

BOARD-RELATED PROCESSES AND INNOVATION IN SMALL AND MEDIUM-SIZED ENTERPRISES: A CONTINUUM LOGIC AND CONFIGURATIONAL APPROACH

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Abstract

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This article identifies configurations in terms of original board-related processes (i.e., establishment, integration, centralization, and bureaucracy) that can stimulate innovation. A singular theorization is developed around a continuum logic and various theoretical postulates. Its experimentation via a configurational approach (Fiss, 2011; Furnari et al., 2021; Misangyi et al., 2017) has been applied to data collected through a survey of 300 small and medium-sized enterprises (SMEs). Ultimately, the results show that innovation may result from complex combined effects between four board-related processes that occur at different times (i.e., upstream, midstream, and downstream) and evolve according to SMEs' bi-dimensional level of growth (i.e., size and age). Thus, this study notably goes beyond the simplistic view that currently prevails in the literature regarding the hypothesis of linear links between the board of directors (BoD) and innovation. By the same token, this work emancipates itself from the tendency to establish hierarchies implying that certain isolated elements would necessarily be pre-eminent regarding innovation. These findings, which integrate the necessary nuanced approach when studying such a complex phenomenon, have made it possible to generate multiple contributions, both theoretical and practical.

Keywords: Board of Directors, Processes, FsQCA, Contingency, Innovation, SMEs

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1. INTRODUCTION

Innovation is a powerful driver of value creation (Bustinza et al., 2019; Hoskisson et al., 2002) and often a source of competitive advantage for

organizations (Crossan & Apaydin, 2010; Teece et al., 2016). Therefore, it is of a strategic nature (Pfothenauer et al., 2019; Sjödin et al., 2020), particularly in small and medium-sized enterprises (SMEs) (Barroso-Castro, Domínguez-CC, et al., 2022;

Ejdemo & Örtqvist, 2020), which represent 95%–99% of all businesses worldwide (Organization for Economic Co-operation and Development [OECD], 2021). However, innovation usually results from a complex process (García-Ramos & Díaz, 2021; McCann & Bahl, 2017) and numerous factors have been identified as potential vectors or inhibitors (Chester Goduscheit & Faullant, 2018; Foucart & Li, 2021). Thus, even if circumscribing the antecedents of innovation is fundamental, it represents a challenge that can lead to a tedious list of elements, inducing confusion and disparity.

In this logic of the need to target the most relevant elements in terms of innovation, the board of directors (BoD) is particularly relevant (Baum et al., 2022; Srinivasan et al., 2018). This governance body plays a significant role in the innovation strategy (Chen et al., 2022; Deschamps & Nelson, 2014) and it instills the degree of risk assumed by firms regarding innovative initiatives (Sierra-Morán et al., 2024; Wu & Wu, 2014). These facts take on another dimension in the context of SMEs, where the BoD is considered an unconventional but strategic resource (Arzubiaga et al., 2018; Puthusserry et al., 2021) and a complement to executives rather than a control mechanism (Bammens et al., 2011; Gnan et al., 2015). Nonetheless, there is a need to better understand its strategic contributions (Lungeanu & Zajac, 2019; Panayi et al., 2021), and looking at its potential impact on innovation represents an interesting avenue to this end.

To date, research on the BoD (Balsmeier et al., 2017; Pearce & Patel, 2018) and principles of “good corporate governance” (Mutlu et al., 2018; Witt et al., 2022) are often articulated around board composition. However, while some board structures may be more beneficial than others (García-Ramos & Díaz, 2021; Paniagua et al., 2018), board composition alone is not sufficient to explain organizational performance (Johnson et al., 1996; Pearce & Patel, 2018) and even less innovation (Kurzahls et al., 2020; Sierra-Morán et al., 2024). Thus, the prevailing thesis today stating that board composition has an impact on innovation allows only a narrow understanding at best. This demonstrates that it is not only relevant to focus on BoD as an antecedent of innovation, but that in this approach it would be preferable to go beyond structural considerations.

In this perspective, board-related processes stand out, as these would influence the BoD’s ability to conduct its duties, give meaning to its composition, and explain its impact on organizational outcomes (Forbes & Milliken, 1999; Pugliese et al., 2015). In this sense, for more than three decades, several scholars have been trying to raise awareness about the relevance of board-related processes (Federo et al., 2020; Forbes & Milliken, 1999; Kumar & Zattoni, 2019; McNulty & Pettigrew, 1999; Pettigrew, 1992; Uhlaner et al., 2021; Zattoni et al., 2015). These calls, however, have not been heeded for three main reasons: 1) governance databases generally include board structural attributes that are easier to measure; 2) BoD inherent confidentiality cultivates a certain secrecy; 3) challenge to access directors (Klärner et al., 2020; Leblanc & Schwartz, 2007). Consequently, we know very little today about how the BoD can capitalize on

its underlying processes to create value for organizations (Cheng et al., 2022), especially in terms of innovation and in the context of SMEs.

These considerations lead to the following question:

RQ: How can the BoD, through its underlying processes, spur innovation in SMEs?

This study seeks to answer it through the analysis of four original board-related processes (i.e., establishment, integration, centralization, and bureaucratic), whose relevance is tested using Fuzzy-set Qualitative Comparative Analysis (FsQCA) based on a survey of 300 Canadian SMEs from various industries. The results highlight the strategic scope of the BoD and show that this governance body is a key tool for innovation purposes in SMEs. We find that distinct processes are involved at different times to explain the influence of the BoD on innovation in SMEs. More specifically, we conclude that innovation in SMEs can arise from 10 complex configurations, including board-related processes and contingency factors. Overall, these observations corroborate the relevance of adopting a continuum logic through a configurational approach from a contingency perspective.

This paper makes several contributions that go beyond traditional theories, current empirical evidence, and conventional good practices in corporate governance. It proposes an original theorization of four board-related processes that demonstrate that the link between the BoD and innovation in SMEs involves upstream, midstream, and downstream processes. This provides a singular understanding of this relationship and allows us to enrich the conclusions available to date, which are mainly based on midstream-level analyses. Additionally, it identifies various complex combinations including board-related processes and contingency factors that can be examined as potential mechanisms to stimulate innovation in SMEs. These contributions, which are rooted in theoretical, empirical, and methodological considerations, ultimately led to the emergence of multiple recommendations to guide practitioners and policymakers as to some concrete actions to be taken when the goal is to help SMEs strive for higher levels of innovation through the BoD.

The remainder of the paper is divided into five sections. Section 2 presents the literature review and research propositions. Section 3 then describes the methodology and the results are displayed in Section 4. Section 5 discusses the results obtained. Finally, brief concluding remarks in Section 6 conclude this study.

