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The Role of Mediation and Moderation Factors**

Latifi, Mohammad-Ali; Bouwman, Harry

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Business Model Innovation and Firm Performance: The Role of Mediation and Moderation Factors

MOHAMMAD-ALI LATIFI & HARRY BOUWMAN

Abstract Business model (BM) innovation is vital for today's businesses. However, BM innovations can be irreversible, and therefore, in comparison to product, service or process innovation, entail bigger risk and ambiguity. Understanding the way in which BM innovation exerts influences over firm's performance would help business-owners to be more effective. Based on a systematic literature review, a model to examine how BMI impacts firm performance through mediating and moderating factors was developed. Based on in-depth analysis of 37 articles, we identified twenty moderating factors classified in four groups, i.e., Firm-Characteristics, Industry-Characteristics, BM Implementation, and BM Practices, and ten mediating factors, categorized in three sub-groups, i.e., Revenue Growth, Efficiency Growth, and Enhancing the Organizational Capabilities. This paper offers the grounding for empirical research as well contribute to the development of tools to assess the effectiveness of the BMI.

Keywords: • Business Model Innovation • Performance • Mediation • Moderation •

CORRESPONDENCE ADDRESS: Mohammad-Ali Latifi, Ph.D. Candidate, Delft University of Technology, Technology, Policy and Management Faculty, Jaffalaan 5, Delft, The Netherlands, e-mail: s.m.a.latifirostami@tudelft.nl. Harry Bouwman, Professor, Delft University of Technology, Technology, Policy and Management Faculty, Jaffalaan 5, Delft, The Netherlands, e-mail: W.A.G.A.Bouwman@tudelft.nl

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1 Introduction

Business is subject to rapid change in technology, regulation, and customers and competitors behaviors. To sustain continued growth, to become more profitable or simply to survive, firms have to adapt their business logic. Since the advent of the Internet, the notion of Business Model (BM) and Business Model Innovation (BMI) gained a lot of attention in industry and academia. BMs describe the logic of how a company creates, delivers and captures value (Teece, 2010). As a means of renewal and adaptation to a changing market (Hartmann, Oriani, & Bateman, 2013), Business Model innovation has the potential to create competitive advantage (Magretta, 2002), can enhance value creation (Teece, 2010) and opportunity recognition (Guo, Tang, Su, & Katz, 2017) to exploit a market niche not addressed by competitors (C. Zott & Amit, 2007). Since performance improvement is at the heart of any firms, the contribution of BMI on performance has attracted more and more attention (Hartmann et al., 2013; Lambert & Davidson, 2013; Karimi & Walter, 2016). Although these studies have enriched knowledge on the link between BMI and performance, this line of research is still at an infant stage (Zott and Amit, 2013).

Unlike innovation in product, service, and process, BMI requires fundamental changes in core components of the organization's BM (Nair, Paulose, Palacios, & Tafur, 2013). BM Innovation (BMI) is therefore associated with high risk and uncertainty also due to the possible turmoil and resistance in the organization (Yannopoulos, 2013). The best-formulated BM may fail to lead to improved performance if not handled properly (Chesbrough, 2010; Knab & Rohrbeck, 2014). For instance, Christensen, Bartman, and Van Bever (2016) identified that more than 60% of BMI efforts did not deliver the expected improved performance.

BMI does not automatically trigger impressive performance gains. So far, most academic studies looked primarily at types and components of BMs and proposed a large number of distinct explanations of BM performance (Haggège, Gauthier, & Ruling, 2017). To date, we have no understanding of cause-effect relationships and mutual dependencies in the linkage between the BMI and firm performance (Methlie & Pedersen, 2008). BMI scholars, recently, have called for causal analyses of antecedences and effects of BM, for large-scale investigations and application of advanced methodologies (Zott et al., 2011; Spieth et al., 2014; Clauss, 2016; Methlie & Pedersen, 2008). With the exception of some qualitative studies, there is little empirical research examining factors which influence the success of BMI initiatives in firms (Patrick Spieth et al., 2016). In the literature, the causal relation between BMI activities and firm higher performance remains unclear (Sebastian Knab, René Rohrbeck, 2014).

