura *et al.*, 2019); since the top management often shapes culture in SMEs (Durst and Wilhelm, 2012), we have conceptually aligned organizational and top-managerial culture. Some construction SMEs' managers appear to show an environmentally-oriented culture, and a willingness to understand practically-applicable CE-oriented solutions.

"I would like to know more about CE for my firm." - FG 1

Second, HR is fundamental to implement CE via internal competences and training activities. Construction SMEs - as all SMEs - are usually structurally limited in terms of economic resources (Rizos *et al.*, 2016) to hire additional employees for the implementation of specific activities, thus internal training solutions for the existing personnel formation is highly appreciated to create multifunctional figures. Training and HR represent key elements to develop spanner (Stan and Puranam, 2017) both at the intraorganizational level and among SC stakeholders.

"It makes a difference (...) to find polifunctional figures able to do two or three things (...); we need to train internally, to hire young engineers(...), and make them develop." - FG 3

Third, *organizational processes*. Certain traditional processes are aligned with CE, such as building construction on commission, secondary material reuse, and modular building construction. Moreover, in the Italian

context several good practices are available as innovative BM solutions in a circular approach, for example, circular supplies, virtual renderings, and renting solutions for activities and products. On a process level, CBMs appear easily applicable-if not already applied.

"We have experience in circular economy (...) another firm was digging materials suitable for making aggregates. We had it analyzed (...), we prepared the recovery plan, and we have reused all the material." - Focus group 3

The above-mentioned factors demonstrate construction SMEs' resilient organizational features, especially in the resourcefulness of management and internal personnel, able to quickly react to changing priorities. The identification of resilience highlights the construction SMEs' ability to adopt radical changes required for employing CE (Buliga *et al.*, 2016).

As part of the qualitative analysis, we employed a quantitative analysis of focus groups' questionnaires' responses1, which show prior knowledge about the CE and CBMs, and the evaluation of OL processes for CBM implementation. Particularly, managers should select CBMs definition that, in their knowledge, was related to CE. The assessed managers appeared not to fully understand CE and CBM conceptualizations prior to focus group sessions: scholars recognize only a limited set of CBMs as related to CE application (Chart 3).

Second, we asked managers to rate the listed OL processes' importance for CBM implementation on a 1-5 points Likert scale (post-focus group survey): managers identified the creation of strategic alliances, and network contracts as the most important interorganizational OL activities, as well as intraorganizational good practices, internal-external training. Positive evaluations are shown for benchmarking activities, internal working groups, internal/external knowledge-sharing tools and consultants (Chart 4). OL processes' evaluation differ slightly when correlated to the different types of SME (Chart 5). Internal training appears more important for medium enterprises, while the use of internal/external knowledge-sharing tools are considered more significant for small enterprises, and the use of external consultants appears more relevant in small and medium enterprises.

Chart 3: Participants' definition of CE: pre-focus group evaluation

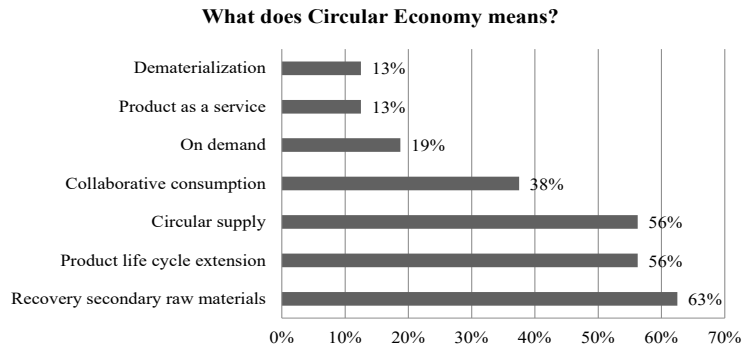

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Chart 4: Participants' evaluation of OL processes for CBMs application