2. CONCEPTUALIZATION, THEORIZING, AND PROPOSITIONS

2.1. Board-related processes and innovation

The model of board processes proposed by Forbes and Milliken (1999) informed the approach of most studies that have explored aspects beyond board composition and roles (Arzubiaga et al., 2018; Zattoni et al., 2015; Zhu et al., 2016). It comprises three processes (i.e., effort norms, cognitive conflicts, and use of skills and knowledge) that have enabled major advances in the understanding of the functioning of the BoD based on social-

psychological processes. This model made it possible to better assimilate how board-related processes can influence the performance of directors individually and collectively, and ultimately that of their organizations (Ingley & van der Walt, 2005; Minichilli et al., 2012; Zattoni et al., 2015). However, several distinct board processes are intertwined or simply absent from the proposed framework. Moreover, it is built around the reality of large firms and does not allow one to consider the nuances of the governance of SMEs fully. Furthermore, this model omits important contingencies, especially for SMEs, such as firm size and age. These three major limitations of the model proposed by Forbes and Milliken (1999) model are highlighted by the authors themselves in their seminal article and suggest relying on it as part of a study.

Thus, we theorize about a model complementary to that of Forbes and Milliken (1999). This model is built around four original board-related processes following a continuum logic. It is also more in tune with the specificities of corporate governance in the context of SMEs, such as the high levels of implication of venture capitalists, the importance of the founder, and the differences in agency effects (Li et al., 2020; Zahra et al., 2007). Moreover, it attaches considerable importance to contingencies, which is fundamental when analyzing the BoD and considering it as an outcome strategy in general or innovation in particular (Díaz-Díaz et al., 2022; Oehmichen et al., 2017; Zona et al., 2013). It does so by including two contingency factors in our model: firm size and firm age. Finally, our model is based on a configurational approach to identify combinations of factors rather than focusing on isolated elements to explain innovation. This point takes on its full meaning given that both strategic leadership and innovation imply a complex process and involve multiple factors (Cortes & Herrmann, 2021; Davis & Bendickson, 2021; Foucart & Li, 2021).

All four board-related processes are rooted in resource-based theory and resource dependence theory. Concretely, for SMEs, through its underlying processes, a BoD potentially constitutes a valuable

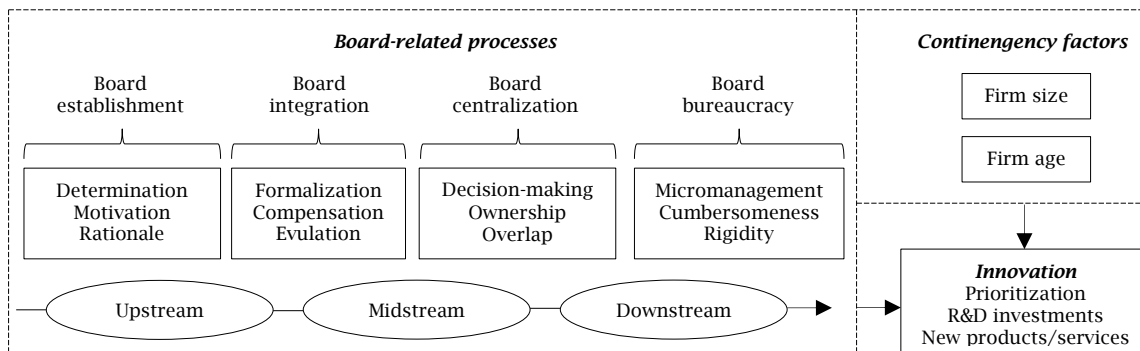
resource. It can help spur innovation by increasing the pool of knowledge and expertise in addition to providing an external perspective and a rich network, all of which are crucial to managing tensions within organizations or arising from the external environment (Barney, 1991; Pfeffer & Salancik, 2003). Furthermore, the four board-related processes find their essence in stakeholders' theory, which stipulates that value creation and particularly innovation can result from the BoD following rigorous processes as this would allow it to help firms manage and balance their multiple relationships (Chen & Liu, 2020; Freeman, 1984; Wu, 2008). Finally, these processes also draw on contingency theory (Burns & Stalker, 1961; Csaszar & Ostler, 2020) and complexity theory (Kauffman, 1993; García-Ramos & Díaz, 2021), given the difficulty of analyzing board-related processes and the need to look outside the BoD to gain a complete understanding of its potential contributions, especially in terms of innovation.

The general definition appearing in the latest edition of the Oslo Manual is the one used to describe the notion of innovation in our conceptual framework:

“An innovation is a new or improved product or process (or combination thereof) that differs significantly from the unit's previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process)” (OECD, 2018, p. 20).

A certain consensus has been established around this definition in the scientific and business worlds. In terms of operationalization, it is more precisely internal product/service innovation that has been retained. The main reason explaining this initiative is that this specific type of innovation refers to aspects over which the BoD can exercise significant influence. These include the degree of prioritization of innovation (Klärner et al., 2020; Schiehl et al., 2018), the degree of research and development (R&D) investments (Almor et al., 2019; Díaz-Díaz et al., 2022), and the degree of new products/services (Srinivasan et al., 2018; Wu & Wu, 2014) of SMEs compared to their main competitors. Figure 1 illustrates our conceptual model.

Figure 1. Conceptual framework of board-related processes following a continuum logic through a configurational approach and from a contingency perspective



2.1.1. Board-related establishment process and innovation

Numerous studies have focused on the composition of the BoD to explain organizational performance, as the leadership structure through the presence of outside directors or the number of directors might affect their functioning and scope (Boivie et al., 2021; Dalton et al., 1998). However, much remains to be discovered about the antecedents of board composition (Allemand et al., 2022; Hillman & Dalziel, 2003; Kim & Cannella, 2008), especially regarding their repercussions. Scholars generally start from the premise of an already existing BoD. Nevertheless, boards' responsibilities and effectiveness are partly determined by the process of setting up and selecting directors (Cravens & Wallace, 2001; Drymiotis & Sivaramakrishnan, 2021). This means that if board composition can affect organizational performance, upstream processes that shape board structures can do the same (Yildirim-Öktem & Üsdiken, 2010). This becomes even more apparent knowing that the impact of directors depends on their evolution (Elms & Pugliese, 2022; Garg et al., 2019; Westphal & Zajac, 1995), for which the starting point is the establishment of this governance body. In this sense, the board-related establishment process aims to capture the motivations, the decision-making process, and the rationale underlying such an initiative in SMEs.

The choice of establishing a BoD for SMEs raises several philosophical and legal issues (Arzubiaga et al., 2018; Uhlaner et al., 2021). In many cases of SMEs, as the shareholding is often made up almost exclusively of the founder, to which family members are sometimes added, the approach would be much less "capitalist" (Anderson & Reeb, 2004). The well-being, the sense of accomplishment, and the reputation would constitute elements of at least equal if not greater importance than the maximization of profits. In this continuity, SMEs are generally characterized by a very low level of agency problems (Dasilas & Papasyriopoulos, 2015; Gnan et al., 2015; Zahra & Filatotchev, 2004), especially in family businesses (Arzubiaga et al., 2018; Bammens et al., 2011; Voordeckers et al., 2007). Also, the choice for SMEs to set up a governance structure does not fit into the traditional and rather coercive logic attributable to agency theory and large firms, according to which the primary objective behind such an initiative is to safeguard the interests of shareholders by exercising control over managers. More broadly, it deviates from the institutional perspective suggesting that the establishment of a BoD or initiatives surrounding this governance body mainly result from external pressures, even if it is a reality in some contexts such as the USA or when topics like diversity are involved (Fiegner et al., 2000; Guldiken et al., 2019; Judge & Zeithaml, 1992).