In this study, we are not focused on the question of whether BMI has performance implications. This study attempts to address deeper questions about (1) 'WHY' and 'HOW' BMI affects performance, i.e. researchers simply directly relate BMI to performance without understanding what is in between, and (2), 'WHEN' and under which conditions, the relationship between BMI and firm performance can be

strengthened. The first question leads to the need to understand mediators, and the second to understand moderators factors. Therefore, our objective is:

to develop a conceptual framework that explains the complex mechanisms through which BMI influences firm performance.

We contribute to existing Business Model literature in two ways. First, the proposed model considers mediating and moderating effects elucidate how managers can ensure that BMI brings more benefits for the firms in terms of performance, and provides a conceptual foundation for practice and future research. Second, it helps practitioners to align their BMI efforts with firm's strategy and daily operational activities by providing a big more concrete picture of what is going on in the firm.

This paper is structured as follows: First, the literature on mediating factors between BMI and performance of the firm is shortly presented, followed by a discussion of our empirical constructs. Our research method is then described. Next, the conceptual model is presented. Finally, we draw conclusions, discuss limitations and come up with some suggestion for future research.

2 Literature Review

Business Model Innovation. A business model, which serves as a tool to analyze and communicate strategic choices (Lambert & Davidson, 2013; Shafer, Smith, & Linder, 2005), is seen as a realized expression of strategy (Casadesus-Masanell & Ricart, 2010; Dahan, Doh, Oetzel, & Yaziji, 2010) and articulates how available resources can be used effectively, how costs can be reduced, and how new sources of revenues can be leveraged (Chesbrough, 2007). According to Bock, Opsahl, George, and Gann, (2012), firms striving for a long-term performance need to innovate their BM. Moreover, the potential of technologies can often only be realized by using a new BM (Chesbrough & Rosenbloom, 2002). At a fundamental level, scholars and practitioners agree that the BM is vital to growth (Teece, 2010; Terrenghi, Schwarz, Legner, & Eisert, 2017), gain competitive advantage (Mitchell, 2003; Afuah, 2000), enhance long-term performance (Bock et al., 2012), and enable further innovation (Zott, 2011).

Through BMI, a firm may be able to exploit a new market which is not addressed by its competitors and open up a niche market (Hartmann et al., 2013). However, BMI is a highly complicated and risky process with an uncertain outcome (Waldner, Poetz, Grimpe, & Eurich, 2015; Marc, Sosna; Rosa Nelly, Trevinyo-Rodriguez; Ramakrishna, 2010; Chesbrough, 2010), because it necessitates experimentation (McGrath, 2010), managing conflicts, interaction with people on different level of expertise and modifying the ongoing process of BM (Latifi & Bouwman, 2017) and asks for specific leadership style (Smith, Binns, and Tushman, 2010). Hence, knowing how and when to innovate a BM is a serious challenge (Hartmann et al., 2013).

Firm Performance. Performance has been at the core of management thinking (Haggège et al., 2017), as performance directly affects the continuation of the firm, it became an essential concept in management research (Rauter, Jonker, & Baumgartner, 2017). Venkatraman and Ramanujam (1986) have pointed out that firm performance is a multi-dimensional construct. They proposed three general levels of firm performance, i.e. financial performance, business performance and organisational effectiveness, each with their own indicators like for example return on assets (ROA) (Parker, 2000), growth, market share, diversification, and product development (Gray, 1997), and employees satisfaction, quality, and social responsibility (Rauter et al., 2017).

Initial research model. Building on the short review and following Foss and Saebi (2016), we consider performance, innovativeness, as outcomes. Moderators can be studied on a macro, or on a micro/firm level as depicted in figure 1. This model is elaborated upon based on a systematic literature review.

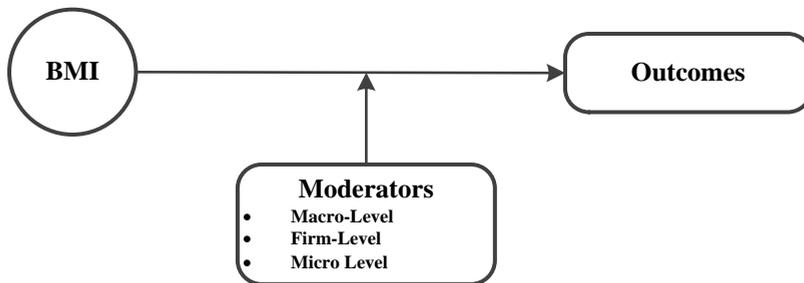


Figure 1: Initial Research Model adapted from Foss & Saebi (2016).