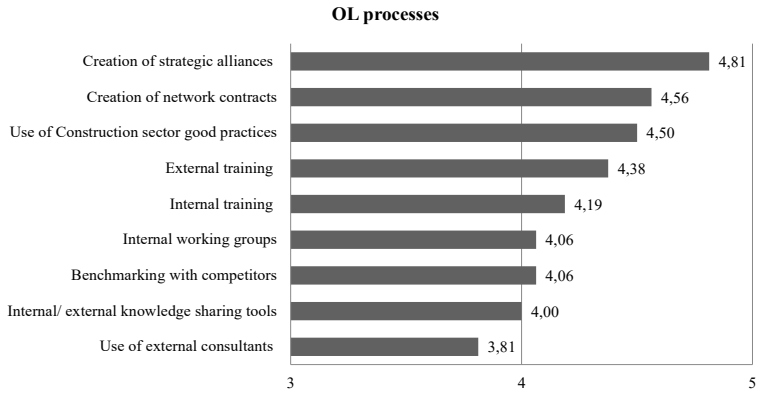

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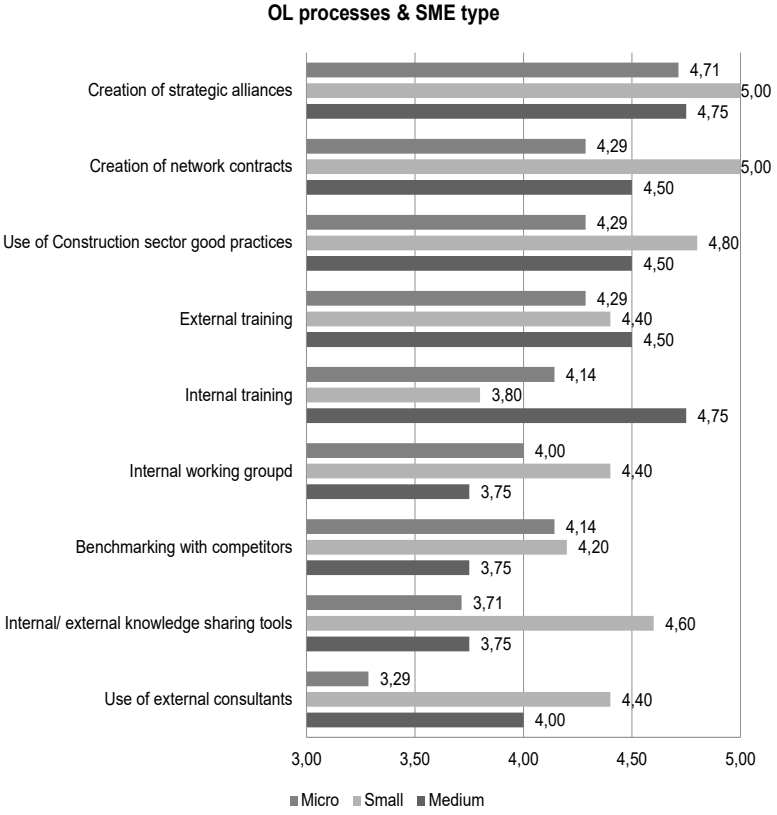
Chart 5: Participants' evaluation of OL processes for CBMs application related to SME type



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Generally, micro firms give a lower evaluation to each OL process compared to small and medium enterprises (see light orange bars in Chart 5), while strategic alliances and network contracts, the use of good practices and external training, together with internal working groups and benchmarking activities essentially present the same results.

5. Discussion

The analysis raises various important aspects that result in a better understanding of this evolving panorama, with a particular attention toward CE-oriented OL processes and related contextual factors. Following the data analysis and informed by the proposed theoretical background, Figure 4 proposes the interrelation of the identified contextual factors - *stimulating external environment, collaborative supply chain context, and resilient organizational features* - that can encourage the implementation of CBM-related OL processes at the single SME, supply chain, and macro environment levels, to highlight the relationships among the defined elements. Furthermore, the *sustainability-oriented culture* is identified as an additional CBM-related OL contextual factor, transversal on the three dimensions.

The research confirms the macro environment's relevance (Proposition 2), with a specific importance of national standards/incentives, and stakeholders' sustainability-oriented culture. The first element is not directly controllable by a single firm, as it depends on institutional bodies, national policies, and local dispositions. On the contrary, SME stakeholders' awareness-raising activities for the development of a sustainability-oriented culture could be included in organizational, network and supply chains strategies.

At the SC level, together with the cultural collaborative approach of SC stakeholders, collaborative solutions and product-related drivers appears to contribute positively toward a SC related implementation of CBMs, confirming and expanding Proposition 3. This result suggests that key elements for a collaborative evolution of the construction supply chains are potentially already available in the sector, i.e. CE-oriented processes and products.