Therefore, SMEs have a distinctive way to orchestrate their governance. They tend to favor "informal governance" (Brunninge et al., 2007) or governance that is "less professional" (Zahra & Filatotchev, 2004). Consequently, the notion of governance in the context of SMEs often amounts to the chief executive officer (CEO)-founder (Deb & Wiklund, 2017; Strese et al., 2018), on which they are

highly dependent (Randøy & Goel, 2003; Rasmussen et al., 2018; van den Heuvel et al., 2006). Similarly, when SMEs choose to establish governance structures, they tend to favor bodies less formal than a BoD but more solemn than simply articulating governance around the CEO-founder, such as advisory boards (Ding et al., 2013; Schiehl et al., 2018) and family councils (Arzubiaga et al., 2018; Gnan et al., 2015). Nevertheless, some SMEs make the unconventional choice of establishing a BoD, and understanding the rationale of this decision is relevant to assimilating the potential strategic scope of this governance body, especially in terms of innovation.

The scarcity of resources that SMEs must deal with, which suggests that they should go beyond their internal knowledge and skills if they want to innovate (Colclough et al., 2019; Street & Cameron, 2007), points to the relevance of establishing a BoD. Indeed, a BoD could help SMEs gain external perspectives (Minichilli et al., 2009), which, in turn, could help mitigate the founder's potential lack of experience (Zahra & Filatotchev, 2004) and potentially foster innovation. The human and social capital that directors can bring to SMEs (Barroso-Castro, Domínguez-CC, et al., 2022; Purkayastha et al., 2021) further illustrate that setting up a BoD can facilitate access to resources for SMEs, which is crucial to innovate. These factors help to better understand why the BoD would be as important for SMEs as it is for large firms (Puthusserry et al., 2021; Huse, 2000). Thus, an element that could be involved in the board-related establishment process for SMEs and that may be particularly relevant for innovation purposes is the need to tap into new expertise.

Establishing a BoD can also be part of a desire to be in line with industry best practices and be rooted in the institutional perspective. Investors usually compare firms within a given sector to guide their investment decisions and adapt their firms' governance practices (Okhmatovskiy & David, 2012). Further, among the key factors that affect the management of innovation are best practices in terms of leadership and strategy (Ben Rejeb et al., 2008), which are aspects that refer to the BoD. However, to understand their relevance for innovation, it is essential to avoid blindly following them (Pisano, 2015) and in this sense to contextualize them, especially because they are usually tacit and ambiguous (Un & Asakawa, 2015). This could explain why many of the best practices in corporate governance have not been empirically supported (Heracleous, 2001; Dalton & Dalton, 2005). The main problem is that these are generally articulated around board structural attributes. Therefore, the processes are neglected (Dalton & Dalton, 2006), which could hinder the BoD in its strategic contributions (Boivie et al., 2021). Nevertheless, best practices related to corporate governance have proven to be relevant to innovation, and many renowned firms in the high-tech industry have introduced some structures such as technology advisory boards for this purpose (Shaikh & Randhawa, 2022). Furthermore, following best practices at the board level can influence the firms' legitimacy and acceptance (Steckler & Clark, 2019). In other words, the alignment of SMEs on industry best practices, when it is conducted properly, can be judicious because this would optimize the adequacy

with sectorial specificities. This represents another element that could be involved in the board-related establishment process and may be particularly relevant for innovation purposes in SMEs.

Moreover, governance bodies play a significant role in mitigating tensions arising from strategic decisions, such as those related to innovation (Venugopal et al., 2020). The BoD's functioning is closely linked to the strategic involvement of its members and could ultimately contribute to innovation in SMEs (Arzubiaga et al., 2018; Machold et al., 2011). Further, in the context of SMEs, the BoD is considered a strategic resource (Barroso-Castro, Domínguez-CC, et al., 2022; Puthusserry et al., 2021) and a complement to executives rather than a control mechanism (Bammens et al., 2011; Gnan et al., 2015). This suggests that the BoD's strategic scope is as much or even more important for SMEs than for their larger counterparts (Brunninge et al., 2007; Bauweraerts et al., 2019).

A BoD is also useful from a more symbolic perspective, particularly because it confers a certain legitimacy to organizations (Singh et al., 1986; Bucheli & Salvaj, 2018). This legitimacy is far from being only symbolic because it allows firms to forge links with external partners (Federo et al., 2020; Pearce & Patel, 2018). This adds to its importance as innovation can often result from a collaborative approach that requires transcending organizational boundaries (McGahan et al., 2021; West & Bogers, 2014). In this sense, even if the BoD can have both a symbolic and more concrete impact (Gai et al., 2021), it remains, in all cases, a relevant body that can significantly foster innovation. This reasoning leads to the following proposition.

P1: Board-related establishment process, which reflects the concrete motivations underlying the choice of setting up a BoD as well as the decision-making process and rationale of such an initiative, is a part of the sufficient (present) conditions leading to high levels of innovation in SMEs.

2.1.2. Board-related integration process and innovation

Once the BoD has been established, firms must ensure its members can deploy their full potential under optimal conditions. In other words, SMEs must have a proper integration process for new directors. The first aspect underlying this process is the orientation of directors. This can translate into establishing standardized and common procedures, which occasionally prove to be innovation-enhancing for SMEs (Gentile-Lüdecke et al., 2020; López et al., 2019). Orienting directors has been linked to several aspects that are potential vectors of innovation, such as the training of directors and the presence of guidelines (Kurzahls et al., 2020; Wu, 2008). However, a "rigid orientation" that can be considered as a certain formalization does not fit well with SMEs' culture (Herrmann & Nadkarni, 2014; McKiernan & Morris, 1994; Puthusserry et al., 2022). Overall, for both SMEs' and large firms' BoD, communication is mainly informal as numerous discussions happen before and after meetings (Ingley et al., 2017; Luciano et al., 2020). Supporting this position, it has been found that informality within the board is valued even in the largest and most innovative pharmaceutical firms (Klärner

et al., 2020). It could also lead to more open communication and affect the time newcomers take to understand board dynamics and processes (Elms & Pugliese, 2022). Accordingly, in SMEs, it seems more appropriate to consider the notion of orientation through a more flexible prism, which translates into taking the necessary measures to ensure that directors share the firm's goals and values. This aspect has long been identified as an important factor in groups (Blau, 1960), particularly for BoD (Kosnik, 1990; Meyer & Altenborg, 2007). It refers to affective, cognitive, and behavioral aspects (Pedersen & Tallman, 2022; Torres de Oliveira et al., 2020), which can enhance learning in collaboration and absorptive capacity, both of which are related to innovation (Cohen & Levinthal, 1990; Enkel et al., 2018). These elements suggest that orienting directors, which in the case of SMEs takes the form of a more flexible approach compared to their larger counterparts, can influence innovation.