3 Research Method

A systematic literature review is based on replicable, scientific, and transparent process (Cook et al., 1997). Using such an approach researcher's potential bias will become explicit, effects of chance decrease, and the validity of data analysis will enhance (Reim, Panda, & Ortqvista, 2015). As mentioned, we were looking for finding out under which moderating and mediating mechanism BMIs has an effect on performance. Next, we made use of academic databases such as Web of Science, ABI/INFORMS, Science Direct, and Wiley Online Library. 'Business model,' 'mediating,' 'moderating,' and 'performance' were used as keywords in search of databases. We did not set any limitations on papers' publication date or types of documents. So we included journal papers, conference articles, working papers as well as book chapters. This search yielded 115 publications considered to be relevant based on titles, abstract and keywords. Omitting duplications, these produced 97 unique citations.

In the third step, based on the abstracts, collected publications were screened for their match and correspondence with our research objective. We include papers based on the following criteria:

- Are explicitly and empirically tested hypotheses about the relation between BMI and Business Performance by using a quantitative, empirical, analytical approach being proposed.
- Is reference made to BMI as a way to change main components of the BM by introducing a new system of value creation, value proposition and value capture?
- Refers to Business Performance, as discussed before
- Refers to the firm as a unit of analysis.

Based on criteria mentioned above, thirty-five papers found to be irrelevant at this stage. Only reviews reporting relevant outcomes (remaining fifty-two publications) were reviewed to find out that articles met the above-specified inclusion criteria. Through in-depth review, twenty-seven papers were identified as relevant. Furthermore, references of identified articles were used as a secondary source of literature analysis. This resulted in identifying ten additional papers. These papers were included in our sample. As a result, our systematic literature review was built on thirty-seven articles.

As said before, many research has recently revealed that there is a lack of knowledge in the causal relationship between BMI and firm performance and asked to consider mediation and moderation effects between these two. Therefore, we expected to find few numbers of studies, hence did not set any limitation on publication years and paper types. Figure 2 has been shown that the topic has received attention in recent years, and approximately 76% of our 37 selected articles were published between 2012 and 2017. Moreover, 33 out of them were journaled papers (89%), three conference papers (8%), and one working paper (3%).

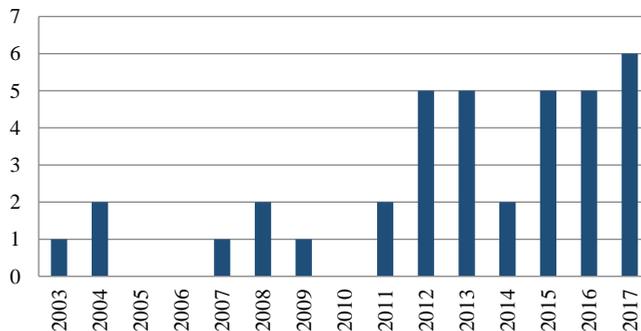


Figure 2: Number of selected papers in the final analysis (Yearly)

In describing, classifying and analyzing the selected papers, we employed a coding approach classifying mediator, moderator, and control variables. All key points were

listed on a coding sheet (Dey, 1993) and classified into new categories (Burnard, 1991). After this open coding, the categorized list was jointed under higher level classifications. To limit the number of categories, data were grouped (Dey, 1993).

4 Results

4.1 Moderation Effects

Different factors introduced in the literature as contingency and moderating variables which can effects relationship between BMI and fir performance. Some factors were not linked directly to the firm but are related to its environment such as industry sectors. Other factors were associated with firm's attributes, for instance, its size and age. We could find a great amount of identified factors were related to how the BMI was implemented within the firm, for example, the employees' skills and commitment can strengthen the relationship between BMI and performance. There was another group of factors were mostly related to BMI practices, such as the speed, scope, and novelty of BMI which can influence the relationship. Therefore based on abovementioned criteria, we categorized identified moderating factors into four groups; BMI-Implementation, BMI-Practices, Firm-Characteristics, and Industry-Characteristics.