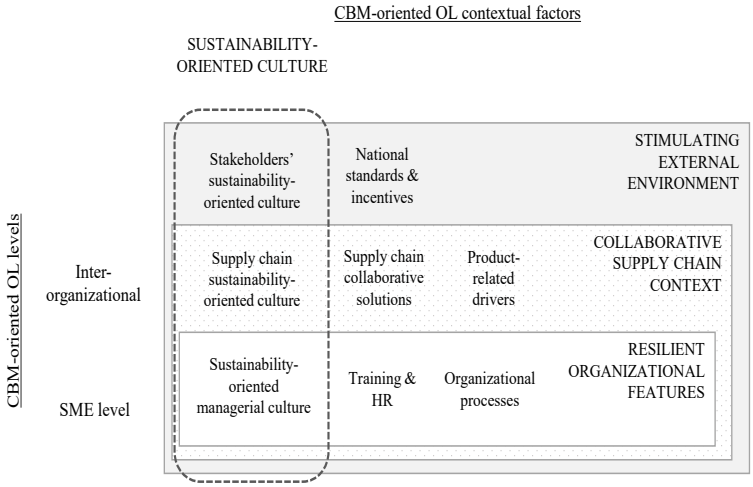
At the single SME level, results emphasize that, among organizational features, a CE-oriented managerial culture, HR-related activities, and specific organizational processes represent important factors influencing CBM-oriented OL. As CE is commonly viewed as a radical innovation, especially for traditional sectors (Ghisellini *et al.*, 2016; Ünal *et al.*, 2019), organizational features contribute also to SMEs' resilience in terms of resourcefulness of personnel and the redundancy of structures (Bruneau and Reinhorn, 2006).

The organization is influenced both by the supply chain context and the external environment, while the SC context is conditioned by the external environment, in the activation of interorganizational learning processes, supporting Proposition 4.

The sustainability-oriented culture acts as contextual factor characterized by organizational, supply chain, and external-environment-related elements, influencing all the involved OL levels, corroborating Proposition 5.

Figure 4 offers the mentioned multi-level representation of CBM-oriented OL processes and contextual factors, to strengthens the need for a simultaneous investigation of the intraorganizational and interorganizational levels. The proposed multi-level framework also highlights the need to give particular attention to the organizational, supply chain, and sectoral stakeholders' cultural attitude to stimulate an overall CE-oriented transition.

Fig. 4: OL contextual factors



Source: own elaboration

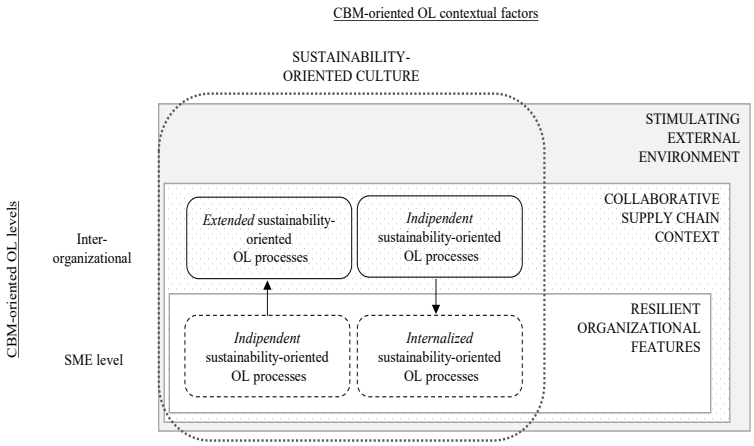
Both intraorganizational and interorganizational OL processes are essential for CE (Proposition 1): to convey the proposed dynamics, we have enriched the theoretical framework with CBM-oriented OL processes (Figure 5). Intraorganizational learning processes - i.e. training, benchmarking activities, working groups, internal knowledge-sharing processes, and the use of consultants and good practices - stimulate the introduction of CBMs. This aspect confirms that intraorganizational OL processes can enable the exploitation of internal resources and structures in the CE transition of SMEs. Available resources and existing organizational structures are, concurrently, shaped by the organizational culture, thus managerial commitment toward CE (Dey *et al.*, 2020) is essential to sustain the transition.

