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RESEARCH ARTICLE

Unpacking the relation between learning orientation and product innovation: Does strategic flexibility matter?

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Abstract
Learning orientation emphasizes the importance of learning from any experience. It is grounded on commitment to learn, shared vision, open-mindedness, and knowledge sharing. Organizational knowledge management literature based on social complexity theory posits that learning orientation makes companies generate new knowledge through spontaneous multi-level iterations and self-organization. Challenges related to the current business environment requires companies to constantly adjust to remain competitive. Still, the mechanisms making learning-oriented companies more capable to develop innovative product have been scantly explored. Pertinent literature actually conjectures this relationship as spontaneous, directed, and unmediated. Moreover, Small and Medium Enterprises (SMEs) rarely represent the context of analysis of research on this topic. Frequently lacking resources to systematically pursue product innovation, SMEs rely on solutions deriving from the combination of internal knowledge and external sources; thus, these companies depend on learning orientation principles to remain innovative. In this vein, the research aims to understand how learning orientation allows product innovation in SMEs through the achievement of strategic flexibility. Structural equation modelling was used to analyse data from 300 British SMEs. The results demonstrate the mediating role of strategic flexibility in the relationships between learning orientation and product innovation. The importance of innovation culture also emerged.

Keywords: learning orientation; product innovation; SMEs; strategic flexibility; social complexity theory; knowledge management

Introduction

Learning orientation is surmised as a company-level pledge toward 'creating and using knowledge to enhance competitive advantage' (Calantone, Cavusgil, & Zhao, 2002, p. 516). Learning-oriented companies are characterized by the copresence of four specific values: (a) encouragement of commitment to learn, (b) nourishment of a shared vision, (c) support of open-mindedness, and (d) promotion of intraorganizational knowledge sharing procedures (Baker, Mukherjee, & Perin, 2022; Calantone et al., 2002). Such an orientation represents a founding condition for the development of successful organizational learning initiatives. Still, the pursuit of learning orientation necessitates the development of a culture rooted on the creation of a favourable disposition toward learning, whereas organizational learning simply describes the descending mechanisms and processes pertaining how an organization and its member learn (Hu, 2014; Sinkula, Baker, & Noordewier, 1997). Being a learning-oriented company also implies *overture* to information coming from external sources, that is pivotal to support increments in the internal knowledge base (Baker & Sinkula, 1999a, 1999b).

Pertinent literature associates learning orientation with innovation performance (Alerasoul, Afeltra, Hakala, Minelli, & Strozzi, 2022; Baker et al., 2022; Calantone et al., 2002). It has specially been observed how learning orientation influences companies' absorptive capacity (Gutiérrez, Bustinza, & Molina, 2012), business model innovation (Bae & Choi, 2021), employees competencies' acquisition (Alerasoul et al., 2022), and technology selection and adoption (Schilling, 2002), all factors consequently affecting firm innovation performance – i.e., the degree to which a company is proficient in improving internal processes or the usefulness and usability of its material and immaterial outputs (Calantone et al., 2002). These findings are consistent across the organizational stream of knowledge management research (Addicot et al., 2006); indeed, learning orientation explains why some companies are better than others in seeking/finding/collecting knowledge, creating new one to support modernization, and have information permeate to any functional area requiring knowledge to complete an innovative task (Calantone, Harmancioglu, & Droge, 2010).

Learning orientation has also been deemed related to product innovation. Companies with greater absorptive capacity and better execution of knowledge-related activities are more inclined to generate creative ideas potentially delving into early proofs of concept (Pellegrini, Ciampi, Marzi, & Orlando, 2020; Xie, Gao, Zang, & Meng, 2020). Innovative products arise from companies' ability to combine market information with productive best practices (Hervas-Oliver, Sempere-Ripoll, & Boronat-Moll, 2021). Hereafter, learning-oriented companies are more performant in launching new products on the market (Calantone et al., 2002), as they are capable to combine internal and external knowledge to support the development of something different via existing resources.

In spite of abundant research on learning orientation and product innovation, scholars scantly explored the connection between these two constructs, frequently assuming the existence of a direct and unmediated relationship (Calisir, Altin Gumussoy, & Guzelsoy, 2013). This research attempts to fill this research gap by observing whether strategic flexibility represents a mediating factor between learning orientation and product innovation. We also speculate that innovation culture – i.e., the nurturing of a culture aiming at creating transparency and proactiveness in respect of innovating (Martin-de Castro, Delgado-Verde, Navas-López, & Cruz-González, 2013) – and market acuity – i.e., companies enhanced capabilities to observe market changes (Rosenzweig & Roth, 2007) – are reenforcing the hypothesized relationship. The research consequently wishes to reply to the following research question:

RQ: *Does strategic flexibility explicate the relationship between learning orientation and product innovation? Do innovation culture and market acuity also play a role?*

While product innovation is vital for any company, the choice to rely predominantly on external or internal knowledge anyhow depends on company characteristics (Annosi, Marzi, Ciampi, & Rialti, 2022). Large or multinational companies, for instance, tend to have formally defined procedures for innovation such as investigating competition, collecting customer preferences, and analysing data (Rhee, Park, & Lee, 2010; Spithoven, Vanhaverbeke, & Roijakkers, 2013). By contrast, SMEs often lack the financial resources of larger counterparts, the numbers of employees dedicated to R&D to create bespoke teams, and the ability to manage multiple simultaneous product innovation endeavours (Del Giudice et al., 2021).

SMEs' product innovation processes have been thoroughly investigated in relation to the importance of these companies in any economic landscape. Van de Vrande, De Jong, Vanhaverbeke and De Rochemont (2009) asserts that the most common strategy for SMEs to innovate pertains the exploitation of existing knowledge repositories with limited usage of external information. Research consistently stresses the role of dynamic capabilities to sense market opportunities and for the reconfiguration of existing assets, even *in absentia* of ad hoc explorative units (Chakma & Dhir, 2023; Valenza, Caputo, & Calabrò, 2023). SMEs innovation processes, hereby, incorporate some of the values of learning orientation spontaneously to cope with resource and staff shortage

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(D'Angelo & Presutti, 2019). In this vein, SMEs were deemed a suitable context to evaluate the intermediate factors between learning orientation and product innovation (Ayoko, Caputo, & Mendy, 2021; Keskin, 2006).

We draw on social complexity theory and dynamic capabilities to answer the aforementioned research question (Antonacopoulou & Chiva, 2007; Eisenhardt & Martin, 2000). Social complexity theory explains the social nature of interaction within businesses and how each person within a business may be an agent of change through his/her interactions to the strategic renewal of the company (Chiva, Grandío, & Alegre, 2010). Dynamic capabilities framework describes which capabilitie support re-configuration processes occurring in the wake of the integration of new knowledge (Eisenhardt & Martin, 2000).

Empirical evidence is drawn from data of 300 UK SMEs' managers. Through the use of structural equation modelling, it was possible to understand the cause-and-effect relationships among the hypothesized variables and to confirm or reject our hypotheses.

