Building organizational resilience, innovation through resource-based management initiatives, organizational learning and environmental dynamism

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Abstract

Drawing upon the resource-based and dynamic capability views (RBV and DCV, respectively), this study examines the underlying theoretical mechanism between resource-based management initiatives (RBMI) and the resilience and innovation of Vietnamese small- and medium-sized enterprises (SMEs), taking account of potential boundary conditions. Using time-lag data (three waves of data collection) from 188 SMEs, the study finds that RBMI are positively associated with organizational resilience, which in turn enhances innovation. Our results also indicate that organizational learning mediates the RBMI-organizational resilience/innovation relationships. Finally, self-awareness of environmental dynamism significantly strengthens the relationships between organizational learning and resilience/innovation. This study is among the first to combine and incorporate the RBV and DCV as a theoretical insight to explain how organizations develop their internal resources as a capacity for resilience and innovation in the emerging market context of Vietnamese SMEs. This study makes both theoretical and contextual contributions.

Keywords:

Resource-based management initiatives, Resource-based view, Environmental dynamism, Resilience, Innovation, SMEs, Vietnam.

1. Introduction

Presently, organizations are operating in increasingly chaotic business environments (Liu, Cooper & Tarba, 2019; Van Der Vegt, Essens, Wahlström, & George, 2015). This is particularly true in the midst of the COVID-19 crisis which has drastically impacted our usual ways of work (Caligiuri, De Cieri, Minbaeva, Verbeke, & Zimmermann, 2020). Organizations are now facing pressures for their very survival (Butterick & Charlwood, 2021; Ketchen & Craighead, 2020). Rarely does a day go by without a media report about worldwide bankruptcies due to the COVID-19 crisis. This challenging environment forces organizations to become more flexible, adaptable, resilient and innovative in order to survive and flourish (Liu et al., 2019). In the first place, resilience allows organizations to quickly take actions and develop alternatives in order to deal with the risks as well as potential benefits that might flow from this disadvantageous situation (Kantur & Say, 2015; Lengnick-Hall, Beck, & Lengnick-Hall, 2011). Scholars argue that one of the key ways to help organizations to deal with risk and turbulence is to be innovative (Bustinza, Vendrell-Herrero, Perez-Arostegui, & Parry, 2019). Although resilience and innovation are distinct concepts, they may supplement each other (Richtnér & Löfsten, 2014). In the face of challenges, organizations tend to enhance innovation in order to realize returns on their investments, which leads them to become more resilient to prosper in today's turbulent environments (Richtnér & Löfsten, 2014).

For organizations to become both resilient and innovative, their capacity to effectively manage resources and deal with risk is key (Richtnér & Löfsten, 2014; Samuel, Griffin, White, & Fitzpatrick, 2015). Organizational capacities such as resource-based management initiatives (RBMI) are building blocks for firms to develop their internal resources in order to respond to external environment pressures (Do, Budhwar & Patel, 2018; Caligiuri et al., 2020; Wright, Dunford, & Snell, 2001). Indeed, a vibrant stream of research – whether focused on conceptual frameworks (Burnard & Bhamra, 2011; Lengnick-Hall et al., 2011), scale development (Kantur & Say, 2015; Lee, Vargo, & Seville, 2013), and/or empirical investigation (Akgün & Keskin, 2014) - lays the foundation for current and future research to advance our understanding of resilience and its impact on organizational performance.

Despite significant progress in the field, several important gaps remain in our understanding. First, it is still unclear as to what underlying theoretical mechanisms could elucidate the complex nature of resilience, including its antecedents and outcomes (Richtnér & Löfsten, 2014). Second, despite valuable hints suggesting that there is a close interaction between resilience and its external environment (Kantur & Iseri-Say, 2012), there has only been limited exploration of the boundary conditions surrounding the relationship between independent variable and resilience. Third, an advanced theory to underpin our understanding of resilience remains to be reported. Although widely used, the RBV has been criticized for being tautological and for having prescriptive implications (Priem & Butler, 2001). The RBV may not be comprehensive or powerful enough to explain the complex nature of resilience, given the dynamic business environment in which the firm is embedded. A more advanced version of the RBV is therefore needed to unravel the underlying processes and/or boundary conditions between antecedents and outcomes of resilience.

Finally, although a specific research context plays a vital role in understanding its impact on business environments as well as on management practices (Cooke, 2018; Welter & Baker, 2020), little attention has been devoted to contextualizing the BRMI–resilience relationship in under-researched and rapidly growing important settings, such as the Vietnamese SME sector. Vietnamese SMEs in particular are highly vulnerable during global crisis such as COVID-19 due to their limited resources and capabilities in comparison with their larger counterparts (Do & Shipton, 2019). These constraints require them to be resilient in order to survive, deal with risk and thrive in such turbulent times. This context then offers opportunities to advance theory within the unique emerging market represented through Vietnam (Welter & Baker, 2020).

Accordingly, this study examines three questions: (1) whether the BRMI that constitute both innovation-led strategy and HR policy have a positive impact on organizational resilience and its consequences; (2) whether the underlying mechanisms through which the value of organizational learning delivers its positive effect; and (3) whether such mechanisms could be conditional on environmental dynamism.

In addressing these questions, this study aims to achieve four key objectives:

(i) To unveil the complex nature of resilience, including its antecedents and outcomes, in underpinning the interlinkage between RBMI and organizational resilience/innovation, respectively;

(ii) To extend the DCV to theorize managerial-awareness of environmental dynamism as a potential moderator that could strengthen the relationship between organizational learning and resilience/innovation;

(iii) To reconceptualize the RBV by combining it with the DCV as a complementary theory to explain why RBMI as organizational capability can foster organizational resilience and innovation; and

(iv) To examine the theoretical framework with its focus on a representative Vietnamese sample of 188 SMEs – a key emerging market where unique institutional attributes make Vietnam well-placed to explore management initiatives and their consequences.

The contributions of our research are four-fold. First, this study is among the first to empirically examine both the antecedents and outcomes of organizational resilience, providing insights into why, how and when RBMI exert positive effects on organizational resilience and consequent innovation through the underlying theoretical insights of the RBV with dynamic capabilities.

Second, it advances our understanding about the nature and boundary conditions surrounding the relationship between RBMI and resilience and innovation by studying self-awareness of environmental dynamism as a potential moderator. This allows us to reveal insights about the role of environmental dynamism in amplifying the effect of organizations' internal resources and capabilities on organizational resilience and innovation (Baik, Kim & Patel, 2019; Brashear, Gebauer, & Kowalkowski, 2012).

Next, we reconceptualize the RBV by combining it with the DCV. According to our argument, the DCV complements the RBV by highlighting how internal firm characteristics such as management capability (resulting from RBMI) foster resilience and innovation, in turn enabling sustainable organizational growth (Penrose, 1959; Wright et al., 2001).

Finally, it provides empirical evidence from Vietnamese SMEs, which are unique in their resource availability and management capability relative to their counterparts in both Western and other emerging countries. By doing so, we respond to this special issue call asking for research to extend the understanding of management issues in an emerging economy.

2. Why study RBMI and resilience in Vietnamese SMEs?

There is now growing interest in management research in Vietnam where Western assumptions about management initiatives are often adopted and diffused within firms. Vietnam is now one of the rising stars in the world economy, with an annual growth rate of 7% – the highest in the ASEAN bloc. Vietnam embraces a Socialist Oriented Market Economy, differing from other emerging markets (Do et al., 2020). The successful story of Vietnam has been evidenced during the COVID-19 pandemic where, unusually, the country has maintained a growth rate of about 2.91% to 5% of GDP throughout the pandemic. The shift of Vietnam into the world economy has created opportunities and challenges for the country. On the one hand, it could further facilitate trade flows and help Vietnam access larger consumer markets. On the other hand, this shift has triggered aggressive competition from foreign parties against Vietnamese local businesses.

To deal with the intensification of globalization, Vietnamese firms tend to pursue management initiatives based on innovation-led strategies and innovation-led HR policies (Do et al., 2020). Specifically, firms endeavor to strategically align their management practices with environmental expectations in order to attain legitimacy (Lewis et al., 2019). Research has highlighted the increasing adoption of Western-based management initiatives in Vietnam. For example, Do et al. (2018) explore the causal chain between management initiatives (innovation-led strategy and innovation-led HR policy) and firm performance through serial mediations of servant leadership, employee creativity and firm innovation.