Interorganizational processes are also important to support the CE-oriented transition of construction SMEs, moving bi-directionally (Holmqvist, 2004). Learning processes activated among external stakeholders can induce the activation of OL processes that the single

SME would not have activated independently; similarly, single SME's OL processes could stimulate external learning processes in the related network. Both types of OL processes could act independently from the other levels and create effects only within the organizational boundaries or within the supply chain context (*Independent processes*); however, it would not be preferable in the CE context, as the ambidextrous approach (Felício *et al.*, 2019) produces the most relevant sustainable effects for SMEs (Tura *et al.*, 2019). In this sense, *internalized and extended processes* link the organizational and supply chain levels, in a top-down, and bottom-up direction.

In Figure 5, we present the patterns separated; however, it is possible to seek dynamic interconnections among OL processes within the levels as in relatively circular knowledge-related movement across levels (Nonaka, 1994). It might be fruitfully to combine the four CBM-oriented OL contextual factors with the identified processes to fully understand the sector's learning dynamics in the CE context.

Fig. 5: CBM-oriented OL contextual factors and OL processes



Source: own elaboration

6. Implications and future research

This paper contributes to the identification of contextual factors and enabling processes oriented to support the implementation of CBMs, with a specific attention to OL processes. Particularly, we answer to a call from recent CE literature (Dzhengiz, 2020; Hossain *et al.*, 2020; Pieroni *et al.*, 2019), specifying policy level, supply chain, and organizational elements that might contribute to an effective introduction of CBMs within SMEs of the analyzed traditional sector, i.e. the construction sector (Benachio *et al.*, 2020). The conceptualization of the most influential levels involved in CBM implementation - i.e. external environment, supply chain, and organizational levels - as well as the theorization of specific factors and processes able at influencing the activation of OL processes

in the CE transition of traditional SMEs, would orient other countries' traditional sectors moving toward CE (European Commission, 2016). The conceptualizations of CE-oriented supply chains, and of sustainability oriented multi-layered culture represent novel and effective factors influencing the transition. The study, therefore, contributes to a wider understanding of the SME-related CBM implementation process (Rizos *et al.*, 2016; Ünal *et al.*, 2019).

On a policy level, awareness-raising processes for CE conceptualization and applications appear important in this evolving sector. We carried out this research within a leading context in terms of the CE (Circular Economy Network & ENEA, 2020), thus sensibilization processes might gain even more importance in countries with a less advanced approach to circularity. Furthermore, we confirm CE-related cultural awareness as a key factor for CBM application at all levels, underlining the need of specific multi-level processes of knowledge creation, transfer, and retention.

As managerial implications, the study proposes that ambidextrous organizations would seek an easier transition toward CE, and specific internalizing and extending intraorganizational and interorganizational learning processes perceived as the most effective.

Future research should consider a deeper analysis of the external environment, and the qualification of extended/ internalized learning processes. Moreover, the use of the proposed frameworks in other national contexts, - e.g., other EU countries, facing the sustainability-oriented transition (European Commission, 2016), - and traditional sectors (e.g., the maritime sector; Klein and Spychalska-Wojtkiewicz, 2020), would assess the relevance of this study.

7. Research limitations

The study presents limitations, tied to the qualitative interpretations. To reduce the subjectivity bias, we iteratively discussed coding and interpretations until we identified a common set of theoretical concepts (Gioia *et al.*, 2013), also in alignment with previous literature on CE and OL. This approach is considered useful in rendering the analysis more objective (Langley, 1999), limiting personal positions. Furthermore, a single context of analysis limits the generalizability of the presented results; however, we answered the call to gather in-depth insights on CE, SMEs (Prieto-Sandoval *et al.*, 2019), and "specific cases and their real implications" from the construction sector (Hossain *et al.*, 2020, p. 109948).

Originality of the paper

The paper's originality resides in the in-depth investigation of SME managers' perception regarding an innovative organizational approach, within a specific sector hardly analyzed in the management and organization science literature. The proposed qualitative analysis of the Italian context offers a unique perspective of this traditional yet evolving

sector, presenting distinct insights related to the role of OL contextual factors and processes in the implementation of CBMs, which might support both practitioners and researchers in the transition toward CE. Furthermore, this study generally offers a novel perspective in the CE analysis using OL theories, simultaneously answering a call for a deeper analysis of OL processes (Argote and Miron-Spektor, 2011) in countries where SMEs play a dominant role (Chikweche and Bressan, 2018).

References

ABRAHAMSON E., FOMBRUN C.J. (1994), "Macrocultures: Determinants and Consequences", *The Academy of Management Review,* vol. 19, n. 4, pp. 728-755.