The rest of the paper is structured as follows. The second paragraph describes the theoretical background and the main hypotheses underlying our research. The third paragraph describes the two methods and why they were deemed suitable and compatible to assess results veracity through comparison. The fourth one deals with results. The final two paragraphs, instead, present the discussions and the conclusions of the research respectively. Results show the fundamental role of strategic flexibility in mediating the relationship between learning and product innovation. Innovation culture has instead a moderating function. Practical implications about the importance for SMEs to cultivate a learning orientation entrenched culture emerged, as through this orientation it may be possible for company to adjust resources and structures to address increasing complexity deriving from turbulent environments.

Theoretical background and hypothesis development

Learning orientation: A social complexity perspective

Learning orientation involves a company-wide critical evaluation of current norms and knowledge (Sinkula et al., 1997). Learning-oriented companies challenge the established organizational structures guiding their activities and actions aiming to *think outside the box* (Baker & Sinkula, 1999a; b). Over the years, the debate around learning has significantly expanded, offering new analytical perspectives to its interpretation (Real, Roldán, & Leal, 2014; Wang, 2008).

Learning orientation articulates around four principal values. Commitment to learning, the first, refers to company efforts to develop an environment focused on learning. The second is shared vision, that deepens the motivations that lead organizational members to learn. Its presence allows the overcoming of communication barriers and encourages cross-functional flow of information by forming a common sense within the company boundaries. Then, open-mindedness refers to the ability to evaluate and accept new approaches. It implies the willingness to question past methods through the integration of new knowledge and allows to renew ideas and knowledge. Finally, intra-organizational knowledge sharing explores behavioural routines that foster learning within different organizational units. Knowledge sharing within the organization is necessary to prevent information loss and promote repositories' increments (Calantone et al., 2002).

Various research has demonstrated learning orientation positive effects on performance, competitive advantage, and innovation (Sawaean & Ali, 2020; Sheng & Chien, 2016). From a strategic perspective, many authors associated the concept of learning orientation with constructs such as market orientation and entrepreneurial orientation (Anderson, Covin, & Slevin, 2009; Wang, 2008). Baker and Sinkula (1999a) firstly explored these relationships, concluding that commitments to customer value creation (market orientation) and higher learning processes were essential for achieving superior performance. According to Wang (2008) market-oriented culture facilitates the learning and application of new knowledge, which can be used to exploit opportunities and create competitive advantages.

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Despite the strong support for these perspectives, disagreement exists about the assumption that all market-oriented firms have strong learning orientations (Baker et al., 2022). Market orientation focuses on gathering and responding to market information for strategies and tactics, while learning orientation centres on continuous internal improvement (Wilson & Liguori, 2023). These differences can lead a company to be effective in the market without adopting a learning-oriented approach. Following the perspective of Baker et al. (2022), strategic learning helps a company better implement a strategic orientation rather than cause it.

Research anyway highlights that this strategic perspective on learning orientation does not adequately address the role of capabilities (Baker et al., 2022). If learning involves questioning existing procedures and organizational values, then the attitude to reconfigure a firm's tangible assets in response to changing demands becomes crucial. The development of strategic capabilities is supported by deep market insights and a culture of openness. Besides these perspectives, literature sometimes treated learning orientation as phenomenon that manifests through the learning activities of individual actors (i.e., Antonacopoulou & Chiva, 2007; Chiva & Habib, 2015). Yet, considering learning orientation as an individual-level process is limiting, as companies should be viewed as groups of persons that learn collectively (Akella, 2010).

The relevance of groups and multi-level analysis is stressed by the social complexity approach, according to which learning orientation require the consideration of individual as participant to broader social structures (Caputo & Pellegrini, 2020; Huang, Lai, Kao, & Sung, 2014). The social complexity perspective considers the relevance of internal relationships as facilitators of knowledge exchanges occurring between the company and its environment (Chiva et al., 2010; Singh, Charan, & Chattopadhyay, 2022). This perspective of learning describes in an appropriate fashion how SMEs need to operate in current dynamic environment, as these companies look after increments in their knowledge repositories through multiple levels iterations (i.e., among individuals, groups, and the environment). Engaging with the social context enables the questioning of imbedded norms and paradigms. However, to effect change, companies must combine external stimuli with internal components through self-reorganization capabilities, a crucial aspect of the complex approach.

Self-organization is the key to adjustment, as it is an action-oriented interpretive schema capable of determining how firms view and interact with other agents and the environment (Chiva et al., 2010).

The framework provided by social complexity offers a pathway for understanding learning orientation that addresses the limitations of the existing debate. Specifically, this perspective proposes viewing learning orientation as a dynamic process shaped by both internal and external dynamics, rather than as an individual phenomenon. Furthermore, the concept of self-organization offers a means of integrating capabilities into the learning orientation debate.

According to these assumptions, learning orientation, observed through a social complexity view, could be interpreted as the development of knowledge deriving from a multiplicity of connections in which enterprises constantly reconfigure their practices in an incremental fashion. The environmental context in which SMEs operate creates a set of possibilities for learning, and the development of new knowledge and innovation depends on the way companies encode and integrate it internally (Sheng & Chien, 2016).

Therefore, companies' ability to create and use knowledge, is the result of a non-linear process involving internal and external exchanges capable of generating specific outcomes (Antonacopoulou & Chiva, 2007). In the present research, we assume that learning orientation can produce better performance in terms of product innovation whether it is capable to stimulate self-organization in the form of strategic flexibility capability (Černe, Jaklič, Škerlavaj, Aydinlik, & Polat, 2012; Martin-de Castro et al., 2013; Zhou & Wu, 2010). In addition, we postulate that this mediation is simultaneously conditioned by endogenous dynamics as innovation culture and the capability to seek and select exogenous information in the form of market acuity (Guinot, Chiva, & Mallén, 2013; Rosenzweig & Roth, 2007). The research then attempts to observe how the strategic effects

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of learning orientation unfold, i.e., how company-wide learning orientation unleashes its generative potential in term of product innovation through achievement of greater flexibility in relation to endogenous conditioning and capability to get exogenous information.

Hypothesis development

Early contributions on learning orientation agreed that learning arouses from individuals' actions (Antonacopoulou & Chiva, 2007). However, more recent research shifted the attention toward the role of people's collective practices within organizations, thus, locating learning at the group level by considering the connections and interconnections that exist in the organization (Park & Kim, 2018). Such a perspective is coherent with the social complexity view, which reinforces the idea that a company develops learning orientation only when new knowledge is created, combined, assimilated, and used by the multiplicity of agents that compose the company itself (Chiva et al., 2010).