SMEs are now considered the driving force of the world economy in terms of job creation, industry innovativeness, and productivity (Doh & Kim, 2014). SMEs clearly have some advantages over their large counterparts with regard to their flexibility, openness and willingness to change and innovate

to ensure their survival, progress and competitive advantage (Wu & Deng, 2020). However, they are often more constrained than larger firms in terms of their resources, capabilities, and less formalized management practices (Do & Shipton, 2019; Doh & Kim, 2014). These constraints could be heightened during the COVID-19 crisis when the global supply chain and business operations have been disrupted and many bankruptcies declared (Kim & Mason, 2020). This disadvantaged situation is putting smaller firms under survival pressure, demanding that they become adaptable, transformational, resilient and innovative to survive and prosper. In this regard, firms must rethink their traditional ways of managing people and resources in order to develop their capacity for resilience, so that they can deal with risk and respond to uncertainty (Caligiuri et al., 2020).

Although SMEs represent around 98% of total enterprises in Vietnam and contribute over 40% to Vietnam's GDP, they are often "fighting for survival" from heightened competition with their rivals, while simultaneously having scarcity of resources (Do & Shipton, 2019; Harney & Alkhalaf, 2021). Although the COVID-19 crisis is placing the growth and innovation potential of SMEs at risk (Kuckertx et al., 2020), their flexibility, work ethos and predisposition for innovation make them particularly adaptable, transformational and resilient in times of crisis (Ratten, 2020). Given that resource constraints may create a potential barrier for SMEs seeking to maximize their resilience capability through people in the face of competitive threat, more work is needed to unpack why, how and when SMEs could leverage their resilience in the underexplored context of Vietnam.

The SME sector may be influenced by Vietnam's institutional complexity. Unlike emerging market counterparts, the Vietnamese government has considerable control over the economic system (Do et al., 2020). Consequently, the government has a major role to play in shaping the organizations' management practices (Do et al., 2020). SMEs need to not only strategically align their business strategies with their institutional conditions to attain their legitimacy but also with external environments. As such, Vietnamese SMEs tend to manage internal resources alongside their dynamic capabilities (i.e. adapting to external environments, willingness to learning new things, establishing their network ties) in order to develop the resilience needed to compensate for resource deficiency (Glaister

et al., 2018; Ratten, 2020). Current research is mainly built on equivocal evidence (Harney & Alkhalaf, 2021). Because the resilience narrative is still in its infancy regarding inferences about its antecedents and outcomes being conceptual and anecdotal in nature (Branicki et al., 2019; Barasa et al., 2018), studying RBMI and their effect on organizational resilience and innovation in the Vietnamese SME sector is a topic of "major theoretical and practical importance" (Soriano, Dobon, & Tansky, 2010, p. 220).

3. Theory and hypothesis development

3.1. The resource-based view and dynamic capability view in tandem

There is increasing interest in how to apply the RBV to explain the underlying complex management issues in today's uncertain business environments. Some pioneering scholars such as Barney (1991; 2001), Penrose (1959) and Wernerfelt (1984) have highlighted the importance of the RBV as a theoretical ground in explaining and understanding the effects of organizational characteristics such as management initiatives and/or capability on sustained firm growth. The key focus of the RBV is that competitive advantage results from internal firm resources (Boxall, 1996; Wright et al., 2001). In order to achieve sustained growth, firms must possess resources that have the components of "value, rarity, imperfect imitability, and non-substitutability" (Boxall, 1996, p. 45). Despite its popularity, much of the existing work has yet to pay attention to exploring the RBV in contexts within highly uncertain and dynamic environments such as COVID-19 (Wu, 2010). Scholarly arguments therefore suggest that the RBV should be extended to more dynamic or highly turbulent environments (Teece et al., 1997; Wu, 2010) because it is less clear how different resource configurations may add value to firms' competitive performance (Priem & Butler, 2001). Critics of RBV research suggest not only that the term is a tautology but also that the approach is static, and that it overlooks external factors (Priem & Butler, 2001; Wright et al., 2001). Theoretical insight with a dynamic view of resources could complement the RBV in order to address these limitations (Bowman & Ambrosini, 2003; Helfat & Peteraf, 2003; Wu, 2010). Since resilience is generally closely linked with external pressure and/or trigger events such as

COVID-19, the RBV – a static theory – cannot, alone, uncover the complex nature of resilience, including its antecedents and outcomes.

The dynamic capability view (DCV) involves 'identifying strategic organizational processes, reconfiguring resources (integrating, gaining, and releasing), and identifying the path to follow to attain competitive advantage' (Chowdhury & Quaddus, 2017, p. 186). A key tenet of the DCV is to underlie the importance of a firm's competitiveness in increasing levels of environmental dynamism (Eisenhardt & Martin, 2000). Other scholars add that dynamic capabilities may allow organizations to upgrade their skills and competences to adapt and respond to constantly changing business landscapes as well as to be able to learn and apply both internal and external firm resources and skills (Teece et al., 1997; Wu, 2010). Organizational learning is considered a dynamic capability through which organizations can foster a learning culture in order to learn and acquire new knowledge, upgrade their skills and competences, and increase their ability to adapt and respond to the external environment pressures. The DCV, therefore, provides an insightful complement to the RBV by turning the spotlight on the different ways in which SMEs need to invest in RBMI which represent the internal ecosystem of management practices that facilitate their organizational learning efforts and align firm internal resources with external environmental pressures.

3.2. Towards resource-based management initiatives

RBMI are conceptualized as the extent to which organizations effectively invest in management initiative practices with a view to fostering management and organizational capabilities (Do et al., 2018; Oke et al., 2012). Such initiative practices might be specific actions or plans as well as innovative HRM towards developing a high quality of human capital. Our literature review suggests that the value of RBMI as an internal ecosystem that develops innovative strategies and HR practices can enable firms to improve their organizational capabilities such as resilience and innovation (Do et al., 2018; Hermans & Ulrich, 2021; Oke et al., 2012). Firms determined to pursue an innovation-based business model often adopt RBMI to achieve their goals through people management. This is because people are the most

important assets in organizations and thus are strategically instrumental for organizational performance (Sanders et al., 2021; Wright et al., 2001).

Firms, therefore, aim to develop their human capital or people through effective investments in management initiatives in order to leverage their resilience and innovation, thereby increasing their competitive advantage (Beugelsdijk, 2008; Jiang et al., 2020). The RBV suggests that management capabilities such as innovative HR practices are a key source of competitive advantage, underscoring the vital importance of the HR function to strategic goals (Barney, 1991; Wright et al., 2001). As such, RBMI constitute firm-specific human capital that enables and enhances firms' performance such as resilience and innovation (Shin & Konrad, 2017).

3.3. Organizational resilience

Resilience is considered as a multifaceted concept that addresses how an organization and its members react to uncertainty (Lee, Vargo, & Selille, 2013). Most research on resilience is drawn upon two key perspectives: (1) static personal characteristic and ability and (2) a process created by continuous incremental improvements (Kossek & Perrigino, 2016; Liu et al., 2019). The first perspective focuses on immediate dilemmas and refers to resilience as the ability to resume expected performance levels quickly after the unexpected crisis. Such an ability is differently developed according to individual traits (Dutton, 2003). The second perspective emphasizes an ongoing developmental procedure in which organizations build the capability to handle stressful situations through past experiences and the consequential learning derived from those experiences. Embedded in such a process, resilience reflects the ability to progress and create new opportunities from an unexpected event (Lengnick-Hall et al., 2011). Resilient organizations can quickly take actions to effectively minimize setbacks and develop alternate routes to achieve stronger growth (Liu et al., 2019).

In this study, we focus on the latter view and *consider resilience as a capability that can be developed and enhanced continuously in an organization*. We agree with Lengnick-Hall et al. that organizational resilience is 'a firm's ability to effectively absorb, develop situation-specific responses to, and ultimately engage in transformative activities to capitalize on disruptive surprise that

potentially threaten organizational survival' (2011, p. 244). We believe that organizations that exploit new knowledge to fuel innovation and continuously anticipate and adjust to unexpected trends can permanently improve the earning power of a core business (Hamel & Valikangas, 2003; Lee et al., 2013; Wong et al., 2021).

Prior research often focused on organizational capabilities to handle day-to-day challenges and pressures that are ever-present throughout an organization's lifespan. These sorts of challenges can be contrasted with extreme events such as the COVID19 pandemic which interrupted the flow of organizational activities and routines globally (Smith et al., 2010). Some scholars suggest that extreme events might provide organizations with the opportunities for rapid learning that can support business performance even when conditions are less extreme (e.g., Stokes et al., 2019).