BMI-Implementation. In our previous study on why BMI fail to deliver expected outcomes (Latifi & Bouwman, 2017), we revealed that about 60% of identified barriers to accomplish BMI objectives and attain expected performance lies in the implementation stage of BM. Although managers mostly concentrate and spend a lot of time and energy on (re-)designing a viable BM, the major challenges can be found in the implementation of a BM, as BMI implies fundamental (Nair et al., 2013). Various studies mentioned "poor implementation" as one of the main reasons of BM failure (Osterwalder, 2012; Batocchio, Ghezzi, & Rangone, 2016; Chesbrough, 2010; Yannopoulos, 2013). Therefore the more skilfully and knowledgeably firm implement their BMI, the more performance enhancement will occur. Many studies revealed that key source of BM failure is connected to its management (Batocchio et al., 2016; Zott, Amit, & Massa, 2010; Chesbrough, 2010). Moreover, Martins, Gerasymenko, De Clercq, and Saprienza (2014) affirmed a positive relationship between BM change experience of a firm's CEO and performance.

People in a company are key to success or failure of a BM innovation program (Hittmár, Varmus, & Lendel, 2014). Depending on the degree of changes in the BM, not only some employees' training is required to develop relevant capabilities (Batocchio et al., 2016; Hittmár, Varmus, & Lendel, 2014), but hiring new personnel with special qualification also might be needed (Knab & Rohrbeck, 2014).

BM is often used as an approach to make clear what the core logic of a company is; it is also important to share and to communicate the BM within the organization. Serrano, Serrano, and Al-Debei (2010) stated that lack of communication is an important issue of successful implementation of BMI. Lack of communication also leads to distrust between

employees, departments, and management (Hittmár et al., 2014), therefore can influence the effective implementation of BMI.

BMI-Practices. Foss and Saebi (2017) reported that different organizational capabilities and practices are required to support BMI such as experimentation and learning through trial-and-error (Marc Sosna; Rosa Nelly, Trevinyo-Rodriguez; Ramakrishna, 2010), and tools to support practitioners in managing the BMI process were presented.

Moreover, as one of the management practices in BM innovation, Bocken, Weissbrod, and Tennant, (2016) stated that business experimentation not only can lead to creating more BMI but also is viewed as a process to achieve greater levels of innovation in the BM. According to Brunswicker, Wrigley, and Bucolo (2013), the BM 'experimentation', helps firms to test assumptions and hypothesized outcome through empirical observations such as usage data and market share. Yli-huumo, Rissanen, Maglyas, and Smolander (2015) argued that most of their research participant acknowledge that even though using experimentations might require investing more time to create and release the features to the end-user, it is still a better approach when expanding business and introducing high-quality products.

Although there are some commonly used tools and frameworks such as Canvas, STOF, CSOFT, and VISOR and tools (see businessmakeover.eu) to support the process of BMI, Terrenghi et al. (2017) expressed the necessity for developing of software and tools that support the entire process of BM management. There is however hardly empirically studies on whether BM tooling contributes to the process of BMI or not (de Reuver et al., 2018, forthcoming). Karimi and Walter (2016) argued that companies mostly use the BM concept for analysis and design, but have not yet fully embraced it as management instrument in the implementation and control phases. Moreover, according to Gerasymenko et al. (2015) and Nicholls-Nixon and Cooper (2000); the scope of innovation in BM, for instance, to change in one or two components or to change entire the BM, i.e., an architectural change, can impact the outcome of BMI. Apart from the scope, the speed of change and the path followed to reach the new BM plays a critical role (Foss & Saebi, 2016).

The degree of novelty of BM also can be important. There is a different level of performance expected for new to the firm than for new to the industry or even new to the world BMs (Dahlin & Behrens, 2005; Zott & Amit, 2007).

Firm-characteristics. Prior research revealed that firms do not attain equally from innovativeness because their capability to capture the value of innovativeness depends on different characteristics of firm and industry (Sorescu and Spanjol 2008; Tellis, Prabhu, and Chandy 2009). Therefore, some specific characteristics of organizations can strengthen the relationship between BMI on performance. Based on our literature review, firm-characteristics consists of firm size, firm experience, firm age, advertising intensity, expenditures on R&D, the intensity of change, and scope of change in BM.