Companies following this *modus operandi* develop a continuous improvement-oriented climate capable of producing changes in terms of innovation. By being open to new ideas and new ways of working, the organization is more likely to be exposed to new technologies, new processes and new approaches (Manesh, Pellegrini, Marzi, & Dabic, 2020). Donate and Guadamillas (2011) show that learning orientation is the prerequisite toward a culture oriented at the consideration of internal information while at the same time pursuing openness, which is essential for successful product innovation. The relationship between learning orientation and product innovation was further strengthened by Kumar, Jabarzadeh, Jeihouni and Garza-Reyes (2020), which showed that learning orientation encourages the organization to see product innovation as an ongoing process, rather than a one-time event (Caputo & Ayoko, 2021). The investigation of the relationship between learning orientation and product innovation has been fundamentally limited to large companies in specific industries (Calantone et al., 2002), yet in today's competitive business environment, the ability to innovate and shape new products is also critical for SMEs (Hervas-Oliver et al., 2021). As demonstrated by Keskin (2006) when SMEs exhibit learning orientation, they are more likely to identify customer needs, understand the competition, and develop innovative products by uniting external insights and internal knowledge in a purposeful way. Learning orientation also helps SMEs keep abreast of market trends and understand the customer perspective, which is critical to developing successful products (Keskin, 2006). Still, to nurture learning orientation in product innovation SMEs should create a learning environment that encourages experimentation and exploration (Rhee et al., 2010). This can be done by providing employees with the resources and support they need to explore new ideas and develop innovative solutions (Mori, Cavaliere, Sassetti, & Caputo, 2022). Moreover, SMEs should take advantage of external sources of knowledge. This can be done by forming partnerships and alliances with other organizations and leveraging their knowledge and expertise (Caloghirou, Kastelli, & Tsakanikas, 2004). Hereby, we propose:

Hypothesis 1: *Learning orientation has a positive effect on product innovation.*

Learning is then a relevant source of competitive advantage for SMEs (Tyre & Von Hippel, 1997). To what concern competitive and uncertain environments, it was observed how companies characterized by the aptitude to learn better detect emerging trends, understand competition, identify internal inefficiencies in an easier way, and consequently develop timely and appropriate responses (Van de Vrande et al., 2009).

Hereafter, learning orientation is related to the ability of the organization to change according to the outcome of the learning process. High levels of learning orientation are not just about the organizational capabilities to learn something new but regards the possibility for the organization to critically observe internal mistakes and external change and gather opportunities to change in a more suitable way (Calantone et al., 2002).

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This vision is consistent with extant literature on dynamic capabilities (Baker et al., 2022; Eisenhardt & Martin, 2000). Capabilities related to learning orientation are fundamental to stimulate reconfiguration of companies. Through learning orientation employees identify what could be improved about how processes are run, share their opinion, and improve processes according to feedbacks from their peers (Wang, 2008). The sum of employees' learning processes contributes in such a regard to the overall learning of the company and contribute to the increase of its capabilities (Mori et al., 2022; Wilhelm, Maurer & Ebers, 2022). Likewise, thanks to learning orientation information from external sources could be absorbed and then combined with new internal insights to shape and validate the final product decisions (Pellegrini & Ciappei, 2015). Following these perspectives, learning orientation, contributes to the development of generative capabilities, which in turn provide that a business may renew its strategic approach to innovation thanks to multiple iterations occurring internally (Sun & Zou, 2018).

As learning orientation is an integral element of the renewal process of a company, it has been deemed linked to strategic flexibility of a company (Kumar et al., 2020). Strategic flexibility was defined by Zhou and Wu (2010, p. 511) as the sum of organizational capabilities aiming at 'structuring and coordinating various resources and functional units' through the absorption and validation of new information and the subsequent willingness to adjust the way a process is run. Hence, it is possible to consider how through learning orientation a company may be more prone to change its structure and use existing knowledge and resources in a different way (Rialti, Marzi, Caputo, & Mayah, 2020). Following these perspectives and in accordance with social complexity theory, learning orientation allows for the reassessment of existing norms and serves as an essential prerequisite for developing strategic flexibility, that explicates internal re-organization attitude.

Hereby, we propose:

Hypothesis 2: *Learning orientation has a positive effect on strategic flexibility.*

The relationship between strategic flexibility and innovation performance has long been explored in literature (Zhou & Wu, 2010). Bock, Opsahl, George and Gann (2012) observed how thanks to flexibility companies are more eager to innovate their business model. Flexible companies are more capable to address emerging problems (Kapasuwan, Rose, & Tseng, 2007). Such a trait is related to increased capability to identify inefficiency and to act accordingly. Thanks to flexibility, companies could better integrate new technologies being more culturally adjustable in their processes (Rialti et al., 2020).

Due to their characteristics, flexible companies may coordinate existing resources to develop something new (Hull & Covin, 2010). Then, strategic flexibility has been related to explorative innovation (Ali, 2021). With advanced exploration capabilities these companies may identify new markets in an easier fashion and reap the benefits deriving from increasing competitiveness (Rialti, Zollo, Ferraris, & Alon, 2019). Recent studies have also emphasized how strategic flexibility is critical to cope with environmental dynamism and consequently to respond to increasingly complex market demands (Haarhaus & Liening, 2020).

As such, SMEs embedded with learning orientation are favourable to allocate more resources to experiment the development of new products through self-organization (Chapman & Hyland, 2004; Yuan, Feng, Lai & Collins, 2018). Even product design may be affected in such contexts, as in these companies' employees may perceive a culture where they can contribute to experimentation and the proposal of innovative solutions or new product features (Zhou & Wu, 2010). Thus, the emphasized perspective is that innovative performance outcomes can be achieved through internal re-adaptation driven by learning orientation.

Hereby, we propose:

Hypothesis 3: *Strategic flexibility has a positive effect on product innovation.*

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Social complexity theory provides that learning orientation pertains to two domains: multilevel learning and self-organization (Antonacopoulou & Chiva, 2007). The first regards how learning spans from individuals to groups and the whole organization. The second observes how through learning processes external information permeates in the system and it is used to reconfigure the way the organization is working. Self-organization, hence, is the internal mechanism of learning orientation enacting internal capabilities to integrate and absorb external knowledge (Chiva et al., 2010). In detail, self-organization describes how internal learning orientation contributes to the development of internal knowledge management capabilities; thus, by self-organization companies may detect which external information is relevant, absorb it, interpret it, and make it reach the right individual, which could in turn disseminate it in the organization (Antonacopoulou & Chiva, 2007).

This process has therefore been deemed as related to the ways in which the organization could reinvent itself during turbulence through strategic flexibility. In such a vein, we assumed the importance of innovation culture in this latter relationship. Innovation culture is a system of value which describes how much an organization is open and ready in respect of innovative solutions (Martin-de Castro et al., 2013). Organizations characterized by innovation culture are aware of innovation and ways to pursue it. Hereby, innovation culture may reinforce how an organization identifies opportunities and exploits them thanks to the internal integration (Bock et al., 2012).

For this reason, endogenous innovation culture could strengthen the relationship between learning orientation and strategic flexibility. In accordance with social complexity, we therefore assume that innovative culture represents the expression of the set of interactions that occur within an enterprise which are necessary to promote learning.

At the same time, the importance of market acuity capability in the relationship between strategic flexibility and product innovation may emerge. In the wake of the re-configuration occurring due to strategic flexibility achievement in organization characterized by learning orientation, market acuity could strengthen the success of product innovation endeavours (Rosenzweig & Roth, 2007). This phenomenon occurs as market acuity pertains to the capability in which an organization interacts with the markets. As product innovation aims at customers, businesses wishing to succeed need to be receptive toward the market and customers. Market acuity then represents a proxy to observe how learning-oriented companies obtain exogenous information to integrate customers' information in product development processes. Although market acuity signifies a firm's ability to comprehend the market in which it operates, this capability can evolve based on the organization's interactions with the external environment.

For these reasons, we propose the two following moderation hypotheses:

Hypothesis 4: *Innovation culture strengthens the relationship between learning orientation and strategic flexibility.*

Hypothesis 5: *Market acuity strengthens the relationship between strategic flexibility and product innovation.*

Figure 1 graphically represents the proposed research model.