In what follows, we map the development of the casual relationships between RBMI, resilience and innovation. Figure 1 summarizes the key relationships between the constructs that we explore in this study.

Insert Figure 1 about here

3.4. RBMI and resilience

Gittel et al. (2006) highlight that organizations develop the capacity for resilience using their internal resources. We link this with the RBV, arguing that resilience, as an organizational capability, can be enhanced through the optimal implementation of RBMI. Our argument is grounded on prior research which views resilience as a vital capability to develop through various organizational resources such as structure, practices, cognition, and behavior (Lengnick-Hall & Beck, 2005; Markman & Venzin, 2014; Richtner & Sodergren, 2008). Organizations that employ HR practices as tools help their individual members to react efficaciously to unpredictable events, thereby minimizing the effect of such external contingencies and sustaining competitive advantage (Ángel & Sánchez, 2009). Similarly,

resilience capabilities, as part of organizational capabilities, are sustained in complex routines and processes which are amenable to improvement through appropriate HR practices (Campbell et al., 2012).

Consistent with these arguments, we believe that RBMI have a positive impact on SME resilience. Given that SMEs generally have their resource deficiencies, their capacity to manage their resources effectively and make the right decisions is key in compensating for such constraints (Do & Shipton, 2019). As such, RBMI are essential means that help SMEs to effectively configure their resources and implement their necessary internal change to develop resilience capabilities in order to respond to uncertainty such as COVID-19 and create competitive advantage (Kim & Mauborgne, 1999). RBMI can facilitate internal resources by having in place sophisticated mechanisms for employee learning and development so that people's knowledge is at the forefront of their field, offering training and development such that organizational members become more resilient. Supporting internal resources about employee development should in turn enable the capacity for organizational resilience through enabling the learning necessary to effect change. We therefore hypothesize that:

H1. Resource-based management initiatives are positively associated with organizational resilience.

3.5. Resilience and innovation

Innovation refers to a new idea, practice, or blended material which requires a collaborative effort between individuals, teams or departments within the organization (Chen & Huang, 2009; Kim & Mauborgne, 1999). Organizations are constructed from collectives and work units simultaneously striving towards a common set of goals. This might create comparisons and perceptual gaps among the departments and/or teams, thereby depleting innovative behaviors. To offset this, strong HR systems have the potential to create an organizational climate brimming with congruent perceptions and constructive relationships (Bowen & Ostroff, 2004). This positive work environment is likely to facilitate knowledge sharing and the exchanging of ideas, thereby enabling creativity to flourish. This, in turn, offers a foundation for innovation (Hult et al., 2004; Shipton et al., 2017; Song & Thieme, 2006).

Resilience and innovation are concepts which seem to implicate different ways to manage an uncertain environment (Richtner & Lofsten, 2014) but in fact provide a complementary insight (Hamel

& Valikangas, 2003). Organizational resilience represents a platform for innovation through proactive learning behaviors that facilitates creating and transferring knowledge within an organization (Castellacci, 2015). This knowledge is used to identify solutions for the challenges emanating from market diversities; that is, an innovation process to address such challenges (Carmona-Lavado et al., 2010). When disruptive events occur, organizational resilience generates the instruments to deal with stressful problems for which solutions need to be created. This is because resilience means that organizations possess abilities such as agility, robustness and integrity (Kantur & Say, 2015) and will allow their members to promptly generate solutions or create new products and/or processes. These new innovations would be the answer to the challenging situation and help to sustain overall organizational performance (Castellacci, 2015). We therefore hypothesize that:

H2. Organizational resilience is positively associated with innovation performance.

3.6. Mediating Role of Organizational Learning

Organizational learning is the process by which the organization builds up the knowledge acquired by individuals and then translates this knowledge into part of the firm's knowledge system (Chiva et al., 2014; García-Morales et al., 2012). As the key to maintaining or improving performance through past experience (García-Morales et al., 2012), this element facilitates the development of organizational capabilities which are either valued by customers or difficult to imitate, thereby contributing to the company's competitive advantage (Crossan & Berdrow, 2003, p.1089). This is in line with the RBV that regards organizations as a broader set of resources that not only add value for customers by offering new products but also are a key source of sustainable competitive advantage (Henderson & Cockburn, 1994).

Research that links the RBV with DCV concludes that a firm's competitive position depends essentially on its organizational context and on its valuable, rare, and inimitable capabilities and core competencies rather than on its static resources (Newbert, 2007). Such positive value derives from proactive learning behaviors and stable patterns of collective activities through which the organization flexibly adjusts its routines and modifies its resource base in remaining effectiveness during an uncertain

circumstance (Helfat et al., 2007; Zollo & Winter, 2002). Organizational learning, as a specific type of process, facilitates the evolution and development of dynamic capabilities in organizational context (Ambrosini, 2003; Eisenhardt & Martin, 2000). These findings are encouraging; however, they are solely drawn upon from either the RBV or DCV perspectives. To our knowledge, there is little empirical research which has combined both these factors into a conceptual framework. Neither is it clear about the dynamic relationship between organizational resources and how this relationship develops. With this in mind, we bring together the concepts of organizational learning, organizational resilience, innovation performance, and BRMI in a conceptual framework to understand how these organizational resources complement each other towards customer benefits and the firm's competitive advantage.

As mentioned above, organizational resilience and innovation capabilities are instrumental elements for organizations to overcome the challenges presented by a turbulent and unpredictable wider environment. Firms, therefore, enhance organizational learning through employing RBMI practices such as innovative HRM policies to foster such vital capabilities (Do et al., 2018; Lopez-Cabrales et al., 2009; Oke et al., 2012). This means that scholars link these variables via linear causality where one variable causes another (Chiva et al., 2014). In this sense, investigating the impact of RBMI on organizational learning is critical as it affords us a better understanding of learning as a social phenomenon, which provides people with a clear sense of what the organization expects of them and how and when to do it. More importantly, understanding the role of RBMI in promoting organizational learning helps us to explain how and why things are done (Flores et al., 2012; Gherardi & Nicolini, 2002).

Scholars suggest that organizational learning positively influences firm resilience and innovation in various ways (García-Morales et al. 2012). First, organizations that strive to be resilient normally acquire knowledge that is useful for enhancing organizational adaptation, flexibility, and competitiveness (Kantur & Say, 2015). Just as knowledge is acquired over time, organizational competitiveness is built over time (Leonard & Sensiper, 1998). This means that, as organizations learn and acquire knowledge, their members acquire the ability to develop better ways of working to improve

adaptation, flexibility and effectiveness that help organizations to remain robust and competitive (García-Morales et al., 2012).

Second, firms that devote greater attention to learning are able to seize the opportunities that market demands create, thereby fostering their innovation capabilities (García-Morales et al., 2012). Organizations building and nurturing a culture that supports and fosters learning are likely to be able to predict and adapt to the constantly changing environment, and the new knowledge accquired by the learning process will in turn enable them to innovate, succeed, and develop. Indeed, organizational learning is a central process that helps successfully foster performance advantage such as resilience and innovation (Wang & Ellinger, 2011). Because existing procedures cannot respond to external pressures, firms draw on experimental learning processes in their search for alternatives (Mytelka & Smith, 2002). In this regard, learning occurs in specific institutional contexts that are characterized by RBMI that shape a context for facilitating learning within an organization. This is because the learning process requires organizations to gather information and conduct activities that are well aligned with organizations' goals, strategies and objectives (Sullivan & Nonaka, 1986). Grounded in these ideas, we consider organizational learning as the bridge between RBMI and resilience/innovation.

Based on the aforementioned theoretical developments, we argue that SMEs promoting a learning culture characterized by RBMI are likely to change, innovate and adapt in today's turbulent and unpredictable wider business environment. As learning can enhance knowledge exchange and creation and new ideas that are instrumental for resilience and innovation (Camelo-Ordaz et al., 2011; Shipton et al., 2005), as well as facilitate the creation processes of capabilities within organizations (Weerawardena et al., 2006), we hypothesize as follows.

H3A. Organizational learning mediates the relationship between resource-based management initiatives and organizational resilience.

H3B. Organizational learning mediates the relationship between resource-based management initiatives and organizational innovation.

3.7. Moderating Role of environmental dynamism in SMEs

We concur with Wu (2010, p. 27) that 'the mere existence of appropriate bundles of specific resources is insufficient to sustain competitive advantage in situations involving rapid and unpredictable market change'. In this sense, firms as open systems are characterized as the interlink between existing internal resources and structures of the firm and the conditions of the environment in which it is embedded (Jansen et al., 2006).