ANDERSON L., THORPE R., COLEMAN C. (2020), "Reviewing Management Learning: The field and the journal", *Management Learning,* vol. 51, n. 1, pp. 17-34.

ARGOTE L. (2011), "Organizational learning research: Past, present and future", *Management Learning*, vol. 42, n. 4, pp. 439- 446.

ARGOTE L., MIRON-SPEKTOR E. (2011), "Organizational Learning: From Experience to Knowledge", *Organization Science*, vol. 22, pp. 1123-1137.

BARBA ARAGÓN M.I., JIMÉNEZ JIMÉNEZ D., SANZ VALLE R. (2014), "Training and performance: The mediating role of organizational learning", *BRQ Business Research Quarterly,* vol. 17, n. 3, pp. 161-173.

BENACHIO G.L.F., FREITAS M. DO C.D., TAVARES S.F. (2020), "Circular economy in the construction industry: A systematic literature review", *Journal of Cleaner Production*, vol. 260, p. 121046.

BERENDS H., SMITS A., REYMEN I., PODOYNITSYNA K. (2016), "Learning while (re)configuring: Business model innovation processes in established firms", *Strategic Organization*, vol. 14, n. 3, pp. 181-219.

BOSTRÖM M., JÖNSSON A.M., LOCKIE S., MOL A.P.J., OOSTERVEER P. (2015), "Sustainable and responsible supply chain governance: Challenges and opportunities", *Journal of Cleaner Production*, vol. 107, pp. 1-7.

BRUNEAU M., REINHORN A. (2006), "Overview of the Resilience Concept", *Proceedings of the 8th U.S. National Conference on Earthquake Engineering*, Paper No. 2040, 9.

BSI. (2017), *BS 8001:2017 Framework for implementing the principles of the circular economy in organizations,* Guide, The British Standards Institution.

BULIGA O., SCHEINER C.W., VOIGT K.I. (2016), "Business model innovation and organizational resilience: Towards an integrated conceptual framework", *Journal of Business Economics*, vol. 86, n. 6, pp. 647-670.

BULKELEY H. (2006), "Urban Sustainability: Learning from Best Practice?", *Environment and Planning A: Economy and Space*, vol. 38, n. 6, pp. 1029-1044.

CASACLIMA (2020), *Certificazione edifici*, https://www.agenziacasaclima.it/it/certificazione edifici-1405.html

CHATTERJEE A., PEREIRA A., BATES R. (2018), "Impact of individual perception of organizational culture on the learning transfer environment", *International Journal of Training and Development*, vol. 22, n. 1, pp. 15-33.

CHEN L.H., HUNG P., MA H. (2020), "Integrating circular business models and development tools in the circular economy transition process: A firm-level framework", *Business Strategy and the Environment*, vol. 29, n. 5, pp. 1887-1898.

CHIKWECHE T., BRESSAN A. (2018), "A systematic review of future research challenges and prospects of organizational learning research in small medium size enterprises", *Journal of Small Business and Entrepreneurship,* vol. 30, n. 2, pp. 175-191.

CHRISTOPHER M. (2011), *Logistics & supply chain management (4th ed.),* Financial Times Prentice Hall.

CIRCULAR ECONOMY NETWORK, & ENEA (2020), *Rapporto sull'economia circolare in Italia,* https://circulareconomynetwork.it/rapporto-economia-circolare-2020/

CLEGG S.R., KORNBERGER M., RHODES C. (2004), "Noise, Parasites and Translation: Theory and Practice in Management Consulting", *Management Learning,* vol. 35, n. 1, pp. 31-44.

CONFINDUSTRIA (2020), *Economia circolare-Case History, Economia Circolare*, http://economiacircolare.confindustria.it/ch/

CROSSAN M.M., LANE H.W., WHITE R.E. (1999), "An Organizational Learning Framework: From Intuition to Institution", *The Academy of Management Review,* vol. 24, n. 3, pp. 522-537.

DEY P.K., MALESIOS C., DE D., BUDHWAR P., CHOWDHURY S., CHEFFI W. (2020), "Circular economy to enhance sustainability of small and medium-sized enterprises", *Business Strategy and the Environment*, vol. 29, n. 6, pp. 2145-2169.

DURST S., WILHELM S. (2012), "Knowledge management and succession planning in SMEs", *Journal of Knowledge Management,* vol. 16, n. 4, pp. 637-649.

