



International entrepreneurship in innovative SMEs: Examining the connection between CEOs' dynamic managerial capabilities, business model innovation and export performance

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ABSTRACT

International entrepreneurship scholars aim to understand how small and medium-sized enterprises (SMEs) achieve long-term competitive advantage and international success. This paper examines how business model innovation (BMI) helps entrepreneurial and innovative SMEs in improving export performance suggesting that changes in value creation, value delivery, and value capture are required to target international customers effectively. Additionally, drawing on the dynamic managerial capabilities literature, we look at the role of CEOs' managerial capabilities on BMI. A quantitative study using partial least squares structural equation model (PLS-SEM) was conducted on 189 innovative Spanish SMEs operating in business-to-business (B2B) international markets. Our findings provide new insights into the underexplored relationship between BMI and export performance generating new evidence regarding the mechanisms through which innovative SMEs may improve export performance. We also highlight the positive relevance of CEOs' managerial social capital (external connectivity) and managerial cognition (empowering leadership) to foster BMI. Finally, managerial implications and future research directions are proposed.

1. Introduction

International entrepreneurship (IE) is an attractive research field among International Business (IB) scholars (Zucchella, 2021). While a stream of previous research on IE has focused on the creation of international new ventures (Buccieri, Javalgi & Cavusgil, 2020), another fruitful stream has been examining the pursuit of entrepreneurial opportunities across national borders among established firms (Reuber, Knight, Liesch & Zhou, 2018). International entrepreneurship, “the discovery, enactment, evaluation, and exploitation of opportunities—across national borders—to create future goods and services” (Oviatt & McDougall, 2005, p. 540), is of paramount importance for the export performance of SMEs (Paul, Parthasarathy & Gupta, 2017; Ferreras-Méndez, Fernández-Mesa & Alegre, 2019). IE has provided fundamental insights into the antecedents of SMEs international performance (Paul et al., 2017; Zucchella, 2021), where the entrepreneurial activities, renewal strategies, and behavioral orientations are deemed critical (Jones, Coviello & Tang, 2011). IE has also increased our understanding of the SMEs' resource constraints when expanding into foreign markets (Knight, Moen & Madsen, 2020; Haddoud, Jones &

Newbery, 2021).

In this study, we contend that going beyond a uniform view of SMEs allows to better understand their differences in IE. Some SMEs behave more proactively and differentiate themselves from competitors (Knight et al., 2020) by adopting strategies and business models that may not be applicable in their domestic markets (Landau, Karna & Sailer, 2016; Child, Hsieh, Elbanna, Karmowska, Marinova & Puthusserry, 2017). Innovative SMEs, defined as those who actively develop new products, services, or processes, have superior technological competences and absorptive capacity, and are more flexible and quicker in their response to environmental changes (Pla-Barber & Alegre, 2007; OECD, 2008; Hervás-Oliver, Sempere-Ripoll & Boronat-Moll, 2021). As a result, innovative SMEs have a higher propensity for IE initiatives than more traditional SMEs (Saridakis, Idris, Hansen & Dana, 2019; Hennart, Majocchi, & Hagen, 2021). Because most of previous research on IE has focused on undifferentiated SMEs, we argue that further attention needs to be paid within IE to the specific context of innovative SMEs.

IE's recent findings suggest that “creating and capturing value from distance depends on the resources, capabilities, relationships and business models that the firm deploys” (Zucchella, 2021; p. 7). Business

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model refers to the value creation, delivery, and capture mechanisms that are being used (Teece, 2010). Business model innovation (BMI) “happens when the company modifies or improves at least one of the value dimensions” (Abdelkafi, Makhotin & Posselt, 2013; p.13). Recent studies are looking at BMI and SMEs’ internationalization (e.g., Child et al., 2017; Hennart et al., 2021; Colovic, 2022) suggesting that firms operating in international markets need to adapt their business model to the local conditions to capture the created value (Landau et al., 2016; Najafi-Tavani, Zantidou, Leonidou & Zeriti, 2023). BMI is to promote value creation, delivery, and appropriation through the design of a new value proposition (Amit & Zott, 2001; Foss & Saebi, 2018) and, when internationalizing, this requires innovative, proactive, and risk-seeking behaviors beyond national borders intended to create value for firms (McDougall & Oviatt, 2000). As a result, following previous recent studies on IE (Hennart et al., 2021; Kalinic & Brouthers, 2022), we argue that business modeling and exports are important elements of IE in the context of innovative SMEs.

Extant research has examined different antecedents of BMI (Ramdani, Binsaf & Boukrami, 2019) such as top management mindfulness (Bhatti, Santoro, Khan & Rizzato, 2021), managers’ entrepreneurial character (Futterer, Schmidt & Heidenreich, 2018), firm-level’s entrepreneurial orientation (Ferreras-Méndez, Olmos-Peñuela, Salas-Vallina & Alegre, 2021), or dynamic capabilities (Čirjevskis, 2019; Heider, Gerken, van Dinther & Hülsbeck, 2021). However, further research is required to better understand the connection between dynamic capabilities and IE (Gölgeci, Assadinia, Kuivalainen & Larimo, 2019; Saridakis et al., 2019). As noted by Teece (2014) BMI is hard to replicate by competitors because it is built on the idiosyncratic capabilities of entrepreneurial managers. In this sense, we argue that Dynamic Managerial Capabilities (DMCs) are to play a relevant role in changing business models to improve export performance. The DMCs view highlights the entrepreneurial role of the manager as the one who undertakes activities related to creativity and innovation within firms (Helfat & Martin, 2015a) and conceptualizes the existence of a portfolio of different managerial capabilities (Vuorio & Torkkeli, 2023). Previous studies provide some insights regarding the impact of DMCs on BMI, however, their conceptualizations are partial, and the empirical evidence is still scarce. For instance, Wang, Yi, and Wei (2023) focus specifically on how the internal social capital -on its own and separately from other DMCs- within the TMT members relates to the business model design. Similarly, Heubeck (2023) focuses specifically on the managerial human capital -again, separately from other DMCs- as an enabler of digital business model transformation, without considering eventual direct effects of managerial social capital or managerial cognition. A thorough conceptualization of DMC including cognition, human capital, and social capital (Adner & Helfat, 2003; Helfat & Martin, 2015a; Wang, Luo, Maksimov, Sun & Celly, 2019), and BMI including value creation, value delivery, and value capture (Teece, 2010; Latifi, Nikou & Bouwman, 2021) could provide clearer and more extensive insights on their influence over export performance -one main component of international performance for innovative SMEs-, and facilitate eventual comparisons in future studies. As a result, following Gölgeci et al. (2019), Saridakis et al. (2019), and Hennart et al. (2021), we posit that a new and comprehensive approach is required to examine: (1) the starting trigger role that DMCs, i.e. dynamic capabilities at the individual level, have on BMI of innovative SMEs, and (2) the explanatory power of BMI on export performance in the context of international innovative SMEs. Such approach is likely to provide new

theoretical insights to IE literature and new guidelines and recommendations for decision-makers.