Hartmann et al. (2013), found the size of the firm and experience of the firm to be positively related to performance (Zott & Amit, 2007; Klepper & Simons, 2000) and revealed the moderating role of firm size and firm experience. The size of the firm has been associated with firm innovation in a variety of research (Gronum, Steen, & Verreyne, 2016; Heij, Volberda, & Van den Bosch, 2014; Rubera & Kirca, 2012; Damanpour, 1991). Rubera and Kirca (2012) argued that larger the firms, the more likely to benefit from innovativeness in terms of market and financial positions. They can utilize more resources and reach consumers more quickly because they have better access to distribution channels, enjoy economies of scale, benefit from brand reputation.

Gronum et al. (2016) consider firm age, measured by the number of years since its founding, as moderating variables on the relationship between BMI and performance. In their research, Heij et al. (2014) also took into account firm age as a moderator variable. Rubera and Kirca (2012) and Zott and Amit (2007) considered the advertising intensity as a moderating effect in their research. Furthermore, expenditures on R&D has been seen as an important factor which influences the relationship between BMI and firm performance (Zott & Amit, 2007). Gerasymenko et al. (2015) revealed that the intensity of change in BM innovation, incremental or radical change, has a moderating effect on the relationship between BMI and firm performance. They also consider the scope of change, innovation in the core or peripheral aspects of the firm BM as a moderator.

Industry-characteristics. Industry-characteristics impact has theoretical foundations in the Industrial Organisation theory discussing environmental factors in relation to the industry in which a firm acts and having a significant influence on firm's performance (Rauter et al., 2017). We considered industry sector, industry life cycle, industry competition, environmental conditions (dynamism, complexity, and turbulence), high-technology versus low-technology industries as relevant industry-characteristics factors. Gronum et al. (2015), Heij et al. (2014), and Brettel, Strese, and Flatten (2012) considered industry sector as a moderating factor between BMI and firm performance. Moreover, industry life cycle has an important role to play in affecting BMs (Wei, Song, & Wang, 2017). Waldner et al. (2015) expressed that most BMI to occur in the emergent life cycle stage of the industry, but not in mature or in decline stages.

Rules of the game in the business world are not only determined by the firm's actions but also by competitors and environmental causes (Carayannis, Sindakis, & Walter, 2015). When a potential competitor decides to enter the industry, the firm may have to modify its plan of action based on competitor's BM (Casadesus-Masanell & Ricart, 2010). Waldner et al. (2015) in their empirical research on a sample of 1,242 Austrian firms, argued that industry competition negatively influences the degree of BMI.

In different studies, dynamic environments were considered as moderating variable. Dynamic environments can be seen as a source of opportunities (Schneider and Spieth, 2013). Thus, in more dynamic environments, developing and running a new BM can be expected to have a stronger effect on firm performance than in less dynamic environments (Heij et al., 2014). On the other hand, regulation changes occurring within and outside

the industry can influence the performance of an ongoing BM innovation (Bohnsack, Pinkse, & Kolk, 2014; De Reuver et al., 2009). Zott and Amit (2007) in their research on 190 entrepreneurial firms, found a little support to moderating effect of environmental conditions on the relationship between BM design and the performance of a firm. Rubera and Kirca (2012) argued that since innovation has a different impact on high-technology and low-technology industry, the technology level of industry can be taken into account as a moderator. Innovation is crucial for competition in high-tech industries, in which firms are forced to constantly introduce new products to meet rapidly changing consumer needs.

4.2 Mediation Variables

We found ten mediating effects and categorized them into four groups which are associated with Efficiency Growth, Revenue Growth, and Enhancing the Organizational Capabilities.

Efficiency Growth. Zott and Amit (2007) stressed that one of the key influences of BMI on firm performance occurs when it focuses on efficiency. BMI can take the ICT ventures to complete its transactions more efficient, by reducing transaction costs within the firm and with outsiders (Ben Romdhane Ladib & Lakhal, 2015). According to Chesbrough (2007), BMI leverage performance through utilizing available resources more effectively, as well as reduction in production costs. For instance, by adopting new partnering models such as outsourcing, organizations are able to more effectively scale down operations.