Orientation is only one aspect of successfully integrating directors. Successful integration also requires motivating them to perform their duties adequately, which may involve monetary incentives, such as annual bonuses, director fees, committee fees, or stock grants (Dah & Frye, 2017; Farrell et al., 2008). The importance of directors' remuneration regarding their integration is more palpable through the concepts of social comparison and reciprocity, which regulate the type and amount of compensation awarded to board members (Boivie et al., 2015), although their qualifications are of paramount importance to this end (Fedaseyev et al., 2018). The mechanism underlying directors' compensation is closely linked to agency issues, an essential element of which is to align the interests of principals (i.e., shareholders) and agents (i.e., managers) through the BoD (Rodrigues et al., 2020). For example, granting shares to directors makes compensation dependent on the firm's value and, therefore, its performance (Deutsch, 2007; Sheikh et al., 2018). Thus, directors' compensation has been found to improve firm performance (Doucouliagos et al., 2007; Engel et al., 2019). By extension, incentives can facilitate developing strategic links (Borch & Huse, 1993), pursuing long-term goals (Shaikh et al., 2019), fulfilling roles (Neville et al., 2019), and the quest for innovation (Griffin et al., 2021; Lim & McCann, 2014; Zahra et al., 2000).

A third aspect associated with the board-related integration process refers to directors' evaluation. The BoD's performance must be audited to assess its performance and satisfaction, and the required adjustments must be made. This procedure facilitates the complete integration of new directors. Notably, directors' effectiveness depends on their ability to perform their duties and work together — their cohesion (Forbes & Milliken, 1999; Zattoni et al., 2015). This implies that an extensive pool of expertise is not sufficient; there should also be a harmonious match among individuals sitting on the BoD. Therefore, it is essential to plan a detailed and transparent evaluation process for all board members (Hoppmann et al., 2019; Lee & Phan, 2000). This is especially relevant given that evaluating directors can be a vector of value creation and improve

decision-making within the board (Minichilli et al., 2007; Rasmussen, 2015; Vandebeek et al., 2016). In this sense, recently, there have been many calls aimed at raising awareness regarding the relevance of evaluating the BoD to better understand the commitment and scope of this governance body (Kaczmarek & Nyuur, 2021; Vandebeek et al., 2021). This reasoning leads to the following proposition:

P2: Board-related integration process, which reflects the orientation, incitation, and evaluation of the BoD, is part of the sufficient (present) conditions that lead to high levels of innovation in SMEs.

2.1.3. Board-related centralization process and innovation

Centralization is one of the concepts that mostly distinguishes SMEs' governance from that of large corporations (Forbes & Milliken, 1999; Gnan et al., 2015; van den Heuvel et al., 2006). This is primarily reflected in ownership and power (Brunninge et al., 2007; Ingley et al., 2017), which are often exacerbated in family businesses (Arzubiaga et al., 2018; Bammens et al., 2011). Power can also be concentrated among venture capitalists (Garg & Eisenhardt, 2017; Rosenstein et al., 1993) or mobilized by an individual, such as a CEO, particularly in terms of decision-making prepotency (Hsu et al., 2013; Tang et al., 2017). This is more pronounced in SMEs because the CEO is often also the founder (Deb & Wiklund, 2017). These factors partly explain SMEs' interest in hiring independent directors (Barroso-Castro, Pérez-Calero, et al., 2022; Rasmussen et al., 2018) to tend toward a certain degree of decentralization and avoid the potential adverse effects attributable to the overlap between shareholders, directors, and managers (Gnan et al., 2015; Shehata et al., 2017).

Various forms of board-level centralization are relevant to innovation (Bendig et al., 2020; Querbach et al., 2020; Strese et al., 2018), although decentralization is generally preferable. Centralization may increase instability in terms of financial performance and complicate strategic change — two aspects closely linked to innovation (Smith & Tranfield, 2005; Tran & Turkiela, 2020; Zahra, 1996). Moreover, restricting decision-making authority to a very limited number of individuals (e.g., founder, CEO, or family members) decreases the potential inputs during discussions (e.g., diversity of perspectives, number of ideas, or constructive debates) (Ma et al., 2020). This potential hazard is even greater in SMEs because the traditional governance chain (i.e., shareholders, BoD, and top management team) is often absent (Arzubiaga et al., 2018; Martin et al., 2016). This naturally reduces the governance entities that could help the organization in its quest for innovation.

Thus, while the CEO is certainly an important entity for innovation (Nag et al., 2020), he/she would benefit from being surrounded by directors with a high degree of skills and knowledge and a rich and extensive network (Schiehl et al., 2018; Wincent et al., 2010). This need is even more apparent regarding product/service innovation, which has complex antecedents (Curado et al., 2018; Storey et al., 2016) and implies that power decentralization would be a better choice. Therefore, it becomes clearer to understand why some authors have found

that centralization is undesirable regarding innovation as it could notably reduce creativity (Damanpour et al., 2018; Gentile-Lüdecke et al., 2020; Vendrell-Herrero et al., 2018). This reasoning leads to the following proposition:

P3: Board-related centralization process, which reflects the concentration of power, decision-making, and ownership within the BoD, is part of the sufficient (absent) conditions that lead to high levels of innovation in SMEs.

2.1.4. Board-related bureaucratic process and innovation

Although a BoD can be beneficial for organizations, it also has drawbacks, as reflected in the centralization process. Some other elements demonstrate that a BoD can become more harmful than beneficial to firms, particularly because of the different levels of engagement and the varying behaviors of its members (Bezemer et al., 2018; Uhlaner et al., 2021). In some cases, the BoD can ultimately become cumbersome, rigid, and of little strategic value. Hence, we refer to this downstream process as “bureaucratic”.

SMEs need to exert greater effort than their larger counterparts to deal with technological changes because of resource scarcity (Lee et al., 2012; Valentim et al., 2016). Moreover, SMEs' success depends largely on their ability to leverage knowledge and develop new products/services (Zahra et al., 2007). These fundamental considerations, while relevant for innovation, suggest that those surrounding the BoD might not be a priority for SMEs. Further, given that conflicts of interest between shareholders and managers are less likely to emerge in SMEs (Bauweraerts et al., 2021; Dasilas & Papasyriopoulos, 2015), the BoD can be perceived as a cumbersome rather than a relevant instrument (Lioukas & Reuer, 2020; Williamson, 1991).

Furthermore, in cases where a board might exercise restrictive control over less connected directors and managers, it could be viewed as an infringement on their autonomy and independence. This could explain why some SMEs favor advisory boards, as this type of governance structure does not necessarily involve legal liability and is considered more harmonious within their context (Bertschi-Michel et al., 2021; Blumentritt, 2006). Similarly, a less rigid governance body, such as a family council, could be regarded as a suitable substitute for the BoD. This is because it is likely to focus on aspects in tune with the realities of SMEs (Gnan et al., 2015; Leung et al., 2020). In short, the BoD could turn out to be rigid for SMEs and therefore not be compatible with their culture.