International SMEs rely on the managerial capabilities of individual entrepreneurs¹ to overcome their limited resources. However, little attention has been given to the role of DMCs in understanding the mechanisms through which SMEs nurture their international expansion and performance (e.g., Vuorio & Torkkeli, 2023). Applying a DMC approach provides a comprehensive as well as parsimonious framework to understand the antecedents of entrepreneurial behaviors like BMI. That is why IE scholars are calling for more research from a strategic perspective using the DMCs view (Pitelis, 2022; Pitelis, Teece & Yang, 2023; Tabares, Tavera, Álvarez Barrera & Escobar-Sierra, 2023). By focusing on the entrepreneur’s DMC we add to the call made by Verbeke and Ciravegna (2018) for shedding light on the linkages between the capabilities and risk taking behavior of entrepreneurs on the one hand, and the firm-level decisions and international strategy on the other hand.

Accordingly, given the research gap described above, we focus on the following research questions: how do owners/CEOs’ DMCs relate to the BMI in innovative SMEs? And how does BMI relate to the export performance of innovative SMEs?

Drawing on the dynamic managerial capabilities, this study aims to address this research gap by examining the individual-level heterogeneous capabilities and their influence on BMI in the context of innovative SMEs. To examine the effect of CEOs’ DMCs on the different dimensions of BMI - namely, value creation, value delivery, and value capture -, this study uses the framework applied in a set of entrepreneurial SMEs by Wang et al. (2019), i.e., expertise breadth, external connectivity, and empowering leadership. More specifically, we investigate if and which CEO’s DMCs influence BMI in international innovative SMEs, which represents a well-structured boundary condition as suggested by Foss and Saebi (2017). Furthermore, our study also aims to ascertain the effect of BMI, viewed as a dynamic process of innovation that is intrinsically related to entrepreneurship (Velu & Jacob, 2016). To achieve these research objectives, our study draws on a database from a sample of 189 Spanish innovative SMEs operating in international markets through exporting activities.

By combining the dynamic capabilities view with the IE perspective, our research provides three important contributions to the IE, DMCs, and BMI literatures: (1) the managerial capabilities of CEOs are useful in guiding innovative SMEs to achieve BMI as an entrepreneurial action, (2) BMI connects individual-managerial capabilities to superior export performance in innovative SMEs, and (3) DMCs, particularly CEOs’ external connectivity, and empowering leadership represent critical building blocks for BMI, which favors in turn export performance, an important outcome of IE in innovative SMEs. As international innovative SMEs are becoming increasingly important for sustainable economic growth and social development, our study provides timely managerial implications for CEOs to deal with BMI and succeed in foreign markets.

2. Theory and hypotheses

2.1. BMI and export performance

Exporting has been highlighted as of extreme importance for SMEs’ growth, productivity, and competitiveness (Cassiman & Golovko, 2011; Ayllón & Radicic, 2019). Exporting activities entail “operating in a market characterized by geographic and psychic distance, in which

¹ In this study, we focus on the role of the owners/CEOs of Innovative SMEs. In line with Hennart et al., (2021) and with Zucchella (2021) these individuals are the entrepreneurs, as they are the “ones in charge of forming/exploiting and exploring the international opportunities”. To simplify, we will talk about CEOs when focusing on their managerial role, however referring to both types of individuals. We thank an anonymous reviewer for this clarification.

firms need to deal with new competitive rules in a different cultural, economic or political environment: distribution channels, local rivalry, and businesses practices, customer tastes or legal aspects" (Villar, Alegre & Pla-Barber, 2014; p.38). In this context, despite having a competitive advantage in their home markets thanks to their business models (Foss & Saebi, 2017), firms are often challenged and pushed to innovate their business models to achieve a fit to the international context (Landau et al., 2016). In other words, BMI is a must for firms that operate in international markets. International markets are considered dynamic business markets where changes in customers' needs and competition require significant adjustments. Giving this context and concerning what types of changes are necessary to suit local requirements, BMI helps firms to be entrepreneurial and innovative by redesigning the organizational architecture through which a firm creates, delivers, and captures value from international markets (Teece, 2018; Ahsan & Fernhaber, 2019; Brock & Hitt, 2024). We suggest that when supplying foreign markets, BMI may be particularly valuable to compete effectively against local competitors (Jones & Pitelis, 2015), to gain local legitimacy (Landau et al., 2016), to attend a new international market niche (Asemokha, Musona, Torkkeli & Saarenketo, 2019) and to finally appropriate created value (Johnson, Christensen & Kagermann, 2008).

One of the keys to achieving exporting success is the amount of value that the exporter firm can create (Silva, Styles & Lages, 2017). In this regard, BMI enables firms to articulate a new value proposition through which the value created by offering new products and services is delivered to customers satisfying in this way their needs and expectations (Chesbrough, 2010; Teece, 2018). Moreover, with the advent of digital technologies, innovative SMEs have now the possibility to offer smart solutions and create value in novel forms through the interplay between products, services, and software (Amit & Zott, 2001; Huikkola, Kohtamäki & Ylimäki, 2022). Therefore, innovative SMEs can create value in foreign countries by offering solutions to meet the customers' needs through an innovative business model.

Likewise, the choice of the value delivery channel is a fundamental business model decision, since it can also influence a firm's ability to capture value in an international market (Kalinic & Brouthers, 2022). In this regard, the challenges and risks are not the same for exporters using an Internet B2B platform (e.g., Alibaba) as using an internalized exporting channel (Kathuria, Majumdar & Peng, 2023). According to Teece (2018), firms should organize their resources and capabilities to ensure the value delivery to customers by collaborating and sharing responsibilities with business partners. Similarly, Zott, Amit, and Massa (2011) noted that a good business model should extend the firm's resources beyond their own limits by leveraging part of the firm's activities in the value networks (e.g., distribution channels). Indeed, firms that ignore the collaboration and partnerships with external players (Pitelis, 2022) are likely to be outperformed by other firms that emphasize a value co-creation process with external stakeholders because they might be in a better situation to deliver their products and services to a wider range of customers (Berti & Pitelis, 2022; DaSilva & Trkman, 2014).

Another important feature of an effective business model is how it bridges value creation and value capture for achieving adequate performance in foreign markets (Lanzolla & Markides, 2021; Pitelis, 2022). It is crucial to create and deliver value to customers, but also to capture value while doing so (Teece, 2010). In this sense, BMI may confer innovative SMEs the possibility to exploit not only the actual firm's revenue stream(s) but also to capture value from new ones (Latifi et al., 2021), which is fundamental for ensuring the capacity of the firm for making money in the short and the long term (Itami & Nishino, 2010) in international markets. For instance, a firm can design a new cost structure thanks to establishing new partnerships or transform its old revenue model based on transactions to a leasing model (Clauss, 2017). Thus, we put forward the following hypothesis:

Hypothesis 1.. BMI is positively related to export performance in

innovative SMEs.