Methodology

This study employs a survey method to collect data from managers of SMEs. Data has been gathered in April 2023 through an online questionnaire distributed via the Prolific platform (www.prolific.ac). The accuracy of participant profiles and the reliability of this approach are supported by numerous studies on SMEs that have utilized this platform (Marzi, Manesh, Caputo, Pellegrini, & Vlačić, 2023; Schweitzer & Mai, 2021). Additionally, Prolific allows for the selection of participants based on specific characteristics required for the research, ensuring the suitability of the sample (Marzi et al., 2023; Schweitzer & Mai, 2021). We deem the identified context particularly appropriate

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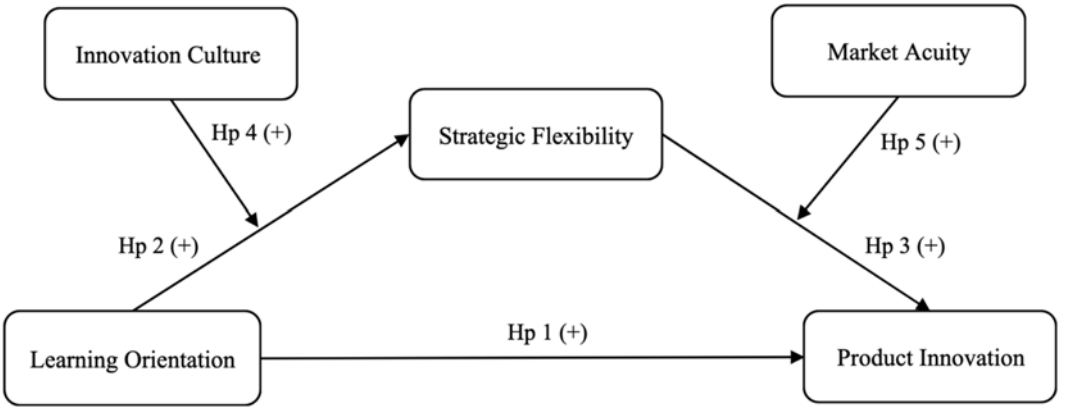

Figure 1. Research model.
Source: Authors' elaboration.

for testing the proposed hypotheses for three main reasons. First, the UK is a thriving environment for SMEs, with many government policies aiming at supporting the success of this category of business and their strategic renewal. Second, the UK is a normative and culturally homogeneous context to consider, differently for example from UE and the US. Third, SMEs in the UK represent almost the entirety of businesses in terms of numerosity (Calabrese, Cowling & Liu, 2022).

The sample included a set of respondents with significantly different experience in the sector in which they were currently operating. Also, we examined SMEs of different sizes to minimize single-source biases (Groves et al., 2011). Furthermore, to avoid ex ante biases due to directional responses to accomplish the intended objective of the study, we did not disclose our research model, and we put the constructs in a random order, not suggesting a particular configuration of causality (Groves et al., 2011).

In total, 321 questionnaires have been completed. Of them, 21 were removed due to missing data or engagement as emerged from an attention check introduced in the survey (Groves et al., 2011). Thus, the final database of SMEs consisted of 300 observations (Table 1).

In order to ensure the validity of our data and reduce the potential for response bias, we conducted several robustness checks (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). We used independent sample *t*-tests to assess non-response bias, comparing early and late respondents, as well as groups based on gender, industry experience, company position, firm size, and technology levels. We utilized Harman's single factor test to measure common method variance, which showed a total variance of 38.33%, which was below the recommended threshold of 50%. Additionally, we cross-checked our results with a marker variable and correlation matrix procedure, as recommended by Podsakoff et al. (2003). We also used a comparison of the answers of the eliminated respondents with the included respondents to check for self-selection bias and observed no unusual patterns.

Measures

The scales used in the study were derived from pertinent published research to ensure validity (see Table 2). All items were measured on a 7-point Likert scale, ranging from '(1) Strongly disagree' to '(7) Strongly agree'.

Learning orientation was measured with the 8-item scale from Kumar et al. (2020). Product innovation was measured with a 3-item scale from Martin-de Castro et al. (2013). Strategic flexibility was measured through Zhou and Wu (2010) 6-item scale. Innovation culture was measured with 3-item scale from Martin-de Castro et al. (2013) and market acuity was tested through 4-item scale from Rosenzweig and Roth (2007).

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Table 1. Sample characteristics

Respondents' characteristics					
Experience in the sector			*Gender*		
Less than 1 year	8	2.67%	Male	190	63.33%
1–5 years	79	26.33%	Female	110	36.67%
6–15 years	112	37.33%			
16–25	65	21.67%			
More than 25 years	36	12.00%			
Company characteristics					
Company position			*Firm age*		
Manager	212	70.67%	Less than 5 years	16	5.33%
Owner/Entrepreneur	52	17.33%	5–10 years	165	55.00%
Other	36	12.00%	11–20 years	44	14.67%
			21–40 years	63	21.00%
Size (employee number)			More than 40 years	12	4.00%
Less than 5	14	4.67%			
10–20	133	44.33%	*Technological Level*		
21–50	37	12.33%	High-tech	170	56.67%
51–125	83	27.67%	Low-tech	130	43.33%
126–175	25	8.33%			
176–250	8	2.67%			
Grand total	**300**				

Source: Authors' elaboration.

Results

Demographic information

Table 1 presents the characteristics of our respondents. As can be seen, the majority of the sample are men (63.33%) and hold strategic and managerial positions (70.67%). All the companies operate in the manufacturing sector, with the two highest percentages of employees being in the ranges of 10–20 and 51–125. Regardless of their size, more than half of the companies have a high level of technology.

Psychometric properties and correlation analysis

Once received our responses, we checked the reliability of each construct and the correlations, as presented in Tables 2 and 3. All constructs showed satisfactory Cronbach's α values, ranging from .871 (product innovation) to .939 (learning orientation). These results show that the sample understood the meaning of the constructs and that there is a high reliability of the responses obtained. Prior to hypothesis testing, the results of average variance extracted (AVE) for each of the adopted latent constructs are reported, and it was found that all latent constructs had a satisfactory level of AVE, as shows in Table 2. All constructs had acceptable levels of internal consistency, reliability, and convergent validity. All constructs exhibited AVE values above the minimum recommended threshold of .50, demonstrating the convergent validity of the construct measures.