A BoD's limited strategic range is another potential disadvantage in the context of SMEs. While innovation is certainly strategic in nature (Miroshnychenko et al., 2021; Wincent et al., 2010), SMEs are less formal than their larger counterparts. Therefore, they usually do not report an innovative culture as the innovation process is often not conducted structurally (Terziowski, 2010). This is partly because the notion of strategy is mainly within the purview of the CEO in SMEs (Barroso-Castro, Domínguez-CC, et al., 2022; Nag et al., 2020). Thus, the BoD might potentially be relegated to more operational activities and fall into

micromanagement, which could raise questions about its strategic scope. Moreover, to innovate, SMEs must manage various constraints, including access to resources (Bodlaj et al., 2020). To overcome these constraints, they usually resort to informal options, either at the institutional level (Schwens et al., 2011), in networking (Borch & Huse, 1993), or to access financing (Rao et al., 2023). This is consistent with SMEs' often short-term vision (del Brío & Junquera, 2003), which is reflected in their managers' orientation (Preller et al., 2020). A BoD may not fit this paradigm. This reasoning leads to the following proposition:

P4: Board-related bureaucratic process, which reflects the potential cumbersomeness, rigidity, and limited strategic scope of the BoD, is part of the sufficient (absent) conditions that lead to high levels of innovation in SMEs.

2.2. Contingency factors and innovation

The environment in which an organization operates is important, especially regarding product/service innovation (Morgan & Anokhin, 2020; Wu & Wu, 2014). Therefore, it is necessary that our conceptual framework extends beyond the BoD, as recommended by recent studies in the field of corporate governance (García-Ramos & Díaz, 2021; Puthusserry et al., 2021; Tasheva & Hillman, 2019). This study more specifically analyzes two organizational characteristics commonly integrated into the analysis when linking the BoD to innovation: firm size and firm age (Arzubiaga et al., 2018; Miller & del Carmen Triana, 2009; Zona et al., 2013).

2.2.1. Firm size

Firm size is particularly relevant for capacity issues and is important to consider for innovation purposes in SMEs. R&D is usually less formalized (Kleinknecht, 1989; Shefer & Frenkel, 2005) in SMEs, which could partly explain why other elements, such as knowledge, collaboration, and networks, could be more powerful drivers of innovation in this context (Hervás-Oliver et al., 2021). On their part, larger organizations tend to pursue innovation more aggressively than their smaller counterparts, mainly by investing more in R&D (Gimenez-Fernandez et al., 2020; Wakasugi & Koyata, 1997). However, although previous meta-analyses found that a larger size could be preferable to stimulate innovation, the literature on this concept also reports mixed results. This is particularly because the measures of both firm size and innovation showed considerable heterogeneity (Camisón-Zornoza et al., 2004; Damanpour, 1992). These observations point to several observations:

1. Firm size may induce complexity that hinders innovation.
2. Firm size may exert different influences depending on the specific types of innovation.
3. Other parameters may cause the impact of firm size on innovation to fluctuate.

This reasoning leads to the following proposition:

P5: Firm size is part of the sufficient (present or absent) conditions that lead to high levels of innovation in SMEs.

2.2.2. Firm age

Firm age would not be sufficient to explain organizations' capacity to innovate. It is important to examine its underlying elements, such as how older firms can mutually create knowledge with partners (Bouncken et al., 2021), and the relationships between firm age and other concepts, such as SMEs' intangible resources and entrepreneurial orientation (Anderson & Eshima, 2013). Thus, SMEs' age should be analyzed through the prism of different factors, such as their ability to innovate (Hervás-Oliver et al., 2021; Leyva-de la Hiz & Bolívar-Ramos, 2022). The specific type of innovation is also relevant for examining the link between firm age and innovation (Mabenge et al., 2020), especially because age could indicate a firm's ability to exploit resources (Jiang et al., 2020). Further, different types of innovation might require different types of resources (Haneda & Ito, 2018). Overall, these elements lead to the same main conclusion as for firm size: firm age could explain variations in terms of innovation, but it is difficult to take a categorical position regarding the presence or absence of this condition as many other parameters should be considered to fully capture its impact on innovation. This reasoning leads to the following proposition:

P6: Firm age is part of the sufficient (present or absent) condition that leads to high levels of innovation in SMEs.

3. METHODOLOGY

3.1. Sample and data

The sample comprises SMEs, which are firms with fewer than 250 employees (Kang et al., 2022; Raes et al., 2022), based in Quebec (Canada). A survey via telephone was conducted between June 4, 2020, and July 7, 2020. The questionnaire was administered to the main executive of the company, i.e., the CEO or general manager, according to the structure of the organization, and the average call duration was approximately 15 minutes. A total of 487 observations were collected from the 1,933 SMEs contacted — approximately 25% response rate, which is higher than that obtained by previous studies (Arzubiaga et al., 2018; Zona et al., 2013). Of the 300 valid questionnaire responses, 37% had a BoD, yielding a final sample of 112 SMEs, which is superior to that of prior research on the BoD (Barroso-Castro, Domínguez-CC, et al., 2022; Schiehl et al., 2018). The total number of observations is even more appreciable considering that past empirical evidence in this field has usually relied on national-level surveys. However, this study was conducted at the regional level, which also made it possible to avoid certain contextual biases related to regional specificities (Parrilli et al., 2020; Shearmur & Doloreux, 2016).

SMEs included in the sample have been in operation for an average of 40 years (median is 36), and their average size is 65 employees (median is 40). They are spread across all the regions of the province of Quebec, mainly in the cities of Montreal (24%) and Quebec (11%). These SMEs come from all industries represented in the North American Industry Classification System. The most

represented sectors are retail trade (29%), manufacturing (22%), service (17%), and construction (10%). Approximately half of the surveyed SMEs are family businesses (51%). Concerning their turnover, 45% have less than 10 million, 20% have between 11 and 25 million, and 24% have more than 25 million Canadian dollars. The establishment of the BoD occurs after 23 years of existence on average. Finally, the BoD generally comprises five members, two of whom are independent.

3.2. Conditions at the board level

The four board-related processes comprised composite scores averaged from multiple items measured on a Likert scale, where 1 = strongly disagree and 5 = strongly agree.

3.3. Conditions at the organizational level

The two contingency factors are firm age, measured by the number of years since the firm's foundation (Balsmeier et al., 2017; Zona, 2016), and firm size, operationalized by the logarithmic transformation of the total number of employees to meet normal distribution.

3.4. Outcome

Innovation was represented by internal product/service innovation, which refers to

the efforts deployed to innovate in terms of prioritization and R&D investments (inputs) and the fact for these aspects to translate into the introduction of new products/services (outputs) (Bianchi et al., 2016; Hitt et al., 1996; Hoskisson et al., 2002).