2.2. CEOs' dynamic managerial capabilities and BMI

Dynamic capabilities allow organizations to innovate and respond to changing environmental demands (Teece, Pisano, & Shuen, 1997; Wang & Ahmed, 2007; Ambrosini & Bowman, 2009). Building on the insights from the growing theoretical framework of dynamic capabilities, Adner and Helfat (2003) introduced the concept of Dynamic Managerial Capabilities (DMCs) as "the capabilities with which managers build, integrate, and reconfigure organizational resources and competences" (p.1012). DMCs are the mechanisms through which managers can adapt their firms' resources and capabilities (Helfat & Martin, 2015a) and match them with the new environmental challenges (Kor & Mesko, 2013).

According to Adner and Helfat (2003), DMCs draw on a set of three underlying factors: (1) managerial human capital, (2) managerial social capital, and (3) managerial cognition. Managerial human capital refers to the learned skills, knowledge, and expertise that managers acquire over the course of their lives through many different activities such as training, education, and learning experiences (Becker, 1964; Castanias & Helfat, 2001). Managerial human capital should be considered one of the most important resources owned by any organization (Sirmon & Hitt, 2009) as differences in managers' functional knowledge domain and expertise allow them to sense, seize, and reconfigure the resources differently (Helfat & Martin, 2015a). Managerial social capital refers to "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual" (Nahapiet & Ghoshal, 1998; p. 243). Managerial social capital is specific to the individual and provides unique opportunities to obtain new resources, as could be knowledge (Blyler & Coff, 2003). Managerial cognition refers to those "managerial beliefs and mental models that serve as a basis for decision making" (Adner & Helfat, 2003, p. 1021). Managerial cognition enables top managers to mobilize resources (Huy & Zott, 2019) and can be considered the lens through which top managers decode information and strategic decisions are made (Nadkarni & Narayanan, 2007).

Recent studies have started to examine the role of DMCs in the IE literature. DMCs have been argued to be related to entrepreneurship (Helfat & Martin, 2015a) and the firm's international expansion (Fainshmidt, Nair & Mallon, 2017). In this regard, Andersson, and Evers (2015) argued that DMCs relate positively to international opportunity recognition in young firms, which can lead to superior international performance. In addition, Vuorio and Torkkeli (2023) highlighted how different dynamic managerial capability portfolios can explain the early internationalization of SMEs. Therefore, these IE studies have explicitly considered the existence of differences in individual-level managerial capabilities when explaining firm international performance. In this study, we take a step back and delve into the role of the three different managerial capabilities of the SMEs' CEO for the innovation of the business model. Specifically, we provide arguments for why and how managerial human capital, managerial social capital, and managerial cognition relate to innovative SMEs' BMI.

We follow the approach of Wang and colleagues (2019) and we conceptualize CEOs' managerial human capital as their expertise breadth (Kehoe & Tzabbar, 2015). We understand CEOs' managerial social capital as their external connectivity (Peng & Luo, 2000). Finally, we conceptualize a CEO's managerial cognition as empowering leadership (Thomas & Velthouse, 1990).

2.2.1. CEO expertise breadth

Expertise breadth refers to the diversity of sources such as education, previous career experiences, and international experience through which CEOs gain and accumulate expertise (Wang et al., 2019). Formal education is an important source of expertise breadth (Becker, 1964) because it improves individuals' knowledge, skills, and procedures

involved in their judgment and decision-making processes (Helfat & Martin, 2015a). Beyond formal education, CEOs of innovative SMEs can benefit from greater prior industry experience as it provides valuable knowledge and skills in the form of tacit knowledge otherwise inaccessible (Dimov, 2010). In this sense, CEOs with high levels of industry experience would grasp better the competitive nature of the given industry including the opportunities and threats, the specific regulations, or the way to establish relationships with customers and suppliers (Kor, 2003; Hmieleski, Carr & Baron, 2015), which can result in the development and implementation of a novel business model (Snihur & Bocken, 2022). In addition, former international experience broadens the CEO's expertise and it might promote the search for a novel business model. This assumption is based on the fact that CEOs are exposed to diverse knowledge, which in turn may enhance the coordination and reduce the costs of the firm's operations (Hsu, Chen & Cheng, 2013) or they can use the knowledge and skills accumulated from their past overseas experiences to undertake the process of BMI (Kor & Mesko, 2013).

Ultimately, expertise breadth is likely to influence CEOs' capacity for sensing opportunities or threats related to BMI (Helfat & Martin, 2015b), promoting the opportunity to create novel value propositions for attending a new market niche (Aspara, Hietanen & Tikkanen, 2010), particularly in SMEs. However, a CEO's expertise breadth not only can affect the ability to sense new opportunities, but also to uncover those with no future (Dimov, 2010). Additionally, the CEO's expertise breadth is critical to developing organizational capabilities (e.g., organizational learning) (Loon, Otake-Ebode & Stewart, 2020) and integrating them within an organization, which is fundamental to seizing a business opportunity (Teece, 2018). Furthermore, a higher CEOs' expertise breadth would influence and allow them to make more accurate and informed decisions (Kor & Mahoney, 2005), which may enable better use of the firm's resources and capabilities to promote business model reconfiguration (Hitt & Ireland, 2002; Aberg & Torchia, 2020; von Delft, Kortmann, Gelhard & Pisani, 2019). Based on the above, we put forward the following hypothesis:

Hypothesis 2.. *CEO expertise breadth is positively related to BMI in innovative SMEs.*

2.2.2. CEO external connectivity

External connectivity results from the different formal and informal relationships that owners and managers develop with external key stakeholders (e.g., suppliers or consumers) (Adler & Kwon, 2002; Helfat & Martin, 2015a). As a capability, it enables CEOs to externally obtain information and resources (Wang et al., 2019) to boost BMI. This managerial capability may be especially critical in SMEs due to the greater freedom of action of CEOs and the smaller size of the top management team (Hambrick & Finkelstein, 1987; Cao, Simsek & Zhang, 2010). Indeed, these managers become key figures connecting the internal and external networks of their firms (Adner & Helfat, 2003) in such a way that differences in their linkages to external networks might affect their access to non-overlapping knowledge (Granovetter, 1973), and the existence of structural holes (Burt, 1992), and to be otherwise more susceptible to biases that impede BMI (Sjödin, Parida & Visnjic, 2022).