Regarding the Pearson correlation, all values show optimal results. Specifically, all constructs are correlated with the outcome variable, with strategic flexibility showing a correlation of $r = .541$ and learning orientation showing a correlation of $r = .401$. These results indicate that both learning, and re-organization capabilities have a decisive impact on the independent variable. The highest value is

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Table 2. Items and reliability of latent variables

	α	AVE
Product innovation (PI) – 3 items (Martin-de Castro et al., 2013)		
1. In the last 3 years, the number of product innovations developed by our company is higher than my competitors. 2. The percentage of sales with respect to new products, on the total of sales, is higher than the one of our competitors. 3. In the last 3 years, the number of new products with respect to our product portfolio is higher than the one of our competitors.	.871	.79
Strategic flexibility (SF) – 6 items (Zhou & Wu, 2010)		
In responding to changes in the environment, your firm's strategy emphasizes: 1. The flexible allocation of marketing resources (including advertising, promotion, and distribution resources) to market a diverse line of products. 2. The flexible allocation of production resources to manufacture a broad range of product variations. 3. The flexibility of product design (such as modular product design) to support a broad range of potential product applications. 4. Redefining product strategies in terms of which products the firm intends to offer and which market segment it will target. 5. Reconsuring chains of resources the firm can use in developing, manufacturing, and delivering its intended products to targeted markets. 6. Redeploying company's resources effectively to support the firm's intended product strategies.	.892	.65
Learning orientation (LO) – 8 items (Kumar et al., 2020)		
1. We basically agree that their company's ability to learn is the key to get competitive advantage. 2. The sense around here is that employee learning is an investment not an expense. 3. Learning in our company is seen as a key commodity necessary to guarantee organizational survival. 4. The basic values of this company include learning as key to improvement. 5. There is a good deal of company's conversation that keeps alive the lessons learned from history. 6. We always analyse unsuccessful company' endeavours and communicate the lessons learned widely. 7. We have specific mechanisms for sharing lessons learned in companies' activities from department to department (unit to unit, team to team). 8. Top management repeatedly emphasizes the importance of knowledge sharing in our company.	.939	.70
Innovation culture (IC) – 3 items (Martin-de Castro et al., 2013)		
1. Our company encourages creativity, innovation, and/or the development of new ideas, as cultural values. 2. A common system of values, beliefs, and objectives exists in our company, directed towards innovation. 3. Our company encourages experimentation and innovation in order to improve work processes.	.909	.84
Market acuity: adapted from Rosenzweig and Roth (2007)		
1. Our company can have a good understanding of competitors' strengths and strategies. 2. Our company can anticipate customers' product or service needs. 3. Our company can understand target markets better than competitors. 4. Our company can understand the changing boundaries of the industry.	.894	.76

Source: Authors' elaboration.

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Table 3. Correlation among variables

Variable	*M*	1	2	3	4	5
1. Product innovation	4.50	–				
2. Learning						
orientation	5.01	.401**	–			
3. Strategic flexibility	4.85	.541**	.538**	–		
4. Innovation culture	5.09	.421**	.759**	.573**	–	
5. Market acuity	5.35	.482**	.685**	.617**	.643**	–

Source: Authors' elaboration.
Numbers are rounded to the nearest thousand. **$p < .05$; *$p < .1$. $n = 300$.

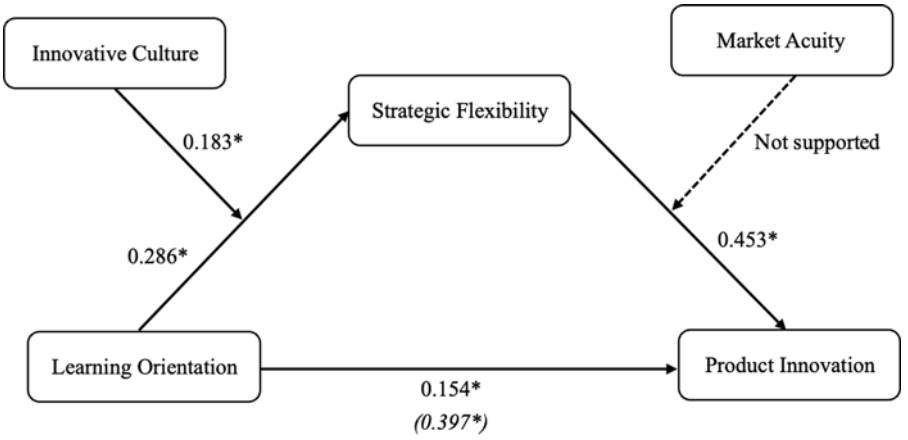

Figure 2. Results of the multiple regression.
Source: Authors' elaboration.

represented by the interaction between learning orientation and innovation culture, demonstrating that endogenous variables are essential for re-evaluating existing procedures and values. Market acuity is correlated with learning at $r = .685$, further reinforcing the idea that learning can result from both internal interactions and interactions with the target market.

Structural model

After conducting the analysis of the descriptive statistics, we employed the structural equation modelling methodology using AMOS software (v.26) to test our hypotheses. The objective was to assess the regression weights – paths or static influences between latent variables – in order to empirically verify the hypothesized relationships (see Figure 2).

The findings indicate that our Hypothesis 1 posits a positive effect of learning orientation on product innovation. This hypothesis is empirically supported ($\beta = +.397$, $p < .01$). Regarding the effect of learning orientation on strategic flexibility (Hypothesis 2), we identified a positive and significant relationship ($\beta = +.286$, $p < .01$).

In terms of Hypothesis 3, which asserts that strategic flexibility positively influences product innovation, the coefficient is positive and significant ($\beta = +.453$, $p < .01$). Thus, Hypothesis 3 receives strong empirical support. The strategic flexibility variable, in addition to being influenced by learning orientation and affecting product innovation, serves as a mediating factor in the primary relationship. Specifically, it functions as a partial mediator, reducing the effect of learning orientation on product innovation to $\beta = +.154$, $p < .05$.

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Table 4. Summary of hypothesized effects

HP	Description	Obtained results
HP1	Positive effect of LO on PI	*Supported*
HP2	Positive effect of LO on SF	*Supported*
HP3	Positive effect of SF on PI	*Supported*
HP4	Positive moderating effect of IC on the relationship between LO and SF	*Supported*
HP5	Positive moderating effect of MA on the relationship between SF and PI	*Not supported*

Source: Authors' elaboration.

The mediation analysis of strategic flexibility followed Baron and Kenny's (1986) four-step procedure: the first condition was met as learning orientation (the independent variable) significantly impacted product innovation (the dependent variable); the second phase requires that the independent variable impacts the mediating variable, i.e., strategic flexibility. This condition was supported, and Hypothesis 2 was confirmed; the third step necessitates that the mediator significantly impacts the dependent variable (see Hypothesis 3); finally, the original relationship between the independent and dependent variables ($\beta = +.397$, $p < .01$) must be diminished or rendered non-significant due to the mediator, indicating partial or full mediating effects. Since the original effect was diminished, we can consider strategic flexibility a partially significant mediating variable in the core relationship.

Concerning the moderating effects, Hypothesis 4 posits a positive moderating effect of innovation culture on the relationship between learning orientation and strategic flexibility. The model demonstrates that the coefficient is positive and significant ($\beta = .183$, $p < .01$). Therefore, Hypothesis 4 also receives empirical support from our sample. Hypothesis 5 posits a positive moderating effect of market acuity on the relationship between strategic flexibility and product innovation. However, this hypothesis does not achieve a satisfactory p-value to warrant empirical support ($\beta = .017$, $p > .10$).

Our model exhibits robust explanatory power for the strategic flexibility variable. Utilizing the multiple square correlation index (R^2), we were able to explain 33% of the variance in flexibility due to the combined effects of learning orientation and innovation culture. Additionally, we accounted for 32% of the variance in the independent variable.

Table 4 summarizes the obtained findings per each hypothesis, while Figure 2 shows the result contextualized in our theoretical model.