DZHENGIZ T. (2020), "A Literature Review of Inter-Organizational Sustainability Learning", *Sustainability*, vol. 12, n. 12, p. 4876.

EASTERBY-SMITH M. (1997), "Disciplines of Organizational Learning: Contributions and Critiques", *Human Relation*s, vol. 50, n. 9, pp. 1085-1113.

EDENIUS M., YAKHLEF A. (2007), "Space, Vision and Organizational Learning: The Interplay of Incorporating and Inscribing Practices", *Management Learning,* vol. 38, n. 2, pp. 193-210.

ELLEN MACARTHUR FOUNDATION. (2015), *Growing within: A circular economy vision for a competitive Europe,* https://www.ellenmacarthurfoundation.org

EREZ M., GAT E. (2004), "A dynamic, multi-level model of culture: From the micro level of the individual to the macro level of a global culture", *Applied psychology: an international review,* vol. 53, n. 4, pp. 583 -598.

EUROPEAN COMMISSION (2016, July 5th), *Green Action Plan for SMEs.* https://ec.europa.eu/growth/smes/business-friendly-environment/green-action-plan_en

EUROPEAN COMMISSION (2019), *Annual report on European SMEs 2018/2019,* https://ec.europa.eu/growth/smes/business-friendly-environment/performance-review_en

EUROPEAN OBSERVATORY FOR CLUSTERS AND INDUSTRIAL CHANGE (2019), P*riority Sector Report: Construction industry,* https://www.clustercollaboration.eu/eu-initiatives/european-cluster-observatory

EUROSTAT (2020), *Small and medium-sized enterprises: An overview,* https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20200514-1

FELÍCIO J.A., CALDEIRINHA V., DUTRA A. (2019), "Ambidextrous capacity in small and medium-sized enterprises", *Journal of Business Research*, vol. 101, n. 6, pp. 07-614.

FIOL M., LYLES M.A. (1985), "Organizational Learning", *Academy of Management Review*, vol. 10, n. 4, pp. 803-813.

GEISSDOERFER M., PIERONI M.P.P., PIGOSSO D.C.A., SOUFANI K. (2020), "Circular business models: A review", *Journal of Cleaner Production,* vol. 277, p. 123741.

GHISELLINI P., CIALANI C., ULGIATI S. (2016), "A review on circular economy: The expected transition to a balanced interplay of environmental and economic systems", *Journal of Cleaner Production*, vol. 114, pp. 11-32.

GIOIA D.A., CORLEY K.G., HAMILTON A.L. (2013), "Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology", *Organizational Research Methods*, vol. 16, n. 1, pp. 15-31.

GULATI R., LAVIE D., SINGH H. (2009), "The Nature of Partnering Experience and the Gains from Alliances", *Strategic Management Journal*, vol. 30, n. 11, pp. 1213-1233.

HARRINGTON S.J., GUIMARAES T. (2005), "Corporate culture, absorptive capacity and IT success", *Information and Organization,* vol. 15, n. 1, pp. 39-63.

HOLMQVIST M. (2004), "Experiential Learning Processes of Exploitation and Exploration Within and Between Organizations: An Empirical Study of Product Development", *Organization Science,* vol. 15, n. 1, pp. 70-81.

HOSSAIN MD.U., NG S.T., ANTWI-AFARI P., AMOR B. (2020), "Circular economy and the construction industry: Existing trends, challenges and prospective framework for sustainable construction", *Renewable and Sustainable Energy Reviews*, vol. 130, p. 109948.

KAUPPILA O.P., RAJALA R., JYRÄMÄ A. (2011), "Knowledge sharing through virtual teams across borders and boundaries", *Management Learning,* vol. 42, n. 4, pp. 395-418.

KLEIN M., SPYCHALSKA-WOJTKIEWICZ M. (2020), "Cross-Sector Partnerships for Innovation and Growth: Can Creative Industries Support Traditional Sector Innovations?", *Sustainability*, vol. 12, n. 23, p. 10122.

LACY P.,RUTQVIST J. (2015), *Waste to Wealth: The Circular Economy Advantage*, Palgrave Macmillan.

LANGLEY A. (1999), "Strategies for Theorizing from Process Data", *Academy of Management Review*, vol. 24, n. 4, pp. 691-710.

LIEDER M., RASHID A. (2016), "Towards circular economy implementation: A comprehensive review in context of manufacturing industry", *Journal of Cleaner Production*, vol. 115, pp. 36-51.