First, the external connectivity directly impacts how managers sense and interpret information about external business conditions (Kor & Mesko, 2013). That is, stronger connections and greater access to critical information may help CEOs to have a deeper insight into new opportunities and threats and adjust their perspectives regarding BMI (Wang et al., 2019). For instance, a CEO's external connectivity may help him or her to achieve a social position that facilitates access to diverse and relevant information, therefore improving the effectiveness of his/her decisions under conditions of uncertainty, as is the case of BMI (Schneckenberg, Velamuri, Comberg & Spieth, 2016; Martin & Bachrach, 2018). Apart from information, a CEO's external connectivity "can

provide access to resources such as financing and skilled personnel that are needed to seize opportunities to develop [...] BMIs" (Helfat & Martin, 2015b; p. 426). This is critical for supporting innovation processes in SMEs due to their relative lack of resources (Heider et al., 2021). Thus, a CEO's external network can influence the reconfiguration of the resources and capabilities (Blyler & Coff, 2003; Hughes, Morgan, Ireland & Hughes, 2014) needed for undertaking the implementation of a novel business model (Teece, 2018). Third, a CEO's external connectivity can increase the firm legitimacy within its ecosystem of stakeholders (Klein, Schneider & Spieth, 2021). This may be particularly effective for SMEs because in this type of firms it is not easy to establish relationships with top business partners or to design mutually beneficial agreements (Snihur, Zott & Amit, 2021). Finally, CEO's external connectivity may prove valuable in contributing to deal with the resistance to a new business model by social movements and foster supportive regulation (Ricart, Snihur, Carrasco & Berrone, 2020; Marano, Tallman & Teegen, 2020). We therefore hypothesize that:

Hypothesis 3.. *CEO external connectivity is positively related to BMI in innovative SMEs.*

2.2.3. CEO empowering leadership

Empowering leadership denotes "the process by which leaders share power with employees by providing additional responsibility and decision-making authority over work and resources as well as the support needed to handle the additional responsibility effectively" (Martin, Liao & Campbell, 2013; p. 1375). Empowering leadership is particularly appropriate when a firm needs to develop an unstructured, non-routine, complex, and long-term task, with high levels of uncertainty -as is the case of innovative firms-, and where creativity is critical (Houghton & Yoho, 2005; Magni & Maruping, 2013). In this regard, CEO empowering leadership can stimulate the creativity of the employees (Wang et al., 2019) and the absorptive capacity of the management team (Kor & Mesko, 2013), which may be essential in a trial-and-error learning process such as BMI (Sosna, Treviño-Rodríguez & Velamuri, 2010; Bocken & Snihur, 2020). Thus, a CEO's empowering leadership approach welcomes different opinions and open discussion (Doz & Kosonen, 2010), supporting in this way employees' creativity (Zhang & Bartol, 2010; Amundsen & Martinsen, 2015).

This leadership can also increase employees' motivation which is particularly important for BMI (Teece & Linden, 2017), since employees' resistance to change may become a powerful barrier (Shin, Taylor & Seo, 2012; Frankenberger, Weiblen, Csik & Gassmann, 2013). Therefore, it is critical that CEOs empower and motivate employees (Zhang & Bartol, 2010). To do that, CEOs should promote opportunity thinking and participative goals setting among employees (Srivastava, Bartol & Locke, 2006), which in turn would increase their autonomous motivation (Gagné & Deci, 2005) for doing activities under conditions of risk-taking and uncertainty, as it is the case of BMI (Teece, 2010).

Finally, BMI often requires decisions that are not easily reversible (Doz & Kosonen, 2010; Casadesus-Masanell & Ricart, 2010). In this sense, CEOs' empowering leadership is linked to better and quicker decisions (Logan & Ganster, 2007), as it supports subordinates to take greater responsibility for internal activities (Cheong, Yammarino, Dionne, Spain & Tsai, 2019), allowing CEOs to have more time for scanning the business environment in search for opportunities (Xu, Tang & Liu, 2023). Hence, we propose the following hypothesis:

Hypothesis 4.. *CEO empowering leadership is positively related to BMI in innovative SMEs.*

The research model and hypotheses are represented in Fig. 1.

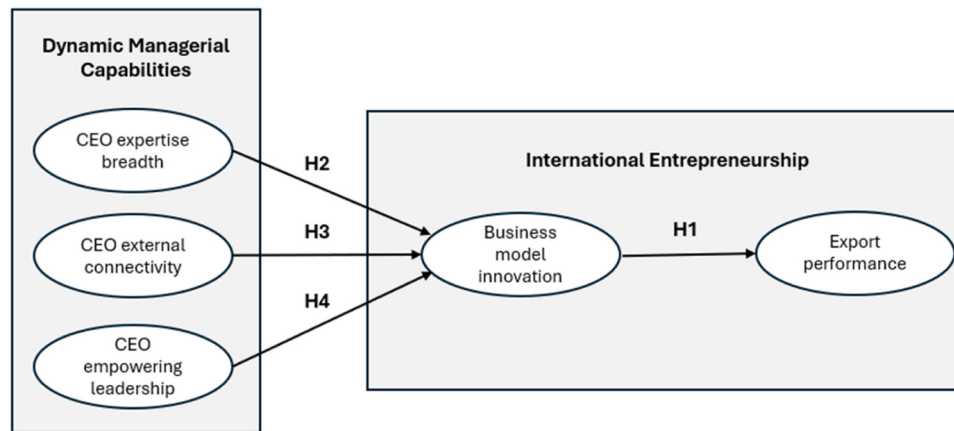


Fig. 1. Research model and hypotheses.

3. Methodology

3.1. Sample and data collection

Our empirical analyses rely on primary data coming from a survey addressed to Spanish innovative SMEs operating on an international and B2B basis. We look at innovative SMEs to emphasize the frequency of cases experiencing BMI in our sample. We focus on international B2B firms to analyze a more harmonic sample in terms of changes within business models. We elaborated an online questionnaire using measurement scales that had been previously validated. Before administering the final survey, we conducted a pre-test with three SME owners/CEOs and two academics to ensure the relevance and clarity of the items.

We identified our target population by using the Directory of Spanish Innovative SMEs. It originally included 5.723 firms (20th July 2022). These firms have been granted the Innovative SME seal, a recognition by the Spanish Ministry of Science and Innovation to SMEs with remarkable innovative behavior in terms of R&D and technological innovation. In line with the Oslo Manual (OECD, 2018) and with previous studies (Flor & Oltra, 2004; Alegre & Pasamar, 2018), the award goes to those firms that accomplish at least one of the following characteristics in the previous three years. Specifically, the award goes to those firms that accomplish at least one of the following characteristics in the previous three years: (1) having received public funding for innovation projects, (2) holding its own patent in exploitation or having got tax deductions derived from verified innovation activity, (3) holding official certifications on innovative activity by certifier organizations. Thus, these are externally recognized entrepreneurial firms. After removing those firms whose innovative seal had expired, and those who were not active and with no international activity (checked through the ORBIS database), we obtained a population of 1.604 innovative SMEs. We collected data from July to October 2022, and the questionnaire was addressed to the owner/CEO of the firm. After removing cases with missing data, our final sample consisted of 189 innovative SMEs operating in international markets, resulting in an 11.78 % response rate. Table 1 provides descriptive information about the sample.

3.2. Measures

To capture the three core underpinnings of DMCs, we use the measures developed and validated by Wang et al. (2019), without removing any items, maintaining in this way the validity and reliability of the measurements (Heggstad, Scheaf, Banks, Hausfeld, Tonidandel & Williams, 2019).

3.2.1. CEO expertise breadth

We use three different sources of expertise: education, career

Table 1

Sample descriptive statistics.