Discussion and implications

Aligning with existing organizational knowledge management literature, the first finding of our research pertains that learning orientation has a positive effect on product innovation (Calisir et al., 2013; Kumar et al., 2020). This relationship exists in a direct form also whether SMEs represent the unit of analysis. Learning-oriented SMEs are in fact more capable to learn from experiences and external occurrences due to their openness, thus these businesses may be better than competitors in turning this knowledge into new products (Calantone et al., 2002).

Still, the second finding shows strategic flexibility's mediating role in this relationship (Real et al., 2014). Particularly, the results posit that strategic flexibility is capable to explain the majority of the hypothesized relationship between learning orientation and product innovation in SMEs. It is therefore assumable that product innovation derives from learning orientation whether the company is capable to exploit learning to apprehend response mechanisms to change, and to improve its adjusting capabilities by achieving strategic flexibility (Rialti et al., 2019, 2020). This occurrence may be explicated by considering how through learning unexpressed dynamic capabilities ensuring reconfiguration can awaken (Benassi & Rialti, 2024; Jurksiene & Pundziene, 2016). Such a finding is coherent with social complexity perspective (Chiva et al., 2010). Learning orientation is related to improved greater self-organization (Antonacopoulou & Chiva, 2007), the generation of new knowledge can

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indeed promote a better attitude toward reconfiguration of internal resources and capabilities to take the fullest advantage of the benefits yielded from internal interactions and the relationship with external stakeholders. Learning-oriented SMEs are actually characterized by an environment that encourages experimentation, which can lead to breakthroughs in product development while mostly relying on existing knowledge and resources and, in this context, strategic flexibility illustrates the capacity of companies to adapt when addressing new stimuli (Chakma & Dhir, 2023; Zhou & Wu, 2010).

The third finding regards the positive influence of innovation culture on the relationship between learning orientation and strategic flexibility. According to the social complexity perspective, companies tend to learn based to the sum of individual propensity to pursue innovation (Chiva et al., 2010). Specifically, this finding shows that the presence of an innovative culture helps in the generation to create the necessary conditions for having an effective organizational learning orientation and the capabilities to be strategically flexible. Innovative culture encourages employees to take risks and be open to change, which is necessary for an organization to have the ability to adapt to external changes and reorganize resources for assimilating new knowledge (Martin-de Castro et al., 2013). Finally, market acuity, which is the ability to anticipate changes in the market, understand customer behaviour, and make decisions that maximize profits (Rosenzweig & Roth, 2007), does not have a moderating effect on the relationship between strategic flexibility and product innovation. Such an occurrence may be interpreted in relation to the overreaching role of learning orientation. Companies embedded with this orientation are indeed prone to gather information from external stakeholders autonomously, consequently they may not need additional information sources related specifically to customers and market (Caputo & Ayoko, 2021).

The paper therefore contributes to organizational knowledge management literature and social complexity research by explicating the intermediate factors playing a role in the relation among learning orientation and product innovation in SMEs (Alerasoul et al., 2022). It contributes to the first among the aforementioned streams by providing a more detailed perspective about learning orientation importance as an antecedent of strategic flexibility and product innovation. In detail, it emerged how learning make reconfiguration easier, which in turn may drive product innovation through a different utilization of existing knowledge and resources (Teece, 2018). Then, it contributes to the second stream by stressing how collaborative processes deriving from learning orientation may support SMEs to maintain their competitiveness and overcome the limitations deriving from low resource levels or lack of structured innovation processes (Calantone et al., 2002; Chiva et al., 2010).

In term of practical suggestions, it is possible to delineate some managerial implications for SMEs.

SMEs are structured around the relationships and the network they can create with stakeholders; it is possible to suggest to strengthen relationships to invest in practices fostering learning orientation aimed at external knowledge integration. To do so, SMEs managers may incentives employees to seek innovation outside the company (i.e., through the participation to events or to training courses). Managers may also participate more actively to discussion about product innovation with employees. The nature of SMEs promotes lean communication, which can be harnessed to foster dialogic exchange about new ideas via better feedback mechanisms (Rialti & Filieri, 2024). Additionally, SMEs managers may promote adaptive and responsive processes targeting a greater understanding past experiences and mistakes (Mori et al., 2022). Such a strategy may promote the adaptation of existing knowledge for new objectives thanks to the integration of new information related to the needs of the environment in which they operate. Therefore, managers should try to view learning orientation not as an inclination, but as a core value that guides the company toward improving the system in which it operates. It is also fundamental to stress how flexibility needs to be maintained over time. For this reason, it is possible to recommend SMEs managers to simulate situations which may be stressful for the company. A solution might be represented by constant innovation exercises and simulations aiming at developing new products. Monetary incentives such as 'idea bounties' can potentially allow for a greater involvement of the workforce (Madanaguli et al., 2023).

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Conclusions and limitations

The present research observes the importance of learning orientation in businesses wishing to embark on product innovation initiatives (Černe et al., 2012). Learning orientation allows SMEs, through innovation culture, to achieve strategic flexibility, thus making these businesses better in adjusting and reconfiguring existing knowledge and resources to create something which may suit the market. In the context of SMEs, such an occurrence is relevant as these businesses frequently lack explorative units, and creating an environment oriented toward the maximum valorization of internal knowledge may represent the discriminant between success and demise (Marzi et al., 2023). Learning-oriented SMEs are henceforth capable to draw advantage from complexity by having improved mechanisms to use together internal and external knowledge and apply it to develop new products (Chiva & Habib, 2015).

Notwithstanding our findings, the research is still limited in at least some aspects. First, we focused on UK SMEs (Calabrese et al., 2022). The consideration of diverse contexts (i.e., by running cross-countries research; Hu, Filieri, Acikgoz, Zollo, & Rialti, 2023) may generate diverse results. Second, we focused on manufacturing businesses. In such a regard, it may be relevant to consider technological product-oriented businesses, which have diverse mechanisms to generate product innovation. Third, we have not considered the potential impact of technologies such big data analytics or artificial intelligence on the processes of knowledge collection. Hence, future research should potentially consider how these elements may influence successful product innovation in organizations characterized by high learning orientation. Fourth, a gap still exists in respect of other capabilities that may be relevant in affecting the relationship between learning orientation and product innovation. A common example may be represented by capabilities related to the realm of organization ambidexterity research (Rialti et al., 2019). Finally, the research is rooted on survey-based methods and regression. In such a regard, a qualitative observation of the phenomenon may shed some light on new micro-mechanisms not observable using surveys. As an example, a comparison between multiple cases can shed further lights about micro-foundational capabilities necessary to support integration of external knowledge, or about the process underlying the origin of flexibility and adjustment through co-specialization (Benassi & Rialti, 2024).

References

Addicott, R., McGivern, G., & Ferlie, E. (2006). Networks, organizational learning and knowledge management: NHS cancer networks. *Public Money and Management*, *26*(2), 87–94.

Akella, D. (2010). Learning together: Kolb's experiential theory and its application. *Journal of Management & Organization*, *16*(1), 100–112.

Alerasoul, S. A., Afeltra, G., Hakala, H., Minelli, E., & Strozzi, F. (2022). Organisational learning, learning organisation, and learning orientation: An integrative review and framework. *Human Resource Management Review*, *32*(3), 100854.

Ali, M. (2021). Imitation or innovation: To what extent do exploitative learning and exploratory learning foster imitation strategy and innovation strategy for sustained competitive advantage? *Technological Forecasting and Social Change*, *165*, 120527.