3.5. FsQCA method

The FsQCA method was used to investigate the relevance of our propositions. This method has recently been employed by several corporate governance studies (Paniagua et al., 2018; Schiehl et al., 2018) and is particularly appropriate for identifying configurations that include concepts related to the BoD and contingency factors (García-Ramos & Díaz, 2021). Instructions for conducting the analysis were strictly followed (Fiss, 2011; Furnari et al., 2021; Misangyi et al., 2017; Ragin, 2008). Also, according to the latest recommendations, we considered a more restrictive calibration (5th, 50th, and 95th percentiles (pctl)) (Ponomareva et al., 2022). Finally, in line with our study objective, our propositions, and recent studies (Speldekamp et al., 2020; Standaert et al., 2022), we focused on configurations leading to high levels of our outcome.

The constructs' coherence was assessed using exploratory and confirmatory factor analyses and by verifying composite reliability and convergent validity (Table 1 and Table 2).

Table 1. Constructs' items, loadings, validity, and reliability

Variables	Items	LDG	λ	α	AVE	CR
Board-related processes						
Establishment	The establishment of the BoD was based on the following criteria:		2.88	0.82	0.50	0.57
	(1) Follow industry best practices	0.80				
	(2) Facilitate access to expertise	0.51				
	(3) Support the strategic development of the firm	0.62				
	(4) Provide the company with greater credibility	0.84				
Integration	The integration of directors included the following measures:		2.11	0.70	0.52	0.61
	(1) Orientation	0.70				
	(2) Incitation	0.68				
	(3) Evaluation	0.78				
Centralization	The centralization within the BoD was assessed by the following:		1.94	0.66	0.57	0.84
	(1) The general manager is also the main owner	0.80				
	(2) The firm is a family enterprise	0.71				
	(3) The board mainly comprises internal directors	0.74				
	(4) The CEO is also the board chairman	0.77				
Bureaucracy	The bureaucracy within the BoD was assessed based on the following:		1.78	0.65	0.53	0.77
	(1) The board is a cumbersome process to support	0.77				
	(2) The board is too involved in micromanagement and not in strategy	0.66				
	(3) The board limits the autonomy and decision-making's independence	0.74				
Contingency factors						
Firm size	The natural logarithm of the total number of employees	-	-	-	-	-
Firm age	The number of years the organization has existed	-	-	-	-	-
Innovation						
Internal product/service	Innovation was measured according to the degree to which SMEs:		1.80	0.72	0.51	0.73
	(1) Consider innovation a primary objective	0.58				
	(2) Invest in R&D compared to their main competitors	0.89				
	(3) Introduce products/services compared to their main competitors	0.69				

Note: LDG is loadings, λ is eigenvalue, α is Cronbach's alpha, AVE is average variance extracted, CR is composite reliability.

Table 2. Fit of the factorial model

χ^2/df	<i>p</i> -value	TLI	NFI	CFI	RMSEA	PCLOSE
1.27	0.06	0.90	0.92	0.93	0.04	0.35

Note: TLI is Tucker-Lewis index, NFI is normed fit index, CFI is comparative fit index, RMSEA is root mean square error of approximation, PCLOSE is probability of close fit.

The descriptive statistics and calibration are presented in Table 3 while Table 4 illustrates the correlation matrix.

Table 3. Descriptive statistics and calibration

Variables	Mean	SD	Min	Max	5th pctl	50th pctl	95th pctl
Board-related establishment process	3.57	0.97	1.00	5.00	1.53	3.70	5.00
Board-related integration process	1.66	0.31	1.00	2.00	1.00	1.67	2.00
Board-related centralization process	1.21	0.22	0.80	1.80	1.00	1.20	1.60
Board-related bureaucratic process	2.21	0.84	1.00	4.00	1.00	2.33	3.67
Firm size (natural logarithm)	3.90	0.71	3.00	5.50	3.00	3.91	5.33
Firm age (raw values)	40.50	22.07	5.00	130.00	8.70	36.00	82.4
Innovation (internal product/service)	3.45	0.75	1.30	5.00	2.33	3.33	4.67

Table 4. Correlation matrix (Pearson)

Variables	1	2	3	4	5	6	7
1	1.00						
2	-0.27**	1.00					
3	0.01	-0.02	1.00				
4	0.15	-0.06	0.02	1.00			
5	0.05	-0.12	0.13	-0.13	1.00		
6	0.22*	-0.05	-0.01	-0.02	0.24*	1.00	
7	0.16	-0.31**	-0.13	-0.04	0.08	0.10	1.00

Note: Significance (two-tailed): * $p < 0.05$; ** $p < 0.01$. Board variables (board-related process): 1. Establishment, 2. Integration, 3. Centralization, 4. Bureaucratic. Organizational variables (contingency factors): 5. Firm size, 6. Firm age. Innovation variable: 7. Internal product/service.

4. RESULTS

4.1. Analysis of necessary conditions

The first step was to analyze the necessary conditions. The norm is to consider a condition necessary when its

consistency value is greater than 0.90 (García-Ramos & Díaz, 2021; Rodrigues et al., 2020; Schiehl et al., 2018). As shown in Table 5, none of the variables met this criterion, indicating that there are no necessary conditions at the board or organizational level leading to high levels of innovation.

Table 5. Necessary conditions analysis for the presence of innovation

Conditions	Consistency	Coverage
Board-related establishment process	0.71	0.70
~ Board-related establishment process	0.57	0.63
Board-related integration process	0.62	0.58
~ Board-related integration process	0.64	0.74
Board-related centralization process	0.53	0.63
~ Board-related centralization process	0.70	0.65
Board-related bureaucratic process	0.69	0.66
~ Board-related bureaucratic process	0.57	0.65
Firm size	0.59	0.69
~ Firm size	0.68	0.63
Firm age	0.68	0.71
~ Firm age	0.62	0.65

4.2. Analysis of the overall solution

The results of FsQCA-sufficient conditions (with a raw coverage > 0.20 and a consistency > 0.80) are presented in Table 6. The consistency cutoff was set to 0.81. In total, 10 configurations have been identified as being likely to generate high levels of innovation. The solution consistency value of 0.74

indicates that these configurations led to high levels of innovation 74% of the time. The coverage value of 0.72 indicates that 72% of innovation is explained by the identified configurations. Table 6 also lists the raw and unique coverage values for each configuration. The first reflects both innovation and the specific configuration; the second refers to the coverage of innovation for each configuration.