Items	Categories	Quantity	Percentage
Firm size	Micro firms (<10)	49	25.92 %
	Small firms (10-49)	105	55.56 %
	Medium firms (50-250)	35	18.52 %
Firm age	< 5 years	21	11.11 %
	5-10 years	61	32.27 %
	11-20 years	48	25.40 %
	> 20 years	59	31.22 %
CEO gender	Male	167	88.36 %
	Female	22	11.64 %
CEO age	20-40	27	14.29 %
	41-60	143	75.66 %
	61-80	19	10.05 %

experience, and international experience. Education was assessed by the number of years of the CEO's formal education (Magni & Maruping, 2013); career experience was measured by the number of years that the CEO worked in the industry where the company operates now (Dimov, 2010); and finally, international experience was measured by the number of years the CEO worked overseas (Hsu et al., 2013). A larger number of years indicates a higher degree of CEO expertise breadth. To calculate the CEO expertise breadth, we do the logarithmic transformations of the sum of the three types of expertise.

3.2.2. CEO external connectivity

CEO external connectivity captures the extent to which a CEO possesses and uses deep connections with external stakeholders to develop a firm's business operations (Peng & Luo, 2000). Specifically, we measured CEO external connectivity through a four-item scale from 1 to 7 (see Appendix).

3.2.3. CEO empowering leadership

CEO empowering leadership captures the extent to which the CEO of the focal firm shares power with his/her subordinates (Pearce & Sims Jr, 2002; Ensley, Hmieleski & Pearce, 2006). On a four-item scale from 1 to 7, respondents were asked to assess their level of agreement regarding a set of dimensions associated with empowering leadership (see Appendix).

3.2.4. BMI

BMI was measured according to the construct developed by Latifi et al. (2021). It was conceived as a second-order reflective-formative construct formed by three dimensions - value creation, value delivery, and value capture - and seven items ranging from 1 to 7 (see Appendix). Value creation, in which respondents were asked to indicate if their firms

had introduced a new product or service as a new value proposition (Mitchell & Coles, 2003; Giesen, Berman, Bell & Blitz, 2007). *Value delivery* was measured by asking respondents to reflect on issues related to collaborating or sharing new responsibilities with business partners and focusing on a new market segment (Itami & Nishino, 2010). Finally, *value capture* reflects the firm's capacity to create new revenue streams and introduce a new pricing mechanism (Johnson et al., 2008).

3.2.5. Export performance

We employed a construct through which the respondents rated their export performance in international markets regarding the profitability, sales, and growth of their export operations (Lages, Silva & Styles, 2009; Ferreras-Méndez et al., 2019). The response scale for the items ranged from 1 to 7 (see Appendix).

3.2.6. Control variables

Based on prior studies (e.g., Bauweraerts, Sciascia, Naldi & Mazzola, 2019), we employed several control variables at both organizational and individual levels to protect against possible alternative explanations. At the organizational level, we controlled for *firm size*, because it is more likely for bigger firms to have more resources available and be more willing to invest in and experiment with its business model, and this may determine export performance differences between firms. Firm size was measured as the logarithm of the total number of employees. We also controlled for *firm age*, measured as the logarithm of the number of years since the firm was founded. Scholars pointed out that firms with more experience may enjoy the benefits of learning and could be more efficient (Brettel, Strese & Flatten, 2012). At the individual level, we controlled for *CEO age*, measured as the logarithm of the number of years old, since recent research has suggested that this individual-level factor can influence different dimensions related to the firm's growth and performance (Belenzon, Shamshur, & Zarutskie, 2019).

3.3. Biases control

To test the quality of data, we carried out some analysis to assess for potential data issues. We checked late-response bias through an independent t-test by comparing the answers of early and late respondents (Armstrong & Overton, 1977) and the results showed no significant differences between the groups. Thus, the data is free of late-response bias. Subsequent analysis checked for non-response bias by undertaking an independent sample t-test by comparing the responding and non-responding firms regarding the following variables: firm age, firm size, and revenues. Our results did not find any statistically significant difference between groups. Thus, non-response bias is not a major issue in this study. In addition, when possible, we have crosschecked part of the data collected in our survey with secondary sources of information to ensure the reliability of CEOs' answers.

In addition, given that we collected data by using surveys and from a single informant, we followed the recommendations of Podsakoff, MacKenzie, Lee, and Podsakoff (2003) to prevent and control for common method bias (CMB). First, one of the most common problems in a survey is related to asking about unfamiliar or vague concepts. In this regard, we pretested the survey to assess the understating of the questions and to reduce the difficulty for respondents. Second, CMB can appear by socially desirable responses. For this, we ensured the respondents' anonymity and confidentiality, that there were no right or wrong answers, and that they should feel free and answer all questions as honestly as possible. Third, to increase the motivation of the respondents, we offered all the participants a benchmarking report confronting their answers with the average results for each construct. Fourth, we conducted Harman's one-factor test for the multi-item constructs as a post hoc statistical procedure to check for CMB. The exploratory factor analysis resulted in a single factor that accounted for 25,80 %, that is, less than 50 % of variance, which indicates that CMB should not be considered an important concern. In addition, we also

performed the marker variable test (Lindell & Whitney, 2001) by checking the effect of a theoretically unrelated variable on the conceptual model. We selected *CEO gender* as our marker variable. All correlations between the marker variable and each of constructs of our model were not significant, ranging from -0.067 to 0.142 . These results reinforce the view that CMB is not a serious concern in this study.

Finally, to test for potential endogeneity issues, we followed the Gaussian copula approach suggested by Hult, Hair Jr, Proksch, Sarstedt, Pinkwart, and Ringle (2018). The results did not show any statistically significant value ($p < 0.05$) in any of the Gaussian copulas' values, which suggests that endogeneity should not be a major concern in our research. In addition, including control variables is considered another procedure to address endogeneity concerns.

4. Analysis and results

4.1. Data analysis

The software package SmartPLS 4, based on least squares structural equation modeling (PLS-SEM) (Hair, Risher, Sarstedt & Ringle, 2019), was used for our data processing and analysis. We chose PLS-SEM for several reasons. First, the nature of this study and the fact that some of the relationships have not been hypothesized before, makes PLS an appropriate choice (Hair, Hult, Ringle & Sarstedt, 2016). Second, as our model includes a second-order reflective-formative construct to operationalize BMI, PLS-SEM is a suitable method (Hair et al., 2016; Becker, Klein, & Wetzels, 2012). Accordingly, we assessed and interpreted the PLS model in two stages (Chin, 2010; Becker et al., 2012). In the first stage, we analyzed the adequacy of the reflective and formative measurement models, respectively. In the second stage, once the constructs have proved reliability and validity, the structural part of the model is analyzed and evaluated. Table 2 shows the mean values, standard deviations, and correlations between the variables used in the analysis.

4.2. Measurement model evaluation

4.2.1. Reflective measurement model assessment

Following previous studies (e.g., Ferreras-Méndez, Newell, Fernández-Mesa & Alegre, 2015), we used five criteria to assess the psychometric properties of reflective measures (Hair et al., 2016). First, content validity was assured by using validated scales coming from relevant previous studies and by conducting a pre-test. Second, constructs' dimensionality was successfully assessed through factor loadings (Hair, Ringle & Sarstedt, 2011). Third, to assess the internal consistency reliability of each construct, we used Composite Reliability (Table 3). Four, we assessed the convergent validity of each reflective construct measure through the Average Variance Extracted (AVE) (Table 3). Finally, we satisfactorily assessed discriminant validity through the Fornell-Larcker criterion (Fornell & Larcker, 1981): the square root of the AVE value of each latent variable was higher than the squared correlation between the constructs (Table 4). All of the indicators evaluated met the established thresholds.