Anderson, B. S., Covin, J. G., & Slevin, D. P. (2009). Understanding the relationship between entrepreneurial orientation and strategic learning capability: An empirical investigation. *Strategic Entrepreneurship Journal*, *3*(3), 218–240.

Annosi, M. C., Marzi, G., Ciampi, F., & Rialti, R. (2022). An ambidextrous approach to practice-based innovation for social product development: Lessons from a Dutch company. *IEEE Transactions on Engineering Management*, *69*(2), 376–387.

Antonacopoulou, E., & Chiva, R. (2007). The social complexity of organizational learning: The dynamics of learning and organizing. *Management Learning*, *38*(3), 277–295.

Ayoko, O. B., Caputo, A., & Mendy, J. (2021). Management research contributions to the COVID-19: A bibliometric literature review and analysis of the contributions from the *Journal of Management & Organization*. *Journal of Management & Organization*, *27*(6), 1183–1209.

Bae, B., & Choi, S. (2021). The effect of learning orientation and business model innovation on entrepreneurial performance: Focused on South Korean start-up companies. *Journal of Open Innovation: Technology, Market, and Complexity*, *7*(4), 245–260.

Baker, W. E., Mukherjee, D., & Perin, M. G. (2022). Learning orientation and competitive advantage: A critical synthesis and future directions. *Journal of Business Research*, *144*, 863–873.

https://doi.org/10.1017/jmo.2024.52 Published online by Cambridge University Press

Baker, W. E., & Sinkula, J. M. (1999a). Learning orientation, market orientation, and innovation: Integrating and extending models of organizational performance. *Journal of Market-Focused Management*, *4*(4), 295–308.
Baker, W. E., & Sinkula, J. M. (1999b). The synergistic effect of market orientation and learning orientation on organizational performance. *Journal of the Academy of Marketing Science*, *27*(4), 411–427.
Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173.
Benassi, M., & Rialti, R. (2024). Exploring the Metaverse from a legacy company perspective: A capabilities-based view. *California Management Review*, *66*, 51–79.
Bock, A. J., Opsahl, T., George, G., & Gann, D. M. (2012). The effects of culture and structure on strategic flexibility during business model innovation. *Journal of Management Studies*, *49*(2), 279–305.
Calabrese, R., Cowling, M., & Liu, W. (2022). Understanding the dynamics of UK Covid-19 SME financing. *British Journal of Management*, *33*(2), 657–677.
Calantone, R. J., Cavusgil, S. T., & Zhao, Y. (2002). Learning orientation, firm innovation capability, and firm performance. *Industrial Marketing Management*, *31*(6), 515–524.
Calantone, R. J., Harmancioglu, N., & Droge, C. (2010). Inconclusive innovation "returns": A meta-analysis of research on innovation in new product development. *Journal of Product Innovation Management*, *27*(7), 1065–1081.
Calisir, F., Altin Gumussoy, C., & Guzelsoy, E. (2013). Impacts of learning orientation on product innovation performance. *The Learning Organization*, *20*(3), 176–194.
Caloghirou, Y., Kastelli, I., & Tsakanikas, A. (2004). Internal capabilities and external knowledge sources: Complements or substitutes for innovative performance? *Technovation*, *24*(1), 29–39.
Caputo, A., & Ayoko, O. B. (2021). Entrepreneurship, innovation and organizational behaviour. *Journal of Management & Organization*, *27*(4), 621–625.
Caputo, A., & Pellegrini, M. M. (Eds.). (2020). *The entrepreneurial behaviour: Unveiling the cognitive and emotional aspect of entrepreneurship*. London (UK): Emerald Publishing Limited.
Černe, M., Jaklič, M., Škerlavaj, M., Aydinlik, A. Ü., & Polat, D. D. (2012). Organizational learning culture and innovativeness in Turkish firms. *Journal of Management & Organization*, *18*(2), 193–219.
Chakma, R., & Dhir, S. (2023). Exploring the determinants of ambidexterity in the context of Small and Medium Enterprises (SMEs): A meta-analytical review. *Journal of Management & Organization*, 1–29.
Chapman, R., & Hyland, P. (2004). Complexity and learning behaviors in product innovation. *Technovation*, *24*(7), 553–561.
Chiva, R., Grandío, A., & Alegre, J. (2010). Adaptive and generative learning: Implications from complexity theories. *International Journal of Management Reviews*, *12*(2), 114–129.
Chiva, R., & Habib, J. (2015). A framework for organizational learning: Zero, adaptive and generative learning. *Journal of Management & Organization*, *21*(3), 350–368.
D'Angelo, A., & Presutti, M. (2019). SMEs international growth: The moderating role of experience on entrepreneurial and learning orientations. *International Business Review*, *28*(3), 613–624.
Del Giudice, M., Scuotto, V., Papa, A., Tarba, S. Y., Bresciani, S., & Warkentin, M. (2021). A self-tuning model for smart manufacturing SMEs: Effects on digital innovation. *Journal of Product Innovation Management*, *38*(1), 68–89.
Donate, M. J., & Guadamillas, F. (2011). Organizational factors to support knowledge management and innovation. *Journal of Knowledge Management*, *15*(6), 890–914.
Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal*, *21*(10-11), 1105–1121.
Groves, R. M., Fowler, F. J. Jr, Couper, M. P., Lepkowski, J. M., Singer, E., & Tourangeau, R. (2011). *Survey methodology*. Hoboken: John Wiley & Sons.
Guinot, J., Chiva, R., & Mallén, F. (2013). Organizational trust and performance: Is organizational learning capability a missing link? *Journal of Management & Organization*, *19*(5), 559–582.
Gutiérrez, L. G., Bustinza, O. F., & Molina, V. B. (2012). Six sigma, absorptive capacity and organisational learning orientation. *International Journal of Production Research*, *50*(3), 661–675.
Haarhaus, T., & Liening, A. (2020). Building dynamic capabilities to cope with environmental uncertainty: The role of strategic foresight. *Technological Forecasting and Social Change*, *155*, 120033.
Hervas-Oliver, J. L., Sempere-Ripoll, F., & Boronat-Moll, C. (2021). Technological innovation typologies and open innovation in SMEs: Beyond internal and external sources of knowledge. *Technological Forecasting and Social Change*, *162*, 120338.
Hu, B. (2014). Linking business models with technological innovation performance through organizational learning. *European Management Journal*, *32*(4), 587–595.
Hu, L., Filieri, R., Acikgoz, F., Zollo, L., & Rialti, R. (2023). The effect of utilitarian and hedonic motivations on mobile shopping outcomes. A cross-cultural analysis. *International Journal of Consumer Studies*, *47*(2), 751–766.
Huang, H. C., Lai, M. C., Kao, M. C., & Sung, C. H. (2014). A team-learning framework for business model innovation in an emerging market. *Journal of Management & Organization*, *20*(1), 100–120.
Hull, C. E., & Covin, J. G. (2010). Learning capability, technological parity, and innovation mode use. *Journal of Product Innovation Management*, *27*(1), 97–114.

https://doi.org/10.1017/jmo.2024.52 Published online by Cambridge University Press