There is no doubt that the success of SMEs largely depends on how they respond to external environments through management capabilities such as organizational learning because organizational learning is a dynamic capability enabling firms to update and upgrade their skills, knowledge, and technologies (Wu & Cavusgil, 2006). Business strategy executed within the organization depends on the external environment in which it is embedded (Cassell et al., 2002). Firms should therefore make use of the knowledge base achieved through their constant learning in order to analyze the external environment to detect possible opportunities and threats (Analoui & Karami, 2002). Environmental dynamism is conceptualized as 'instability and unpredictability and requires adaptation through a rapid understanding of the changing environment' (Baik et al., 2019, p. 405). As such, organizations need to create and implement innovative management strategies to cope with this serious challenge by investing in firm-specific resources to build and maximize their dynamic competitive advantage (Simerly & Li, 2000). Organizational learning as a dynamic capability is therefore instrumental for firms to respond to and deal with changing market requirements, thereby providing a grounding for organizational resilience and innovation.

Research suggests that the relationship between management practices and performance outcomes depends on environmental conditions such as environmental dynamics (Simerly & Li, 2000). Given that organizations are embedded in a complex environmental dynamism, such a complex environment is likely to impact learning by steering the learning process and level of learning (García-Morales et al., 2012). We thus argue that environmental dynamism shapes organizational learning such that firms can acquire the skills, knowledge and competences to deal with risk and flourish in highly uncertain environments (Analoui & Karami, 2002). Consistent with these scholarly arguments and

evidence, we argue that environmental dynamism operates as an important boundary condition that amplifies the relationship between organizational learning and resilience/innovation. In particular, when firms perceive higher levels of environmental dynamism, they are likely to effectively invest in organizational learning capabilities in order to develop their capacity for resilience and innovation. This leads to the following hypotheses.

H4A. Environmental dynamism moderates the relationship between organizational learning and organizational resilience such that the relationship is stronger when the level of environmental dynamism is higher.

H4B. Environmental dynamism moderates the relationship between organizational learning and organizational innovation such that the relationship is stronger when the level of environmental dynamism is higher.

4. Methods

In this study, we collected data from different industries including IT, pharmaceuticals, education, professional services and manufacturing firms with between five and 200 employees. We adopted the online survey method to efficiently cut down survey costs and time whilst maximizing the amount of data collected. This method granted us access to a greater number of organizations at lower costs, and eliminated any need for travel to the specific organization to conduct paper-based surveys. Another added benefit to this method is that the participants had complete autonomy over the completion of their respective surveys (García-Morales et al., 2012). A combination of snowball sampling and stratified sampling was used to obtain a valid data base. We employed snowball sampling to gain a higher response rate by making use of social networks (friends, alumni, co-workers). With this method, we were able to gain access to more organizations of interest to form our sample. This method proved effective during the peak of the COVID-19 pandemic when 'time 3' of the research was administered. We started with 500 organizations from the list provided by the Vietnam Chamber of Commerce and Industry (VCCI), of which 240 agreed to participate in this research.

The online survey link was then sent via email to the CEO of each organization with a cover letter explaining the ethical issues of the study, as well as the confidentiality and usage of the data gathered. In the emails sent to the participants, we also asked the recipients to share the link with other organizations to ask them to participate in the survey depending on their interest and willingness. This helped reduce possible desirability bias as the cover letter promised to keep all individual responses completely confidential and conduct the questionnaires online. These initiatives t would prevent the identification of any individual or organization (García-Morales et al., 2012). We used the top management as the key informants as they have thorough understanding of the management strategies, management practices and organizational learning applied within their organizations that help them evaluate how resilient their organizations are.

Whilst in most surveys the time span for collecting data usually covers three to six months, we collected data in a nine-month period for several reasons. First, a nine-month cycle could help us to better assess the effects of firm management strategies and practices on their performance. Ideally, it takes at least three months for organizations to review their current resources and set up a plan for implementation of any new HR practices or policies. Reviews then will be undertaken after six months, long enough for the outcomes of such implementation to manifest (Beevers & Rea, 2010). It is thus a nine-month cycle in total for firms to evaluate a transfer-learning cycle. Second, our nine-month data collection cycle is also consistent with past studies that collected their data over nine- to twelve-month cycles (e.g., Robinson, 1996) to capture and assess how management strategies and practices influence performance outcomes over a certain period of time.

At Time 1, we asked CEOs to rate RBMI (from September to November 2018). Nine months later, at Time 2, we asked CEOs to measure organizational learning and environmental dynamism. A further nine months later, at Time 3, we asked CEOs to provide information on their resilience and innovation performance as well as their firm size, age, ownership, and lines of business.

On the return of surveys, we used stratified sampling with firm size to filter participants (Mathew et al., 2013). This is to ensure that all measurement items are represented in samples and

consequently increase the precision of estimates for the whole target population – Vietnamese SMEs. Information provided by the managers of large-sized companies (over 200 employees) was excluded from the data analysis. Complete data were available for 188 participants (a 78.33% response rate). Furthermore, 23.9% of firms were from the IT industry, 6.4% were from the banking industry, 4.3% were from the pharmaceutical industry, 21.8% were from the education industry, 10.6% from the manufacturing industry, and 33% from other industries. The private sector makes up 92.6% while the public sector only accounts for 6.9% of participant firms. The average firm size is 40.58 employees, and the average firm age is 11.45 years.

4.1. Measures

This study adopted all established measures that were originally developed in English; these were subsequently translated into Vietnamese in accordance with the proposed back-translation method (Brislin, 1970). All the measures were assessed using a 5-point Likert scale, from 1 = *strongly disagree* to 5 = *strongly agree.*

4.1.1. Resource-based management initiatives

This index was measured with a nine-item scale developed by Oke et al. (2012). A sample item is: "Management spends sufficient time and money supporting innovation". Given that management initiative strategy was measured by two distinct dimensions – innovation-led strategy and innovation-led HR policy – we conducted a confirmatory factor analysis (CFA) to test the factor structure of the nine management initiative practices. We confirmatory-analyzed the fit of the management initiatives index via the construction of a second-order factor from the two dimensions it is composed of. The result indicated a good data fit with indices of fit ([χ2] = 47.501; [df] = 26; $\chi^{2/}$df = 1.826; p < .001; [CFI] =.97; [TLI] = .96; [RMSEA] = .06; [SRMR] = .04). Its Cronbach's alpha is .89.

4.1.2. Organizational learning

The measure was calculated using a 17-item scale (a shorter version) adopted by Flores et al. (2012). It comprises of five dimensions: information acquisition (four items); information distribution (two items); information interpretation (three items); information integration (four items); and

organizational memory (four items). Its sample item is: “Our firm employees develop new ideas and knowledge.” As this variable is dimensional, we confirmatory-analyzed the fit of organizational learning index via the construction of a second-order factor from the five dimensions that it is composed of. The result indicated a good data fit with indices of fit ([χ2] = 139.437; [df] = 109; $\chi^{2/}$df = 1.279; p < .05; [CFI] =.96; [TLI] = .95; [RMSEA] = .04; [SRMR] = .05). Its Cronbach’s alpha is .88.

4.1.3. Environment dynamism

This was measured using a five-item scale developed by Jensen et el. (2009) but originally developed by Dill (1958). Its sample item is: ‘In our local market, changes are taking place continuously’. Its Cronbach’s alpha is .77.

4.1.4. Organizational resilience

The measure was assessed using a nine-item scale adopted by Kantur and Say (2015). It consists of three dimensions: robustness (four items); agility (three items); and integrity (two items). Its sample item is: “This company is successful in generating diverse solutions.” As this measure has three distinct dimensions, we confirmatory-analyzed the fit of organizational resilience index via the construction of a second-order factor from the three dimensions that it is composed of. The result indicated a good data fit with indices of fit ([χ2] = 26.204; [df] = 24; $\chi^{2/}$df = 1.091; p < .05; [CFI] =.99; [TLI] = .99; [RMSEA] = .03; [SRMR] = .04). Its Cronbach’s alpha is .81.

4.1.5. Firm innovation

We used a seven-item scale with two dimensions of innovation performance including administrative and technical innovation by Chen and Huang (2009), but originally developed by Ibarra (1993). The variable aims to mirror the extent to which organizations are pleased with the achievements in their process of innovation implementation (Chen & Huang, 2009). Its sample items are “Responsiveness to environmental changes.” A number of researchers have examined firm innovation utilizing this reliable valid scale that enables its measurement.