Table 6. Sufficient configurations leading to high levels of innovation in SMEs

Configurations	High levels of innovation (internal product/service)									
	1	2	3	4	5	6	7	8	9	10
Board-level conditions										
Board-related establishment process	●	●		●	●			●	⊗	●
Board-related integration process		⊗	●	⊗		●	●	●	●	●
Board-related centralization process	⊗		⊗	⊗	⊗	⊗	⊗	⊗	●	⊗
Board-related bureaucratic process		⊗	⊗		⊗	●	⊗		●	
Organizational-level conditions										
Firm size	⊗	⊗	⊗		●	●	⊗	⊗		⊗
Firm age	⊗			⊗	●	●	⊗	⊗	⊗	
Consistency	0.85	0.84	0.81	0.83	0.89	0.87	0.83	0.81	0.81	0.82
Raw coverage	0.36	0.30	0.24	0.27	0.33	0.32	0.23	0.27	0.20	0.34
Unique coverage	0.01	0.04	0.02	0.02	0.01	0.01	0.01	0.02	0.01	0.02
Solution consistency	0.74									
Solution coverage	0.72									

Note: Sufficient conditions are identified by ● (presence) and ⊗ (absence); Blank spaces indicate a “do not care” situation in which the sufficient causal condition may be either present or absent from the configurations.

4.3. Horizontal analysis of sufficient conditions

Horizontal analysis (i.e., focus on each condition individually across all configurations) supports the relevance of our six propositions. Thus, the presence or absence of each of the four board-

related processes and each of the two contingency factors represent important conditions of innovation in SMEs. Table 7 recalls our six propositions and shows how the findings generally validate their pertinence.

Table 7. Propositions (theorization) and findings (validation)

Propositions (theorization)	Findings (validation)
P1: Board-related establishment process, which reflects the concrete motivations underlying the choice of setting up a BoD as well as the decision-making process and rationale of such an initiative, is a part of the sufficient (present) conditions leading to high levels of innovation in SMEs.	The board-related establishment process proved to be relevant overall, given that the presence of this condition has been observed in six (1, 2, 4, 5, 8, and 10) and its absence in one (9) of the 10 configurations that lead to high levels of innovation in SMEs.
P2: Board-related integration process, which reflects the orientation, incitation, and evaluation of the BoD, is part of the sufficient (present) conditions that lead to high levels of innovation in SMEs.	The board-related integration process proved to be relevant overall, given that the presence of this condition has been observed in six (3, 6, 7, 8, 9, and 10) and its absence in two (2 and 4) of the 10 configurations that lead to high levels of innovation in SMEs.
P3: Board-related centralization process, which reflects the concentration of power, decision-making, and ownership within the BoD, is part of the sufficient (absent) conditions that lead to high levels of innovation in SMEs.	The board-related centralization process proved to be relevant overall, given that the absence of this condition has been observed in eight (1, 3, 4, 5, 6, 7, 8, and 10) and its presence in one (9) of the 10 configurations that lead to high levels of innovation in SMEs.
P4: Board-related bureaucratic process, which reflects the potential cumbersomeness, rigidity, and limited strategic scope of the BoD, is part of the sufficient (absent) conditions that lead to high levels of innovation in SMEs.	The board-related bureaucratic process proved to be relevant overall, given that the absence of this condition has been observed in four (2, 3, 5, and 7) and its presence in two (6 and 9) of the 10 configurations that led to high levels of innovation in SMEs.
P5: Firm size is part of the sufficient (present or absent) conditions that lead to high levels of innovation in SMEs.	Firm size proved to be relevant, given that the presence of this condition has been observed in two (5 and 6) and its absence in six (1, 2, 3, 7, 8, and 10) of the 10 configurations that lead to high levels of innovation in SMEs.
P6: Firm age is part of the sufficient (present or absent) condition that leads to high levels of innovation in SMEs.	Firm age proved to be relevant, given that the presence of this condition has been observed in two (5 and 6) and its absence in five (1, 4, 7, 8, and 9) of the 10 configurations that lead to high levels of innovation in SMEs.

4.4. Vertical analysis of sufficient conditions

Vertical analysis shows that the results are consistent with the assumptions underlying the continuum logic,

the configurational approach, and the contingency perspective. Table 8 illustrates how these different assumptions are supported by the findings.

Table 8. Assumptions (theorization) and findings (validation)

Assumptions (theorization)	Findings (validation)
Continuum logic	Configurations illustrate that the presence or absence of upstream, midstream, and downstream board-related processes are relevant to explain innovation in SMEs.
Conjunction	Innovation in SMEs cannot be explained by a single condition and is the result of the interdependence between different conditions, as each of the configurations includes at least four conditions.
Equifinality	Multiple pathways lead to innovation in SMEs as different combinations of conditions are involved to explain this specific organizational outcome.
Asymmetry	The same conditions have been shown to be able to contribute differently or sometimes even simply be unrelated to innovation in SMEs.
Contingency	All configurations include at least one contingency factor, which suggests that the BoD is not omnipotent regarding innovation in SMEs and underlines the relevance of the firms' environment.

5. DISCUSSION

The results highlight both the scientific and practical scope of this paper. However, there are also certain limitations that should be noted and that open the way for future research. The next lines will address these three key aspects (i.e., implications for research, implications for practice as well as the limitations and avenues of future research).

5.1. Implications for research

This study theorizes four original board-related processes by combining underlying elements of various board attributes based on an extensive literature review and the postulates of various complementary theories. In doing so, it confirms the strategic scope of the BoD (Arzubiaga et al., 2018; Puthusserry et al., 2021) by introducing four new relevant parameters that can spur innovation in SMEs. Therefore, we answer the repeated calls to document board processes (Federo et al., 2020; Forbes & Milliken, 1999; Kumar & Zattoni, 2019; Pettigrew, 1992; Uhlaner et al., 2021; Zattoni et al., 2015) and provide much-needed alternatives to the focus on boards' structural considerations (Kurzahls et al., 2020; Sierra-Morán et al., 2024). Indeed, studies on the BoD (Balsmeier et al., 2017; Pearce & Patel, 2018) and good practices in corporate governance are almost exclusively articulated around board composition (Mutlu et al., 2018; Witt et al., 2022). However, board structure is not sufficient to explain organizational performance (Johnson et al., 1996; Pearce & Patel, 2018) and even less innovation, given the inherent complexity of this specific organizational outcome (Davis & Bendickson, 2021; McCann & Bahl, 2017).

This paper also introduces a continuum logic associated with board-related processes. Thus, it reveals that the impact of the BoD on innovation in SMEs depends on certain processes that occur at different times: upstream, midstream, and downstream. This theorization, which has been supported empirically, enriches the available conclusions available to date, which are mainly rooted in midstream-level analyses. It allows us to provide a singular understanding of how the link between the BoD and innovation operates. Furthermore, it confirms that the BoD is a valuable resource through its human and social capital (Barroso-Castro, Domínguez-CC, et al., 2022; Purkayastha et al., 2021), both of which can stimulate innovation in SMEs and find their essence in resource-based theory (Barney, 1991) and resource dependency theory (Pfeffer & Salancik, 2003), respectively. Our theorization around the continuum logic underlying board-related processes is also in line with stakeholders' theory, which stipulates that the BoD following rigorous processes can generate value creation and innovation because it can help firms manage and balance their relationships (Chen & Liu, 2020; Freeman, 1984; Wu, 2008).