LINNENLUECKE M.K. (2017), "Resilience in business and management research: A review of influential publications and a research agenda", *International Journal of Management Reviews*, vol. 19, n. 1, pp. 4-30.

LÓPEZ S.P., PEÓN J.M.M., ORDÁS C.J.V. (2006), "Human Resource Management as a Determining Factor in Organizational Learning", *Management Learning*, vol. 37, n. 2, pp. 215-239.

MARCH J.G. (1991), "Exploration and Exploitation in Organizational Learning", *Organization Science,* vol. 2, n. 1, pp. 71-87.

MAZUTIS D., SLAWINSKI N. (2008), "Leading Organizational Learning Through Authentic Dialogue", *Management Learning,* vol. 39, n. 4, pp. 437-456.

MICHALSKI M.P. (2014), "Symbolic meanings and e-learning in the workplace: The case of an intranet-based training tool", *Management Learning*, vol. 45, n. 2, pp. 145-166.

MORGAN D.L. (1997), *The Focus Group Guidebook*, SAGE Publications.

NONAKA I. (1994), "A Dynamic Theory of Organizational Knowledge Creation", *Organization Science*, vol. 5, n. 1, pp. 14-37.

PIERONI M.P.P., MCALOONE T.C., PIGOSSO D.C.A. (2019), "Business model innovation for circular economy and sustainability: A review of approaches", *Journal of Cleaner Production*, vol. 215, pp. 198-216.

PRIETO-SANDOVAL V., JACA C., SANTOS J., BAUMGARTNER R.J., ORMAZABAL M. (2019), "Key strategies, resources, and capabilities for implementing circular economy in industrial small and medium enterprises", *Corporate Social Responsibility and Environmental Management,* vol. 26, n. 6, pp. 1473-1484.

RIZOS V., BEHRENS A., VAN DER GAAST W., HOFMAN E., IOANNOU A., KAFYEKE T., FLAMOS A., RINALDI R., PAPADELIS S., HIRSCHNITZ-GARBERS M., TOPI C. (2016), "Implementation of Circular Economy Business Models by Small and Medium-Sized Enterprises (SMEs): Barriers and Enablers", *Sustainability*, vol. 8, n. 11, p. 1212.

SANZ-VALLE R., NARANJO-VALENCIA J.C., JIMÉNEZ-JIMÉNEZ D., PEREZ-CABALLERO L. (2011), "Linking organizational learning with technical innovation and organizational culture", *Journal of Knowledge Management,* vol. 15, n. 6, pp. 997-1015.

SCHEIN E.H. (2004), "Organizational Culture and Leadership (3rd ed.), Jossey-Bass", *Strategic Management Journal*, vol. 35, n. 7, pp. 974-994.

SCIPIONI S. (2021), "Circular corporate reputation nelle piccole e medie imprese: Il caso di una good practice italiana", In Ferretti P., *La corporate reputation: Alcuni drivers di sviluppo,* Giappichelli, Torino.

STAN M., PURANAM P. (2017), "Organizational adaptation to interdependence shifts: The role of integrator structures", *Strategic Management Journal,* vol. 38, n. 5, pp. 1041-1061.

SUDDABY R. (2006), "From the Editors: What Grounded Theory is Not", *Academy of Management Journal*, vol. 49, n. 4, pp. 633-642.

TURA N., HANSKI J., AHOLA T., STÅHLE M., PIIPARINEN S., VALKOKARI P. (2019), "Unlocking circular business: A framework of barriers and drivers", *Journal of Cleaner Productio*n, vol. 212, pp. 90-98.

ÜNAL E., URBINATI A., CHIARONI D. (2019), "Managerial practices for designing circular economy business models: The case of an Italian SME in the office supply industry", *Journal of Manufacturing Technology Management,* vol. 30, n. 3, pp. 561-589.

VAN BUEREN E.M., PRIEMUS H. (2002), "Institutional Barriers to Sustainable Construction", *Environment and Planning B: Planning and Design,* vol. 29, n. 1, pp. 75-86.

VAN HOOF B. (2014), "Organizational learning in cleaner production among Mexican supply networks", *Journal of Cleaner Production,* vol. 64, pp. 115-124.

WENGER E. (1999), *Communities of Practice: Learning, Meaning, and Identity,* Cambridge University Press.
YIN R.K. (2017), *Case Study Research and Applications: Design and Methods* SAGE Publications.

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