4.2.2. Formative measurement model assessment

We used two criteria to assess the formative measurement construct of BMI. First, we assessed potential multicollinearity between the lower-order constructs by checking the Variance Inflation Factor (VIF) values. Our VIFs values ranged from 1.265 to 1.511, so the three indicators of the formative measurement model are below the conservative threshold value of 3 (Hair et al., 2019). Second, using bootstrapping with 5000 bootstrap samples, we also calculated the outer weights, the outer loadings, the T-statistics, and the p-values to assess the suitability of the formative indicators of the second-order BMI construct. Table 5 shows that the only outer weight statistically significant is value delivery. However, the three outer loadings are well over the acceptable level of 0.5 and statistically significant (Hair et al., 2016). Thus, the formative

Table 2

Means, standard deviations and correlations among study variables.

Variables	Mean	s.d.	1	2	3	4	5	6	7	8	9
1. CEO expertise breadth	31.180	11.943	1.000								
2. CEO external connectivity	4.499	1.353	-0.008	1.000							
3. CEO empowering leadership	6.025	0.849	-0.008	0.184 *	1.000						
4. Business model innovation	5.316	1.065	-0.033	0.271 **	0.378 **	1.000					
5. Export performance	4.810	1.487	-0.119	0.141	0.214 **	0.215 **	1.000				
6. Firm size	34.200	38.514	0.008	-0.041	0.061	-0.026	0.103	1.000			
7. Firm age	17.060	14.960	0.184 *	-0.133	-0.062	-0.078	-0.023	0.313 **	1.000		
8. CEO gender	0.880	0.322	0.033	-0.013	-0.067	-0.005	0.024	0.020	0.020	1.000	
9. CEO age	49.070	8.722	0.439 **	-0.046	0.003	-0.046	-0.153 *	0.058	0.285 **	0.099	1.000

Note:

* $p \leq 0.05$ ** $p \leq 0.01$; s.d: Standard deviation**Table 3**

First-order reflective constructs results.

	Factor loading	s.d.	T-Statistics	CR	AVE
CEO external connectivity				0.866	0.619
ECON01	0.655 **	0.116	5.649		
ECON02	0.828 **	0.052	15.919		
ECON03	0.819 **	0.066	12.484		
ECON04	0.830 **	0.066	12.576		
CEO empowering leadership				0.906	0.708
ELEA01	0.884 **	0.041	21.647		
ELEA02	0.849 **	0.049	17.340		
ELEA03	0.872 **	0.040	21.945		
ELEA04	0.755 **	0.052	14.614		
Value creation				0.763	0.617
VCRE01	0.772 **	0.151	5.123		
VCRE02	0.799 **	0.085	9.346		
Value delivery				0.811	0.601
VDEL01	0.878 **	0.055	15.980		
VDEL02	0.884 **	0.036	24.666		
VDEL03	0.500 **	0.133	3.762		
Value capture				0.773	0.636
VCAP01	0.908 **	0.051	17.705		
VCAP02	0.669 **	0.124	5.387		
Export performance				0.927	0.810
EXPER01	0.846 **	0.040	21.135		
EXPER 02	0.922 **	0.022	42.412		
EXPER 03	0.929 **	0.014	65.676		

Note:

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$; T-Statistics for $n = 5000$ subsamples. s.d: Standard deviation.

CR: Composite Reliability. AVE: Average Variance Extracted.

measurement model assessment results support the reliability of each first-order reflective indicator on the overall BMI formative construct.

4.3. Structural model assessment

For examining the structural model, we used the following three criteria: the coefficient of determination (R^2) for the latent variables, the predictive relevance (Q^2), and the significance of the path coefficients (Hair et al., 2016). Table 6 shows the values of the R^2 of each endogenous latent variables introduced in the model. R^2 is a measure of the model's explanatory power. On the one hand, the model explains the 21.2 % of the variance of BMI and, on the other hand, the 10.8 % of the variance of export performance. Therefore, both values are superior to the minimum value of 10 % established by Falk and Miller (1992). These results show that there is coherence between the latent variables of the model and the data. Moreover, to assess the predictive relevance of the proposed model, we used the Stone-Geisser Q^2 statistic (Hair et al., 2016). The Q^2 value is obtained by applying the blindfolding procedure.

Table 4

Discriminant validity analysis.

Path	1	2	3	4	5	6
1. CEO external connectivity	(0.787)					
2. CEO empowering leadership	0.197	(0.841)				
3. Value creation	0.191	0.415	(0.786)			
4. Value delivery	0.254	0.286	0.400	(0.775)		
5. Value capture	0.174	0.313	0.533	0.338	(0.797)	
6. Export performance	0.153	0.213	0.155	0.218	0.151	(0.900)

Note: Diagonal elements are the square root of the AVE (in parenthesis); off-diagonal elements are the square correlations among constructs in the inner model.

When the value of this statistic is superior to zero for a certain endogenous latent variable, its explanatory variable displays predictive relevance. Table 6 shows values of the Q^2 Statistic greater than zero for BMI and export performance. Hence, the predictive relevance of the proposed model is confirmed.

Using bootstrapping, with 5000 bootstrap samples, we obtained the path coefficients and their respective significance levels for the structural model relationships (Table 7). First, our results show that the relationship between BMI and export performance is positive and significant ($p < 0.05$), supporting Hypothesis 1. The second hypothesis predicted that CEO expertise breadth would relate positively to BMI. However, contrary to our prediction, the path coefficient is not statistically significant, so Hypothesis 2 is not supported. Hypothesis 3 predicted that CEO external connectivity would relate positively to BMI. The results show that this path is positive and significant ($p < 0.05$). Thus, Hypothesis 3 is supported. Likewise, results show that CEO empowering leadership has a positive and significant effect on BMI, which supports Hypothesis 4. Likewise, we analyze the f^2 effect size values. Hair et al. (2016) suggested that values higher than 0.02, 0.15, and 0.35 represent small, medium, and large f^2 effect size, respectively. Thus, the associations suggested in H1 and H3 exhibit a small f^2 effect size, while it is interesting to mention the medium f^2 effect size in the relationship between CEO empowering leadership and BMI. Hence, the f^2 effect size values further reinforce our hypothesis, aligning with the results we obtained when assessing the hypotheses through the path coefficients.

Our results also show that most of our control variables did not significantly influence on export performance. Firm size is the only control variable with a positive and significant association with our explained variable.

Table 5

Second-order formative construct results.