This research, through its configurational approach, also allows us to rethink the link between the BoD and innovation. Indeed, it shows that complementary relationships between various board-related processes and organizational characteristics are involved in explaining innovation

in SMEs. This suggests that innovation is not attributable to isolated factors (i.e., conjunction), that the same concept could contribute differently or be irrelevant to innovation (i.e., asymmetry), and that different combinations of elements can lead to innovation (i.e., equifinality). Thus, our findings are in line with complexity theory (García-Ramos & Díaz, 2021; Kauffman, 1993; Misangyi et al., 2017) and provide a fine-grained understanding of the potential impact of the BoD on innovation.

Furthermore, by integrating a contingency perspective, this study provides a nuanced view of the link between the BoD and innovation in SMEs. It suggests that SMEs' bi-dimensional level of growth is of paramount importance, given that it implies variations in the combinations of board-related processes involved to spur innovation. Thus, in accordance with contingency theory (Burns & Stalker, 1961; Csaszar & Ostler, 2020) and the relevance of environmental factors to explain innovation (Morgan & Anokhin, 2020; Wu & Wu, 2014), we show that the BoD is not impermeable to its environment. This makes it possible to be in line with the need to extend the conceptual framework beyond the BoD when analyzing the potential contributions of this governance body (García-Ramos & Díaz, 2021; Puthusserry et al., 2021; Tasheva & Hillman, 2019). Similarly, by highlighting that SMEs' bi-dimensional level of growth is a crucial parameter, we corroborate the pertinence of considering precisely firm size and age when the goal is to investigate the BoD's impact on innovation (Arzubiaga et al., 2018; Miller & del Carmen Triana, 2009; Zona et al., 2013). In short, the BoD can benefit SMEs, but it is not omnipotent to innovate, which reaffirms the need to adopt a holistic approach when analyzing innovation as an outcome (Dewangan & Godse, 2014; Edquist, 2019).

5.2. Implications for practice

While there has been a trend towards collaborative approaches to innovation over the past few years, our results show that some viable options within organizational boundaries, in this case through the BoD, may not have been fully exploited. This suggests that organizations should ensure that they are making the most out of their internal resources, particularly through the judicious use of their BoD, before or at least in parallel to relying on external resources to innovate. Therefore, these aspects show that SMEs that do not have a BoD would benefit from establishing one. By referring to the underlying elements of the board-related establishment process, they will find concrete factors to guide them to this end. Furthermore, by referring to the other board-related processes (i.e., integration, centralization, and bureaucracy), they will find concrete avenues of action for the functioning of the BoD in order to create conditions conducive to innovation.

Regarding SMEs' size and age, results suggest they are indeed important to spur innovation (Hervás-Oliver et al., 2021; Leyva-de la Hiz & Bolívar-Ramos, 2021). More precisely, board-related processes should be adapted to these two contingency factors to create optimal conditions for innovation. In other words, the 10 configurations represent 10 promising paths to innovation

translating into combinations between four board-related processes that SMEs can follow based on their bi-dimensional level of growth. Thus, depending on their size or age, or both simultaneously, SMEs will find in these configurations concrete courses of actions articulated around board-related processes, and more specifically around their 14 underlying items, to foster innovation.

Moreover, initiatives aimed at spurring innovation in SMEs generally comprise monetary incentives taking various forms and focusing on R&D. However, this study suggests that financial support specifically targeting the improvement of governance practices at the board level could be a promising alternative to these more traditional governmental measures, which have often proved to be somewhat sterile (Hervás-Oliver et al., 2021; Yi et al., 2021). Thus, specific grant programs could be intended to cover the costs of training in governance for the directors of SMEs. In this continuity, organizations whose mission is to train directors could develop and implement content around our different board-related processes to optimize the contributions of directors in terms of innovation.

Finally, while good practice guides in corporate governance mainly focus on structural characteristics of the BoD in large organizations, our results point to two initiatives that could have a considerable impact on governance practices, SMEs and innovation. The first refers to the need to address board-related processes in future releases of good practices guides by following a continuum logic (i.e., by considering that distinct processes are involved at different times), through a configurational approach (i.e., by emphasizing that processes operate in tandem and not in isolation) and from a contingency perspective (i.e., by adopting a holistic view of processes that attaches more importance to environmental factors). The second step concerns the necessity to write good practice guides integrating the specificities of SMEs, which are numerous (Forbes & Milliken, 1999; Li et al., 2020; Zahra et al., 2007) which implies that transposing the operating logic of large organizations is not optimal.

6. CONCLUSION

This study provides a singular understanding of how the BoD can stimulate innovation in SMEs on a framework that follows a continuum logic through a configurational approach and from a contingency perspective. To this end, it develops a theorization and conducts experimentation on the link between four board-related processes, which operate upstream, midstream, and downstream. In this sense, this paper goes beyond traditional theories, current empirical evidence, and conventional good practices in corporate governance. It does so by introducing new parameters and by rethinking the way in which the link between the BoD and innovation operates. Thus, we contribute to enriching the scientific debate regarding

the governance of SMEs, the strategic scope of the BoD, the relevance of board-related processes, and the antecedents of innovation. By the same token, we provide several courses of action to managers and policymakers to help SMEs strive for higher levels of innovation through the BoD.

The four board-related processes are all original, which implies that there is no consensus regarding their measurements. This is consistent with the exploratory nature of this study, although the approach was duly supported by the literature, various theoretical postulates, and rigorous statistical tests. In this sense, the analyzed constructs are partial and may be enriched by other items. Future studies could focus on the operationalization of board-related processes to develop even more robust constructs and results.

Furthermore, focusing on a specific type of innovation deprives this study of interesting comparisons that could have been made if other types of innovation or a collaborative approach to innovation (e.g., open innovation) were included in the analysis. Scholars would benefit from looking into these aspects as it would reveal if the effects of the analyzed board-related processes and contingency factors vary depending on the many derivatives of innovation.

Additionally, the complementarity between our four board-related processes and two contingency factors suggests that by omitting other board and organizational characteristics, we may have missed relevant configurations. The literature could place more emphasis on other environmental considerations (e.g., sectoral effects) and regard other board attributes (e.g., roles) for an in-depth and holistic understanding of the link between the BoD and innovation in SMEs. This could even lead to the identification of typologies of innovative SMEs based on two axes: BoD and organizational characteristics.

Moreover, a purely qualitative approach to studying board-related processes might be preferable, given that these concepts mainly refer to behavioral aspects. The analyzed board-related processes comprise underlying elements of certain board attributes that cannot be fully captured through statistical constructs. Their live observation or at least their analysis via interviews are approaches that would have more potential to gain even more substantial insights on how they materialize and how they can influence innovation.

Finally, the sample of 300 SMEs, of which 112 were found to have a BoD, despite being superior to several past governance studies based on primary data and published in leading journals, calls for humility regarding the interpretation of the results. We emphasize that our findings should be interpreted with caution and that a broader study, even if it represents a monumental challenge given the difficulty in surveying directors and the limited number of SMEs that have a BoD, would be of great added value to aim for a higher degree of comprehension and generalization.

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