In order to further confirm its validity and reliability, we tested the dimensionality of our measure by conducting CFA. CFA of the two second-order factors demonstrated an acceptable data fit

with indices of fit (χ^2 = 15.171; df = 13; p < .05; $\chi^{2/}$df = 1.167; CFI = .99; TLI = .99; RMSEA = .03; SRMR = .03). This result is consistent with early work that adopts two dimensions of firm innovation (e.g., Chen & Huang, 2009). Its Cronbach's score alpha is .84.

4.1.6. Controls

Firm age, size and ownership are used as control variables in this study. We measure firm age based on its founding date as recognized in the survey. In particular, we asked: "How long has your firm been in operation?". Firm size is measured as the logarithm of the number of full-time workers at the time of the survey. Firm ownership has two categories – public and not public – measured as a dummy variable (1 = "public", 2 = "not public").

4.2. Statistical Analysis

We employed Mplus software (7.31) for statistical analysis because it can (i) yield bootstrap confidence intervals for the immediate indirect effect, from which inference is made (Hayes & Preacher, 2010); (ii) allow us to test simple slopes for moderation models; and (iii) allow for the utilization of a full information maximum likelihood estimator for all analyses (Jensen et al., 2013; Preacher et al., 2011). Following this prescription, we first conducted a series of CFA tests of the study variables in order to ensure that they were valid and reliable for statistical analysis. We finally tested the structural models corresponding to the proposed hypotheses: (1) and (2) direct models; (3) mediation models, and (4) moderation models.

4.3. Results

Table 1 shows the descriptive means, standard deviations and corrections of the study variables.

Insert Table 1 about here

4.3.1. Measurement Testing

We conducted a series of confirmatory factor analyses (CFA) to evaluate the discriminant validity of the scales following Dyer, Hanges, and Hall (2005). The measurement model consisted of

five variables: RBMI, organizational learning, environmental dynamism, organizational resilience, and firm innovation. The results indicated that the one-factor model demonstrated a poor fit with the data ($\chi 2 = 607.304$, df = 65; ($p < .01$); χ 2/df = 9.34; [CFI] = .46; [TLI] = .35; [RMSEA] = .21; [SRMR] = .17). By contrast, the hypothesized five-factor measurement model demonstrated a good fit with the data ($\chi 2 = 84.477$, df = 55; ($p < .01$); χ 2/df = 1.53; [CFI] = .97; [TLI] = .95; [RMSEA] = .05; [SRMR] = .04). For a further construct validity test, we tested the other alternative models to compare them with the five-factor model. The first alternative model was tested with a four-factor model in which RBMI and organizational learning were combined into one factor. This model demonstrated a poorer fit with the data ($\chi 2 = 183.646$, df = 59; ($p < .01$); χ 2/df = 3.11; [CFI] = .87; [TLI] = .83; [RMSEA] = .10; [SRMR] = .06). Another alternative model was tested with a three-factor model in which RBMI and organizational learning were combined into one factor; and organizational resilience and innovation were combined into one factor. This model indicated a poorer fit with the data ($\chi 2 = 207.029$, df = 62; ($p < .01$); χ 2/df = 3.33; [CFI] = .85; [TLI] = .81; [RMSEA] = .11; [SRMR] = .06). Results indicate that all the alternative models fit the data significantly worse than the five-factor model does. Taken together, the results demonstrate that the discriminant validity of our manager self-rated constructs was substantiated, and the five factors were distinct from one another.

4.3.2. Hypotheses Testing

Table 2 presents the results of hypotheses testing. We report the residual covariance matrix, which is derived after removing the effects of control variables (Jensen et al., 2013). Hypothesis 1 postulated that RBMI would be positively associated with organizational resilience. We tested this hypothesis, controlling for firm size, firm age and ownership in our analysis. The results indicated that RBMI is positively associated with organizational resilience ($\beta = .10$; $p < .05$), thus providing support for Hypothesis 1. This result reinforces the scholarly view that organizational capability is a key driver of resilience (Lengnick-Hall, Beck, & Lengnick-Hall, 2011). Likewise, Hypothesis 2 predicted that organizational resilience would be positively associated with organizational innovation. We tested this hypothesis, controlling for firm size, firm age and ownership in our analysis. The results indicated that

organizational resilience is positively associated with organizational innovation ($\beta = .61$; $p < .01$), thus supporting Hypothesis 2. This is consistent with the view of Richtnér and Löfsten (2014) that innovation is an important outcome of resilience.

Hypothesis 3A postulated that organizational learning would mediate the relationship between RBMI and organizational resilience. To test for mediation, we first examined the influence of the independent variable on the mediator and the outcome, and the mediator on the outcome after accounting for the independent variable. Mediation is significant when the strength of the independent variable and outcome relationship is reduced or non-significant (Aryee et al., 2012). Our results indicate that RBMI positively influence organizational learning ($\beta = .46$, $p < .01$); organizational learning positively relates to organizational resilience ($\beta = .10$, $p < .05$); and RBMI significantly impact organizational resilience ($\beta = .23$, $p < .05$). The results suggest that the RBMI–organizational resilience linkage is initially established and mediated through organizational learning. We then tested mediation, controlling for firm age, size and ownership. The indirect effect of RBMI on organizational resilience is non-significant ($\beta = .05$; $p > .05$). We therefore conclude that the indirect effect of RBMI on organizational resilience is fully mediated by organizational learning, thus supporting Hypothesis 3A.

To more robustly test this mediated effect we employed the bootstrapping procedure (Preacher & Hayes, 2008) to assess indirect effect in the mediator. Specifically, we conducted the bootstrapping with 10,000 random samples using a 95% confidence level. Results demonstrate that the 95% bootstrapping confidence interval for organizational learning lies between .01 and .13. Since zero lies in the 95th per cent of confidence intervals, we concluded that the indirect effect is significantly different from zero ($p < .01$) (Preacher & Hayes, 2008).

Hypothesis 3B proposed that organizational learning would mediate the relationship between RBMI and organizational innovation. Following the steps conducted by Hypothesis 3A, our results demonstrate that RBMI positively influence organizational learning ($\beta = .46$, $p < .01$); organizational learning positively relates to organizational innovation ($\beta = .36$, $p < .05$); and RBMI significantly impact organizational innovation ($\beta = .26$, $p < .01$). The results suggest that the RBMI–organizational

innovation linkage is initially established and mediated through organizational learning. We then tested mediation, controlling for firm age, size and ownership. The indirect effect of RBMI on organizational innovation as partially mediated is significant ($\beta = .17$; $p < .01$), thus supporting Hypothesis 3B. To lend further support, the results of the bootstrapping with 10,000 random samples using a 95% confidence level demonstrate that the 95% bootstrapping confidence interval for organizational learning lies between .04 and .35. Since zero lies in the 95th per cent of confidence intervals, we concluded that the indirect effect is significantly different from zero ($p < .001$) (Preacher & Hayes, 2008).

Hypothesis 4A suggested the moderating effect of environmental dynamism on the relationship between organizational learning and organizational resilience. We utilized a model constraint procedure to test this hypothesis, controlling for firm age, size and ownership. This procedure was relevant because it was used to calculate and test any extra parameter required within the model (Hayes, 2017). The primary purpose of this model was to examine the extent to which the effects of low and high environmental dynamism influence the relationship between organizational learning and resilience, and thus a new parameter was created. To do so, we used the new subcommand to create a name for it (i.e., NEW(SIMP_LO SIMP_MED SIMP_HI ENDMEAN ENDSD). As shown in Table 2 and Figure 2, the interaction between organizational learning and environmental dynamism on organizational resilience is significant ($\beta = .12$; $p < .01$). The interaction plot for this result is depicted in Figure 3. The figure demonstrates that organizational learning is positively associated with organizational resilience when the level of environmental dynamism is higher. Therefore, Hypothesis 4A is supported. This result suggests that there is a mutual interaction between resilience and its external environment (Kantur & Iseri-Say, 2012).

Hypothesis 4B suggested the moderating effect of environmental dynamism on the relationship between organizational learning and organizational innovation. We followed the same procedure as Hypothesis 4A to test this hypothesis, controlling for firm age, size and ownership. As shown in Table 2, the interaction between organizational learning and environmental dynamism on organizational innovation is significant ($\beta = .16$; $p < .01$). In Figure 4, the interaction plot for this result is depicted.

The figure demonstrates that organizational learning is positively associated with organizational innovation when the level of environmental dynamism is higher. Therefore, Hypothesis 4B is supported.