Second-order construct	First-order construct	VIF	Outer Weight	T- Statistics	Outer loading	T- Statistics
Business model innovation	Value creation	1.511	0.615	2.771	0.895 * **	6.964
	Value delivery	1.265	0.406 * *	1.694	0.740 * **	4.718
	Value capture	1.494	0.211	1.112	0.705 * **	5.526

Note:

* $p \leq 0.05$ * * $p \leq 0.01$ * ** $p \leq 0.001$; T-Statistics for $n = 5000$ subsamples**Table 6**

Inner model assessment indicators.

Factor	R ²	Q ²
Business model innovation	0.212	0.122
Export performance	0.108	0.055

5. Discussion

This study applies DMC literature to argue that the managerial capabilities of owners/CEOs -that is, those “in charge of forming/ exploiting and exploring the international opportunities” (Zuchella, 2021),- are key to innovate the business model and to improve the international performance of innovative SMEs. More specifically, we answer recent calls for further research on the impact of the managerial capabilities of CEOs on BMI (e.g., Wang et al., 2023; Heubeck, 2023). Our results show that external connectivity and empowering leadership are related positively and significantly to BMI in international innovative SMEs. Moreover, we argue and confirm that BMI, as an entrepreneurial action, relates positively to international performance in the case of innovative SMEs. Hence, our research advances knowledge about the role of CEOs’ DMCs on BMI and its application to enable superior international performance in innovative SMEs.

Theoretically, this research has applied the DMCs view as it focuses on the managerial impact on strategic action, responding to recent calls to better understand the linkages between the capabilities and risk-taking behavior at the individual level and the strategy and performance of international entrepreneurial firms (Verbeke & Ciravegna, 2018; Vuorio & Torkkeli, 2023). DMC framework provides a parsimonious as well as complete lens to better understand the influence of CEOs’ managerial capabilities in fostering BMI as an entrepreneurial action to be competitive in international markets, which enables innovative SMEs to succeed in their exporting activities despite their resources deficiencies. Hence, our study provides complementary insights into the literature on DMCs, as well as that on IE and BMI.

5.1. Theoretical implications

Our research makes several contributions to the literature. First, CEOs’ DMCs represent an important lever to boost BMI in innovative SMEs operating in international markets, where two of these DMCs

make a significant difference: CEO external connectivity as a reflection of their managerial social capital, and CEO empowering leadership as a reflection of the managerial cognition. Our results do not support CEOs’ expertise breadth being a significant facilitator of BMI in international innovative SMEs. In this regard, our results are in line with recent research (Hennart et al., 2021) as the international experience of the entrepreneur does not significantly relate with the business model. In the context of innovative SMEs operating in international markets, CEOs with broader expertise might be more confident in their existing knowledge as well as in past solutions (Sengupta, Abdel-Hamid & Van Wassenhove, 2008) and tend to show more path-dependent behaviors, therefore not focusing on brand new knowledge to achieve BMI. Hence, broader expertise does not trigger the innovation in the BM, by favoring the CEO’s reluctance to experiment and consider alternative and new options not connected to past solutions.

On the other hand, our study is in line with Vuorio and Torkkeli’s (2023) analysis of the role of DMC for international entrepreneurship, as it supports the notion that improved access to resources and information through the CEOs’ external connectivity indeed relates positively with BMI. Therefore, although accessing and maintaining external networks is considered a resource-consuming activity, the benefits of external connectivity may still outweigh the costs. Managers can foster BMI by utilizing their social capital to have access to better resources, and by gaining information and knowledge through their social ties (Vuorio & Torkkeli, 2023; Hughes et al., 2014). In this regard, CEOs’ external connectivity can be a critical trigger of their subsequent decisions to seize business model opportunities and reconfigure the firm’s resource base to enhance BMI. For instance, CEOs’ external connectivity can bring access to resources such as financing or skilled personnel that are required to introduce products and services as a new value proposition (Helfat & Martin, 2015b). Moreover, when changing the value delivery dimension of its business model, a firm needs to share responsibilities and collaborate with new business partners. Thus, access to information and stronger connections with suppliers, distributors, banks, and other partners could help CEOs to examine different alternatives to adjust their decisions when analyzing to enter into new strategic collaborations, reducing the biases that impede the innovation in the business model (Sjödin et al., 2022). In short, the need to pursue business opportunities through BMI in a timely manner raises the value of CEOs’ external connectivity. Our findings suggest that CEOs’ external connectivity represents an effective lever to change the firm’s business model so that it better attracts international customers.

Table 7

Path coefficients.

Path	Path coefficient	Standard error	T- Statistics	p-value	f2	Hypothesis
CEO expertise breadth → BMI	0.013	0.096	0.137	0.891	0.000	H2: Not supported
CEO external connectivity → BMI	0.189	0.089	2.124	0.034	0.043	H3: Supported
CEO empowering leadership → BMI	0.384	0.106	3.619	0.000	0.171	H4: Supported
BMI → Export performance	0.206	0.085	2.425	0.015	0.047	H1: Supported
<i>Control variables</i>						
Firm size → Export performance	0.243	0.078	3.117	0.002	0.050	
Firm age → Export performance	-0.144	0.087	1.663	0.096	0.015	
CEO age → Export performance	-0.117	0.078	1.496	0.135	0.014	

Note: BMI: Business model innovation

Firms operating beyond their national borders should be interested in BMI and should be mindful of the role played by empowering leadership on it. Accordingly, recent studies in international business (e.g., Colovic, 2022) are investigating the phenomena of leadership styles on BMI during the process of internationalization of SMEs. Our empirical research went one step further by suggesting that CEOs' empowering leadership should be considered a salient factor in enhancing BMI in international innovative SMEs. Our study shows that this leadership style can foster BMI by promoting employees' creativity to solve problems without direct supervision, leading to a greater exchange of knowledge, and increasing employees' motivation to look for innovative solutions. Additionally, innovating the business model is a challenging and difficult process for SMEs, where inertia and reluctance from employees might barrier its implementation (Codini, Abbate & Messeni, 2023; Sabaruddin, MacBryde & D'Ippolito, 2023). Thus, a leadership style that promotes employees' motivation can be of utter importance to overcome such resistances (Sosna et al., 2010; Shin et al., 2012).

Second, our results underscore the important effects of BMI on the export performance of innovative SMEs (Najafi-Tavani et al., 2023), shedding light on outstanding empirical questions in the IE literature. For example, Rask (2014) noted that the literature on IE would benefit from investigating empirically the effect of BMI on international performance in international new ventures. Additionally, contributing to IE literature, Asemokha et al. (2019) found that BMI positively and significantly mediates the relationship between entrepreneurial orientation and international performance in SMEs. Our findings contribute to the debate regarding the impact of BMI on international performance by offering theoretical arguments and empirical evidence that innovative SMEs can enhance their foreign performance by undertaking BMI. In this sense, BMI is deemed as an entrepreneurial action (Foss & Saebi, 2017) through which CEOs of innovative SMEs leverage to benefit economically from undertaking exporting activities to international markets. Importantly, we suggest that BMI is an underlying mechanism to understand the international performance of innovative SMEs despite geographical market distance as well as their resource limitations. Our study contributes to previous research (Hennart et al., 2021; Najafi-Tavani et al., 2023) by approaching the innovation of the business model as a process that gives a competitive advantage to innovative SMEs by facilitating the configuration and deployment of resources and their exploitation in the international markets.