Jurksiene, L., & Pundziene, A. (2016). The relationship between dynamic capabilities and firm competitive advantage: The mediating role of organizational ambidexterity. *European Business Review*, *28*(4), 431–448.
Kapasuwan, S., Rose, J., & Tseng, C. H. (2007). The synergistic effects of strategic flexibility and technological resources on performance of SMEs. *Journal of Small Business and Entrepreneurship*, *20*(3), 257–272.
Keskin, H. (2006). Market orientation, learning orientation, and innovation capabilities in SMEs: An extended model. *European Journal of Innovation Management*, *9*(4), 396–417.
Kumar, V., Jabarzadeh, Y., Jeihouni, P., & Garza-Reyes, J. A. (2020). Learning orientation and innovation performance: The mediating role of operations strategy and supply chain integration. *Supply Chain Management: An International Journal*, *25*(4) 457–474.
Madanaguli, A., Dhir, A., Talwar, S., Clauss, T., Kraus, S., & Kaur, P. (2023). Diving into the uncertainties of open innovation: A systematic review of risks to uncover pertinent typologies and unexplored horizons. *Technovation*, *119*, 102582.
Manesh, M. F., Pellegrini, M. M., Marzi, G., & Dabic, M. (2020). Knowledge management in the fourth industrial revolution: Mapping the literature and scoping future avenues. *IEEE Transactions on Engineering Management*, *68*(1), 289–300.
Martin-de Castro, G., Delgado-Verde, M., Navas-López, J. E., & Cruz-González, J. (2013). The moderating role of innovation culture in the relationship between knowledge assets and product innovation. *Technological Forecasting and Social Change*, *80*(2), 351–363.
Marzi, G., Manesh, M. F., Caputo, A., Pellegrini, M. M., & Vlačić, B. (2023). Do or do not. Cognitive configurations affecting open innovation adoption in SMEs. *Technovation*, *119*, 102585.
Mori, M., Cavaliere, V., Sassetti, S., & Caputo, A. (2022). Employee voice: A knowledge map to provide conceptual clarity and future research directions. *Journal of Management & Organization*, 1–27.
Park, S., & Kim, E. J. (2018). Fostering organizational learning through leadership and knowledge sharing. *Journal of Knowledge Management*, *22*(6), 1408–1423.
Pellegrini, M. M., Ciampi, F., Marzi, G., & Orlando, B. (2020). The relationship between knowledge management and leadership: Mapping the field and providing future research avenues. *Journal of Knowledge Management*, *24*(6), 1445–1492.
Pellegrini, M. M., & Ciappei, C. (2015). Ethical judgment and radical business changes: The role of entrepreneurial perspicacity. *Journal of Business Ethics*, *128*, 769–788.
Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879.
Real, J. C., Roldán, J. L., & Leal, A. (2014). From entrepreneurial orientation and learning orientation to business performance: Analysing the mediating role of organizational learning and the moderating effects of organizational size. *British Journal of Management*, *25*(2), 186–208.
Rhee, J., Park, T., & Lee, D. H. (2010). Drivers of innovativeness and performance for innovative SMEs in South Korea: Mediation of learning orientation. *Technovation*, *30*(1), 65–75.
Rialti, R., & Filieri, R. (2024). Leaders, let's get agile! Observing agile leadership in successful digital transformation projects. *Business Horizons*.
Rialti, R., Marzi, G., Caputo, A., & Mayah, K. A. (2020). Achieving strategic flexibility in the era of big data: The importance of knowledge management and ambidexterity. *Management Decision*, *58*(8), 1585–1600.
Rialti, R., Zollo, L., Ferraris, A., & Alon, I. (2019). Big data analytics capabilities and performance: Evidence from a moderated multi-mediation model. *Technological Forecasting and Social Change*, *149*, 119781.
Rosenzweig, E. D., & Roth, A. V. (2007). B2B seller competence: Construct development and measurement using a supply chain strategy lens. *Journal of Operations Management*, *25*(6), 1311–1331.
Sawaean, F., & Ali, K. (2020). The impact of entrepreneurial leadership and learning orientation on organizational performance of SMEs: The mediating role of innovation capacity. *Management Science Letters*, *10*(2), 369–380.
Schilling, M. A. (2002). Technology success and failure in winner-take-all markets: The impact of learning orientation, timing, and network externalities. *Academy of Management Journal*, *45*(2), 387–398.
Schweitzer, F., & Mai, R. (2021). The double-edged sword of intricate idea enactment in product development. *Journal of Business Research*, *132*, 392–402.
Sheng, M. L., & Chien, I. (2016). Rethinking organizational learning orientation on radical and incremental innovation in high-tech firms. *Journal of Business Research*, *69*(6), 2302–2308.
Singh, R., Charan, P., & Chattopadhyay, M. (2022). Effect of relational capability on dynamic capability: Exploring the role of competitive intensity and environmental uncertainty. *Journal of Management & Organization*, *28*(3), 659–680.
Sinkula, J. M., Baker, W. E., & Noordewier, T. (1997). A framework for market-based organizational learning: Linking values, knowledge, and behavior. *Journal of the Academy of Marketing Science*, *25*, 305–318.
Spithoven, A., Vanhaverbeke, W., & Roijakkers, N. (2013). Open innovation practices in SMEs and large enterprises. *Small Business Economics*, *41*(3), 537–562.
Sun, S. L., & Zou, B. (2018). Leveraging current innovation for the future: Understanding generative capability. *IEEE Engineering Management Review*, *46*(4), 46–50.
Teece, D. J. (2018). Dynamic capabilities as (workable) management systems theory. *Journal of Management & Organization*, *24*(3), 359–368.

https://doi.org/10.1017/jmo.2024.52 Published online by Cambridge University Press

Tyre, M. J., & Von Hippel, E. (1997). The situated nature of adaptive learning in organizations. *Organization Science*, *8*(1), 71–83.
Valenza, G., Caputo, A., & Calabrò, A. (2023). Is small and medium-sized beautiful? The structure and evolution of family SMEs research. *Journal of Family Business Management*, *13*(2), 453–485.
Van de Vrande, V., De Jong, J. P., Vanhaverbeke, W., & De Rochemont, M. (2009). Open innovation in SMEs: Trends, motives and management challenges. *Technovation*, *29*(6-7), 423–437.
Wang, C. L. (2008). Entrepreneurial orientation, learning orientation, and firm performance. *Entrepreneurship Theory and Practice*, *32*(4), 635–657.
Wilhelm, H., Maurer, I., & Ebers, M. (2022). (When) Are dynamic capabilities routine? A mixed methods configurational analysis. *Journal of Management Studies*, *59*(6), 1531–1562.
Wilson, G. A., & Liguori, E. (2023). Market orientation, failure learning orientation, and financial performance. *Journal of Small Business Management*, *61*(6), 3027–3045.
Xie, X., Gao, Y., Zang, Z., & Meng, X. (2020). Collaborative ties and ambidextrous innovation: Insights from internal and external knowledge acquisition. *Industry and Innovation*, *27*(3), 285–310.
Yuan, Y., Feng, B., Lai, F., & Collins, B. J. (2018). The role of trust, commitment, and learning orientation on logistic service effectiveness. *Journal of Business Research*, *93*, 37–50.
Zhou, K. Z., & Wu, F. (2010). Technological capability, strategic flexibility, and product innovation. *Strategic Management Journal*, *31*(5), 547–561.

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