Insert Table 2 and Figures 2, 3 & 4 about here

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5. Discussion

There is growing interest in understanding the complex nature of resilience with inferences about its antecedents and outcomes (Barasa et al., 2018; Branicki et al., 2019). This study joins this important stream of research by exploring the nature of how and when RBMI drive resilience with subsequent innovation in a unique but unexplored SME context of Vietnam. To achieve this research goal, we draw upon a sample of 188 Vietnamese SMEs through three waves of data collection, and integrate the traditional RBV (Barney, 1991) and the DCV (Teece et al., 1997) as a theoretical advancement that underpins the underlying hypotheses of the study. In particular, we first invoke this theoretical logic to hypothesize and find that RBMI positively affect firm resilience, which in turn enhances firm innovation. These results imply that BRMI are the integral means through which SMEs can optimize their resource configuration and capacity building to increase resilience and its subsequent innovation because, when trigger events happen, resilience allows firms to generate solutions to tackle the challenges they face, such as COVID-19 (Castellacci, 2015; Kim & Mauborgne, 1999). Next, we relate the RBV with dynamic capabilities to relevant literatures to provide insights into as to how RBMI influence firm resilience/innovation through the mediating mechanism of organizational learning. Our results indicate that organizational learning has a vital mediating role to play in enabling firms to develop their capacity for resilience and innovation. This is because learning can promote knowledge exchange and creation and drive new ideas that operate as key ingredients for organizational resilience and innovation (Camelo-Ordaz et al., 2011; Shipton et al., 2005).

Last, we extend the DCV to examine the potential role of environmental dynamism in moderating the relationships between organizational learning and resilience/innovation. This study

provides empirical evidence to support the vital role of external environmental conditions in amplifying the management-outcome relationship (Baik et al., 2019). Our findings indicate that RBMI are directly and indirectly associated with firm resilience and innovation through both the mediating effects of organizational learning and the boundary conditions of environmental dynamism. Our findings augment empirical demonstrations to reinforce the resilience literature in several ways: (i) resilience as a capability could be continuously developed through organizational capabilities such as management initiatives and strategic HRM (Lengnick-Hall et al., 2011; Liu et al., 2019); (ii) a resilient organization is also an innovative one because organizational resilience provides a necessary complement to innovation in helping SMEs to deal with risk and prevail under extremely uncertain times (Richtnér & Löfsten, 2014); and (iii) organizations must align their internal resources with external needs (Baik et al., 2019; Simerly & Li, 2000) to be more resilient because there is a close interaction between external pressures and resilience (Kantur & Say, 2015). This study therefore offers a number of both theoretical and practical implications.

5.1. Theoretical Implications

This study contributes to theory in different ways. First, it is among the first to unpack the complex nature of resilience, including its antecedents and outcomes, by providing insights into why, how, and when RBMI exert positive effects on SME resilience and its consequences through the theoretical logics of RBV and DCV. Our findings suggest that RBMI are a key management tool that could help firms to effectively manage and reconfigure their resources as a key source to develop the capacity for organizational resilience (Barney, 1991; 2001; Wright et al., 2001). RBMI that involve both innovation-led strategy and innovation-led HR policy are likely to support organizations to focus on their internal resources as a source of competitive advantage that nurtures and develops their capacity, such as the human capital needed for resilience. RBMI are a highly salient means that functions as a system of mechanisms between structures, processes and individual working relationships; these in turn enable individuals and organizations to acquire, exchange and utilize new and/or complex knowledge to become more resilient in the face of risk in today's increasingly turbulent environments. Therefore,

an effective use of RBMI is a priority for organizations, particularly SMEs, if they wish to become more resilient, innovative and competitive. As such, we conclude that RBMI are an optimal management tool with a focus on internal resource management that promotes a context for organizations to develop their capacity for resilience. Our study, therefore, sheds light on the resilience literature by confirming RBMI as an important antecedent of resilience.

Second, despite being two distinct concepts, resilience and innovation are empirically found to complement each other in the current study. Organizations that seek to maximize their internal resources (through people management and management capability) to be more resilient often experience higher innovation performance. These organizations then tend to innovate so as to increase the returns on their investments in resilience. This study therefore reinforces the view that resilience and innovation offer complementary insights into each other (Hamel & Välikangas, 2003; Richtnér & Löfsten, 2014). This study also suggests that innovation is an important outcome of resilience.

Third, the study highlights the role of organizational learning as an important dynamic capability that mediates the relationship between RBMI and resilience/innovation. Orgnaizational learning as a dynamic capabilty can enable firms to realize the need to modify and upgrade their skills, resources and competences to survive and prosper in the highly uncertain environment (Glaister et al., 2018; Linden & Teece, 2014). It is for this reason that resources should be optimally managed to add value to the firm, and thus it must build and enhance dynamic capabilities that modify the resource base and encourage internal change in order to maximize their performance advanatage (Helfat et al., 2009). In this light, the linkage between RBMI and resilience/innovation is best underpinned through the RBV with dynamic capabilities where firms optimize their internal resources via organizational learning programs and efforts. In the context of Vietnam, where SMEs are generally influenced by their institutional conditions, the intensification of globalization and competition, and resource limitations, they must become more flexible and dynamic to make use of their internal resources as well as adapt well to external pressures. As such, the static RBV with dynamic capabilities need to interact with and complement each other well in order to fully explain the unique but complicated context of Vietnamese SMEs. Therefore, we could

argue that firms that pay greater attention to effectively investing in RBMI are likely to facilitate an organizational culture of learning that is considered a dynamic capability that can help firms develop their capacity for resilience and innovation. This is well aligned with the view that organizational innovation can be fostered through several organizational and managerial factors (Chiva et al., 2014) such as management practices, organizational learning – i.e. open dialogue, interaction with the external environment, and employee participation. For innovation to occur, organizations need to focus on shaping and nurturing a strong organizational culture in which learning is at the heart of organizational activities and operations. Once every single employee considers learning as part of their job duties, organizational innovation will become a reality. For example, firms that learn how to develop potentially valuable resources and capabilities as well as to overcome specific competitive challenges will accrue critical competitive advantages (Weerawardena et al., 2006). Our results provide evidence that organizational learning fully mediates the relationship between RBMI and SMEresilience/innovation, thereby supporting this argument.

Our results also underscore the importance of external environmental conditions that amplify the relationship between RBMI and resilience/innovation capabilities. By doing so, we advance our current understanding of the boundary conditions of manager self-awareness of environmental dynamism in building a capacity for organizational resilience. This is because resilience often closely interacts with its external environment conditions (Kantur & Iseri-Say, 2012). A key characteristic of organizational theory discipline is its emphasis on a firm's environment (Raisch & Birkinshaw, 2008, p. 3914). By this logic, we argue that the analysis of environmental factors may help depict the conditions under which organizational learning is most likely to lead to higher resilience/innovation capabilities. Organizational learning is a dynamic capability that enables firms to maximize their capacity for resilience and innovation by matching internal resources with external needs (Baik et al., 2019; Simerly & Li, 2000). Our empirical evidence suggests that environmental dynamism is strongly upheld as a key model of organizational learning.

Finally, our findings have implications that the RBV should be applied alongside the DCV in order to provide better insights into how Vietnamese SMEs can develop innovative management strategies as their internal resources in combination with their organizational learning as a dynamic capability in order to become more resilient and innovative to prosper in today's highly turbulent environments. Vietnam is known as a country in transition with its complex economic systems and models; yet remains a developing country. Like SMEs in other emerging markets, Vietnamese SMEs are constrained by their resource deficiencies and less formalized management practices (Do & Shipton, 2019). Vietnamese SMEs, therefore, need to depend on their strategic and innovative approaches to compensate their resource constraints. As such, firms need to 'pursue new types of competitive approaches which transcend traditional strategies' (Simerly & Li, 2000, p. 39). In the spirit of the RBV with dynamic capabilities, this study underscores that Vietnamese SMEs with their unique characteristics should be flexible, dynamic, and transformational in managing and reconfiguring their resources in accordance with external environmental changes. Such dynamic capabilities are, therefore, considered as the resilient capabilities of SMEs to enable them to mitigate these uncertain changes (Chowdhury & Quaddus, 2017). In this regard, firms need to not only depend on RBMI to optimize their internal resources via the deployment of valuable, rare, and non-substitutable resources that are able to create value, but also build up their dynamic capabilities. These in turn can enhance the resource base and foster change in order for the firm to be more competent, resilient, and innovative to deal with increasingly turbulent market environments (Barney, 1991; Glaister et al., 2018; Helfat et al., 2009). The DCV thus represents a useful complement to the RBV to comprehensively explain this complex issue in the context of emerging markets like Vietnam.