Third, referring to our two research questions, our research integrates elements from both dynamic capabilities and IE theories. Indeed, our study offers a comprehensive and cohesive model that reflects DMCs as antecedents of BMI, broadening our understanding of their implication for export performance in innovative SMEs, and developing the interdisciplinary link between DCs and IE literatures. Entrepreneurial and internationalization activities are of fundamental importance to international firms, but the way these firms pursue these activities depends on the managerial capabilities of the key decision makers (Ahsan & Fernhaber, 2019; Vuorio & Torkkeli, 2023). CEO's DMCs are required to pursue and orchestrate routines and capabilities needed to transform the firm's business model so that allows for continuously sensing and seizing opportunities in international markets. More specifically, we find that DMCs, particularly CEOs' external connectivity and empowering leadership, are essential building blocks for BMI, which represents an entrepreneurial activity, favoring IE. This result sheds new light on how DCs relates to IE as called for by Pitelis (2022), providing a novel and complementary perspective to explain differences in international performance. Thus, we contribute to an early body of research that argues the importance of examining dynamic capabilities at the individual level and examining the role of business model innovation to advance the literature of IE (Eriksson Nummela & Saarenketo, 2014; Bucciari et al., 2020).

5.2. Managerial implications

Several practical implications emerge from our results. First, our study shows that the extent to which the more innovative SMEs renew their business models and consequently succeed in the international markets is contingent on networking and leadership managerial capabilities, more so than the CEO's expertise breadth. CEOs acquire knowledge in part through education and work experience, however, this expertise breadth seems not to be sufficient to innovate the firm's business model of an international firm. Presumably, the current disruptive and uncertain environment (Ahlstrom, Arregle, Hitt, Qian, Ma & Faems, 2020) requires that managers address BMI considerably differently from what they have been previously doing (Loon et al., 2020). Therefore, we advise managers to supplement their expertise breadth by renewing, refreshing, and rotating their connections to ensure that they are exposed to new ideas, information, and knowledge.

Second, CEOs wishing to innovate their business model should be actively aware of their leadership style. Our study finds that empowering leadership is critical to getting the workforce involved in achieving the strategic vision associated with a strategic change process such as BMI since it increases the motivation, creativity, commitment, and inspiration of subordinates. Hence, successfully innovating business models requires good empowering leadership skills because tensions inevitably will appear in international firms during a process of organizational change.

Finally, innovating the business model is also a resource and time consuming process, not exempt of risks. Therefore, correctly identifying the design of a new business model together with undertaking the changes required in any of the three dimensions – mainly, value creation, value delivery and, value capture – is critical to succeed in this transformation. Therefore, when managing BMI, CEOs' need to specify which activities, processes, or operations are subject to modification as well as to regularly monitor them.

5.3. Limitations and further research

Our study is subject to several limitations, which provide opportunities for future studies. First, our research employed a sample of firms from a single home country (Spain) and respondents answered based on their perceptions through a questionnaire at a single moment. Future studies may, therefore, seek to confirm our findings using a sample of firms in a country other than Spain or, from multiple countries. Additionally, further research could also adopt a longitudinal or a time-lagged approach that allows for a better comprehension of the relationships. Second, there is an important boundary condition for our findings which also suggest avenues for future studies. This research is explicitly situated in the context of innovative SMEs, and some assumptions are made about this context, the main one being the existence of a single leader in each firm with sufficient power to make decisions referring to BMI. In this regard, in larger firms, where power is more distributed, the relevance of DMCs may be lower. Moreover, analyzing the effect of the DMCs of other firm members such as middle managers (e.g., Greven, Kruse, Vos, Strese & Brettel, 2022) would further enrich our understanding of the process of BMI. In addition, we have focused on the CEOs' DMCs, which is a useful perspective. However, other individual variables such as emotions (Huy & Zott, 2019) or other individual characteristics (Holzmayer & Schmidt, 2020) could also be of interest. Third, while our research focuses on the relationship between CEOs' DMCs and BMI, a consideration of the effect of managerial capabilities on other types of innovation (e.g., product innovation) could be further investigated. Finally, our focus on the potential ability of firms to use BMI to improve international performance leaves room for including macro-level and institutional factors that may affect or moderate this type of innovation. Moreover, given the rapid growth of born global companies, exploring different enablers of BMI would be an exciting research opportunity for advancing our understanding of IE.

6. Conclusion

This research aimed to better understand the role of CEOs' DMCs in fostering BMI, as well as the effect of BMI on international performance in the context of innovative SMEs operating in foreign markets through exporting activities. Therefore, this study examined the joint effect of dynamic *managerial* capabilities view on BMI, and the influence of BMI -which reflects management's entrepreneurial vision and judgment- on how the firm articulates its export operations to sustain and improve its international performance by using a business model enabling value creation, value delivery and value capture when targeting international customers. More specifically, our findings highlight that CEOs' external connectivity and empowering leadership facilitate BMI in international innovative SMEs. What is more, aligned to the IE approach to understanding the international performance of innovative SMEs, our results suggest that BMI, which represents a form of entrepreneurial action, is critical to fully respond to the needs and challenges that innovative SMEs operating in foreign markets face when (re)organizing their

exporting operations to be profitable, increase sales, and grow rapidly in international markets.

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Declaration of interests

None.

Data availability

The data that has been used is confidential.

Appendix

Questionnaire items for CEO external connectivity (Wang et al., 2019).

Please indicate your level of agreement with the following statements about yourself.

1. I have well-established relationship with important government agencies.
2. I have rich and diverse connections with top managers/founders of suppliers, distributors, banks, and other related organizations.
3. I have always used my personal connections with the community to smooth our operations.
4. I always benefit from the external connections with other companies to develop business.

Questionnaire items for CEO empowering leadership (Wang et al., 2019).

Please indicate your level of agreement with the following statements about yourself.

1. I empower my subordinates (the top management team) to take initiatives and participate in goal setting.
2. I empower my subordinates (the top management team) to search for solutions to problems without supervision.
3. I empower my subordinates (the top management team) to explore opportunities and view problems as opportunities rather than obstacles.
4. I reward my subordinates (the top management team) accordingly when they complete a major task.

Questionnaire items for business model innovation (Latifi et al., 2021).

Please indicate your level of agreement with the following statements about your organization.
Value creation.

1. We introduced new products as a new value proposition.
2. We introduced new services as a new value proposition.

Value delivery

3. We started to collaborate with new business partners.
4. We shared new responsibilities with business partners.
5. We focused on a completely new market segment.

Value capture

6. We created new revenue streams.
7. We introduced a new pricing mechanism.

Questionnaire items for export performance (Lages et al. 2009; Ferreras-Méndez et al., 2019).

Please indicate your level of agreement with the following statements about your organization.

1. Our export operations are very profitable.
2. Our export operations have generated a high volume of sales.
3. Our export operations have been growing rapidly.

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