5.2. Practical Implications

Our findings provide implications that organizational learning and environmental dynamism are at the heart of the relationship between RBMI and organizational resilience/innovation. Therefore, SMEs should effectively invest in RBMI so that they are able to represent the organization as a role

model in developing organizational learning that helps to innovate and overcome the challenges these SMEs face.

Our findings also demonstrate that it is necessary for SMEs to align their management strategies with external environments in order to innovate and position themselves in the marketplace. This alignment means that SMEs must pursue RBMI that nurture and promote their learning in order to respond to external pressures. In this regard, environmental dynamism is the salient tool that shapes a key model of organizational learning (Analoui & Karami, 2002). SMEs therefore must take this into account in pursuit of their RBMI, resilience, and innovation.

Our results suggest that organizational learning, resilience, and innovation are key ingredients for organizations' survival and long-term development. It is therefore argued that organizational learning is a major component in any effort to enhance firm performance and retain a source of competitive advantage (García-Morales et al., 2012). This is because the acquisition of new knowledge derived from organizational learning will help the firm to stay updated, adaptable and dynamic, in turn enhancing firm performance (García-Morales et al., 2012). As such, managers must be fully aware of the importance of organizational learning to their survival, success, and long-term effectiveness. In so doing, firms should consistently execute RBMI that help build and nurture a work supportive environment to promote and stimulate individual learning. As a result, individual employees' knowledge will be aggregated into organizational knowledge with a view to contributing to superior long-term performance.

Most importantly, our results help to address the question: "How can Vietnamese SMEs develop their capacity for resilience during the current pandemic?". In doing so, we suggest the need to pursue an integrative solution here. First, SME owners or CEOs should act as effective crisis leaders who have the capacity to manage their resources effectively and make the right decisions to deal with such a crisis (Hannah, Campbell, & Matthews, 2010). Consequently, SMEs could become more absorptive, adaptive, and transformational to achieve quality outcomes in times of crisis (Samuel et al., 2015). Second, SMEs should be fully aware that in order for them to deal with risks and flourish in times of crisis, they must

put resilience practices in place so as to develop their capacity for resilience. More specifically, they should provide employees with adequate training programs in resilience development techniques; in this way, employees will acquire the necessary skills and expertise for the successful implementation of resilient management goals and employees' awareness of resilient values will be enhanced. Finally, we need the active involvement of the government in terms of offering initiative frameworks that guide, direct, enable, and support SMEs to develop their capacity for resilience. To achieve this goal, the policy makers who serve as important moderators to inform laws, regulations, and policies as well as link SME business activities with the government's reform and renewal have a significant role to play.

5.3. Limitations and Future Directions

Despite its strengths, our study has several limitations. First, we only analyzed self-reported data obtained from CEOs or managers of SMEs, and thus this could lead to measure errors or biases (Glaister et al., 2018). We therefore suggest that future studies should collect data from multiple informants to address this limitation.

Second, given that this study was undertaken in the context of Vietnam that is characterized by its unique institutional environments and economic development models, the generalizability of the findings is limited because the study was only exposed to Vietnamese management styles. Future research should address this limitation by conducting comparative studies to cross-nationally examine the complex nature of resilience, including its antecedents and outcomes, in emerging markets.

Third, extant research highlights the role of HR specialists in building individual/ organizational resilience, organizational trust/safety, employee voice, creativity and innovation, and so on (Collings, McMackin, Nyberg & Wright, 2021; Harney & Collings, 2021). Therefore, it could be necessary to "address both top-down and bottom-up relationships and thus to bridge micro and macro domains - arguably one of the biggest future challenges in management research" (Nohe et al., 2013, p. 379). As such, it is time to investigate the RBMI-resilience and its outcome relationship at the cross-level of analysis. In the current study, we stop at the firm-level of analysis to understand the theoretical logic underlying the mechanisms between RBMI and resilience/innovation. We, therefore, suggest that future

research should adopt the multilevel approach to consider organizational contextual effects in the complex nature of resilience, including its antecedents and its outcomes at different levels of analysis.

Finally, as with early work, we employ only the subjective measure of firm innovation. However, as it would be challenging to compare objective measures of performance (McClean & Collins, 2011), scholars have accepted this limitation. To address this imperfection, future studies should adopt both subjective and objective measures of innovation performance to replicate and extend the findings of this study.

6. Conclusion

The present study casts new light on our understanding of the interlinkage between RBMI and resilience and its consequences. Drawing upon the theoretical insights from the RBV with DCV and relevant literature, we find both moderating and mediating roles (e.g., organizational learning and environmental dynamism) that optimally underlie the RBMI-organizational resilience/innovation relationship. RBMI have an indirect effect on organizational resilience/innovation through the moderating as well as mediating roles of organizational learning and self-awareness of environmental dynamism, respectively. Our longitudinal data underscore the transmission pathways or processes through which RBMI affect firm innovation. In particular, such results offer insights into how SMEs can pursue RBMI that nurture and promote their learning and resilience capabilities in order to respond to external pressures.

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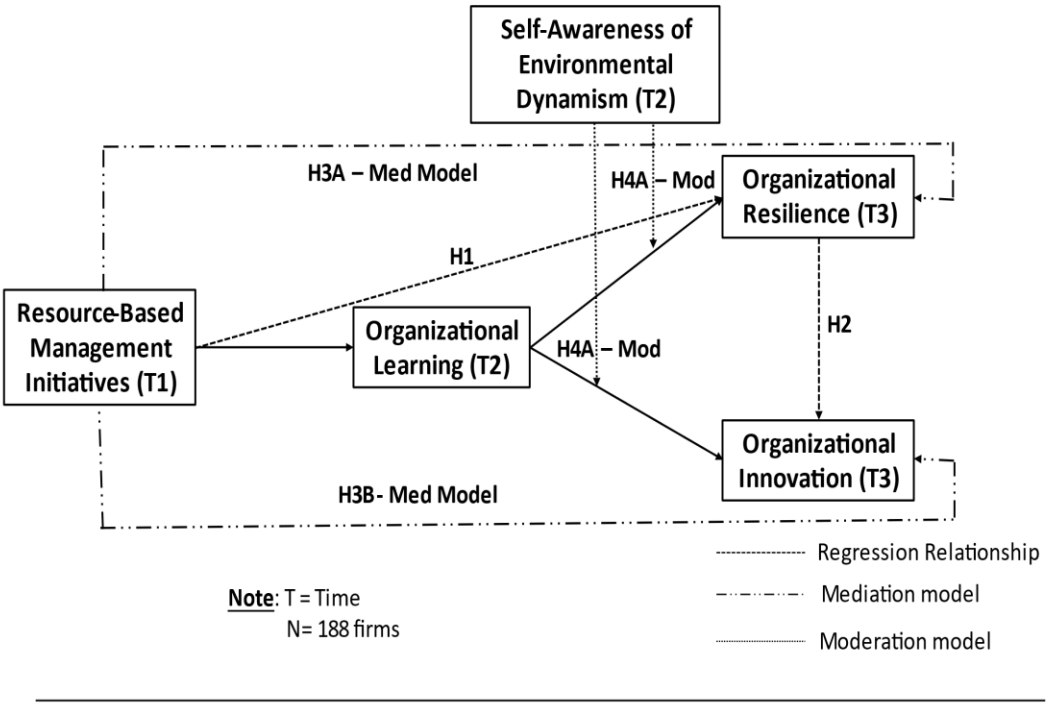

Fig. 1. Conceptual model

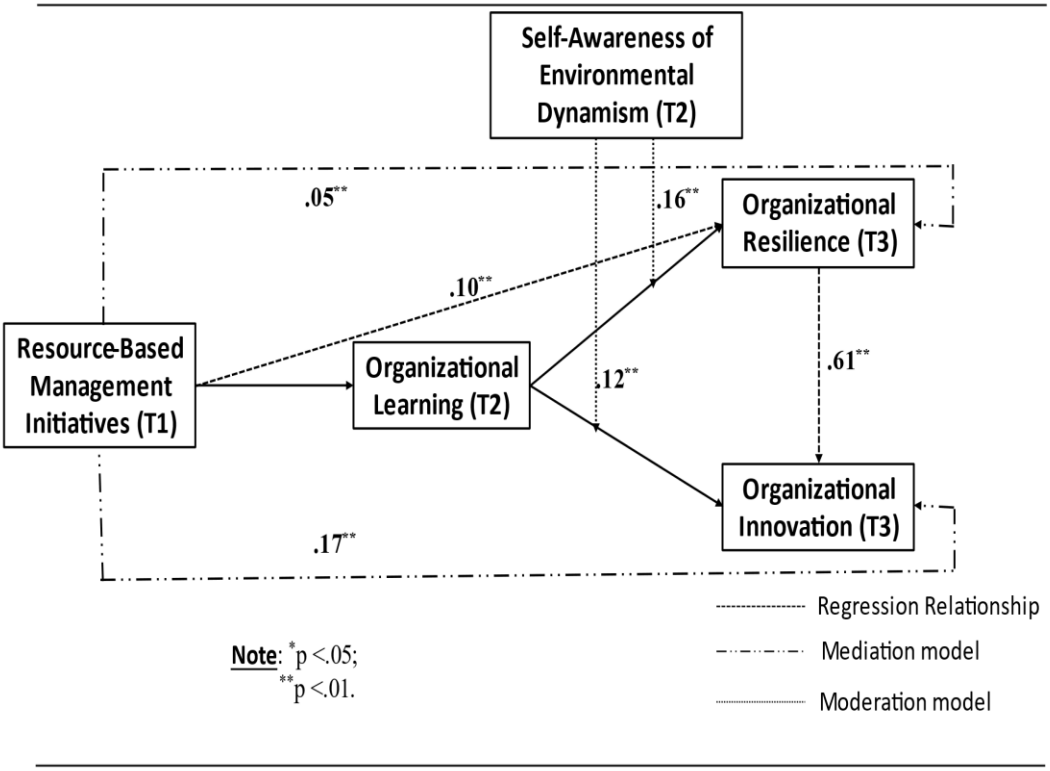

Fig. 2. Results of path analysis

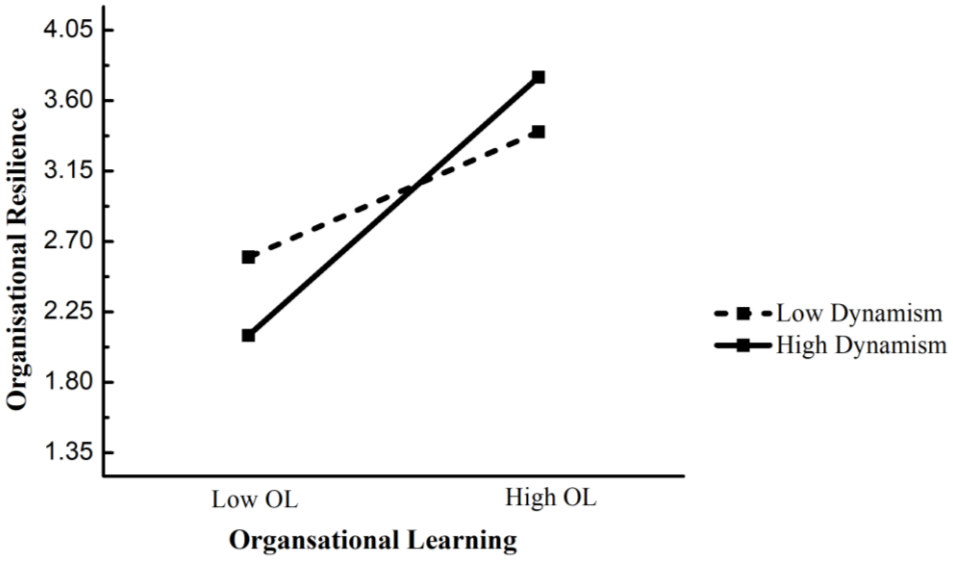

Fig. 3. Moderation effects for organizational learning × environmental dynamism → organizational resilience

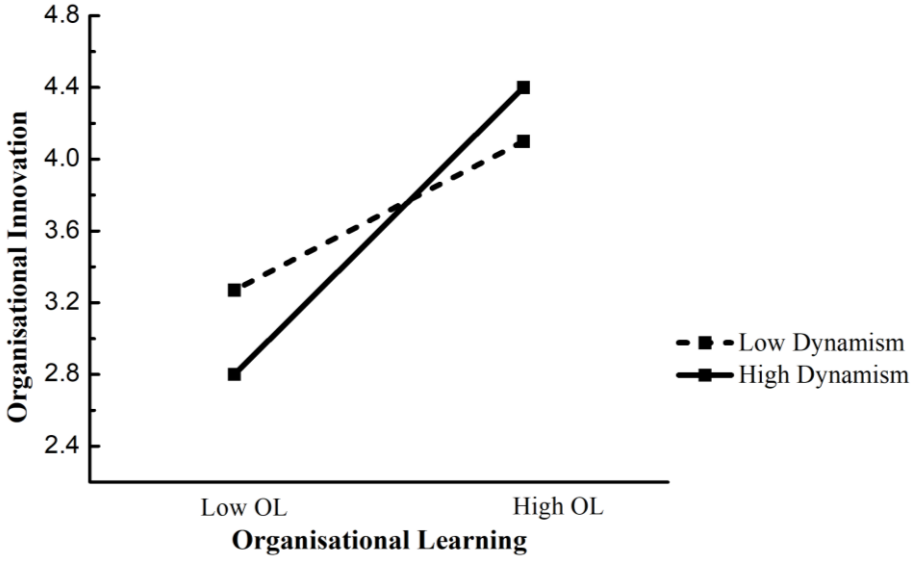

Fig. 4. Moderation effects for organizational learning × environmental dynamism → organizational innovation

Table 1

Means, standard deviations and correlations of the study variables

Variable	Mean	SD	1	2	3	4	5	6	7	8
1. Firm Size	40.58	17.73	-							
2. Firm Age	11.45	7.78	.52**	-						
3. Firm Ownership	1.93	.26	-.22**	-.41**	-					
4. RBMI	3.96	.33	-.12	-.16*	.00	***.89***				
5. Organizational Learning	4.15	.29	.11	-.05	.04	.49**	***.88***			
6. Environmental Dynamism	3.85	.37	-.01	.08	-.03	.14	.38**	***.77***		
7. Organizational Resilience	3.84	.39	.00	.07	-.06	.07	.03	.11**	***.81***	
8. Organizational Innovation	3.86	.52	-.05	.08	.02	.01	-.02	.03*	.62**	***.84***

Notes: Coefficient alpha values are presented in italics along the diagonal; RBMI = Resource-based Management Initiatives; Ownership code 1 = public, 2 = private.

*p <. 05.

**p <. 01

Table 2

Results of hypothesis testing

Paths	Coefficient (estimate)	SE	*t*Value	P-Value
Hypothesis 1				
RBMI → RESILIENCE	0.10	0.04	2.17	0.03
Hypothesis 2				
RESILIENCE → INNOVATION	0.61	0.13	4.69	0.00
Hypothesis 3A				
RBMI → LEARN	0.46	0.17	2.58	0.01
LEARN→ RESILIENCE	0.10	0.05	1.88	0.06
RBMI → RESILIENCE	0.23	0.11	2.18	0.03
RBMI → LEARN → RESILIENCE	0.05	0.03	1.56	0.12
Hypothesis 3B				
RBMI → LEARN	0.46	0.18	2.58	0.01
LEARN → INNOVATION	0.36	0.10	3.46	0.07
RBMI → INNOVATION	0.26	0.14	1.80	0.00
RBMI → LEARN → INNOVATION	0.17	0.08	1.98	0.05
Hypothesis 4A				
LEARN × ENVIR → RESILIENCE	0.12	0.04	2.62	0.01
LOW-ENVIR	0.12	0.06	2.06	0.04
MED-ENVIR	0.17	0.06	2.69	0.01
HI-ENVIR	0.21	0.07	3.09	0.00
Hypothesis 4B				
LEARN × ENVIR → INNOVATION	0.16	0.03	5.45	0.00
LOW-ENVIR	0.23	0.04	6.43	0.00
MED-ENVIR	0.29	0.04	7.39	0.00
HI-ENVIR	0.36	0.05	7.75	0.00
Covariance				
RBMI, LEARN	0.08	0.03	3.24	0.00
RBMI, ENVIR	0.05	0.02	2.47	0.01
LEARN, ENVIR	0.16	0.09	3.80	0.00
RBMI, RESILIENCE	0.14	0.03	5.36	0.00
RBMI, INNOVATION	0.13	0.03	4.63	0.00
LEARN, RESILIENCE	0.14	0.03	4.62	0.00
LEARN, INNOVATION	0.09	0.02	3.61	0.00
RESILIENCE, INNOVATION	0.14	0.02	5.75	0.00

Notes: RBMI = Resource-based Management Initiatives; LEARN = Organizational Learning; ENVIR = Environmental Dynamism.