Efficiency-centered BM design theme, according to Gronum et al. (2015) can enhance the firm performance through reduction in inventory costs and decrease in marketing, sales, and other communication expenditures for all participants in company supply chain. Furthermore, increasing scale leads to reducing operating costs. Therefore, by focusing on lowering operating cost, benefits can be passed on to customers.

Revenue Growth. BMI can provide opportunities both during periods of rapid economic growth and at times of economic downturn via exploiting ongoing industry transformation. Plenty of scholars stated that BMI through creating values (Teece, 2010) and opportunity recognition (Guo et al., 2017) leads to exploit a market niche not addressed by its competitors (Zott & Amit, 2007) and in such a way, increase firm's revenue growth. To illustrate, by adopting new partnering models, organizations are able to create additional access to additional resources to scale up quickly or complementary resources as new opportunities for service bundling arise.

BMI using new ways for economic exchanges and focusing on novelty can create value for stakeholders (Ladib & Lakhal, 2015). Introducing a new BM with new components also can provide opportunities for new complementary effects among existing components of services and products (Heij et al., 2014) and in this way it can increase

revenues. Vermeer (2016) shows that new revenue model, as one of the components of BM, has the strongest effect on firm performance (Vermeer, 2016).

Gronum et al. (2015) confirmed the mediatory effect of the novelty design theme between innovation breadth and firm performance. They stated the BM novelty could improve the performance through the following mechanism; firm can offers new combinations of products, services, and information to customers (bundling), links customers to products/services in novel ways (new experience) (Bouwman et al, 2008), design new transaction mechanism (Zott & Amit, 2007), and finally, innovating in one component needs to be complemented by changes in other components.

Enhancing the Organizational Capabilities. Organizational capabilities are required to make BMI efforts. Firms to be enabled to renew their BM, need to possess a certain level of capabilities such as detecting new technology and market needs, open-mindedness and innovativeness. Once firm starts to explore, design, test and implement their BMI, this process of BMI, enhance its organizational capabilities. For example, being opportunity seeker is required for developing a BMI, on the other hand, conducting a BMI after a while, improve opportunity seeking capability of the firm. In other words, with BMI firms are expected to improve their organizational capabilities.

The capacity to innovate is one of the most significant factors that improve business performance (Burns & Stalker, 1961; Porter, 1990). Culture, defined as expressed norms, values, and beliefs, boost behavior ultimately related to business performance (Hult et al., 2004). When specific attitudes are accommodated in the organizational culture, the consequences of behavior are expanded across circumstances, groups, and individuals within the firm. As Barney (1986) stated a culture that supports the implementation of a strategic attempt, like in our research BMI, is not easy to imitate and then can lead to a sustainable competitive advantage.

Another organizational capabilities might mediate the relationship between BMI and performance is the capability of opportunity-seeking. The role of BMI in opportunity-seeking behavior has been emphasized in several studies (Chesbrough, 2010; Dewald and Bowen, 2010; Doz and Kosonen, 2010). Exploiting opportunities were proved as a mean to impact firm performance by BM (Bock et al., 2012).

BMI is a result of performing innovation in the firm BM. As a consequence, BMI can increase the innovativeness of people within the firm in various ways such as sharing the business idea entire organization, developing the opportunity seeking capabilities and creating real value propositions .

Moreover, organizational learning is one of the critical organizational processes through which information and knowledge can be processed, and it can change the attributes, behaviors, capabilities, and performance of an organization. Hu (2014) in his research conducted on 163 companies confirmed that BMs affect technological innovation performance through organizational learning indirectly.

Mahmood and Hanafi (2013) affirmed that entrepreneurial orientation is a capability that provides a competitive advantage and impressive performance to the firm. In addition, research conducted by Ladib et al. (2015) also expressed that by learning how gathering the unique know-how and utilizing of rare resources, BMI creates a benefit of a hard to imitate innovation.

Building on the literature review, we developed an exhaustive and reference model (Figure 3) to explore the relationship between BMI and firm performance.

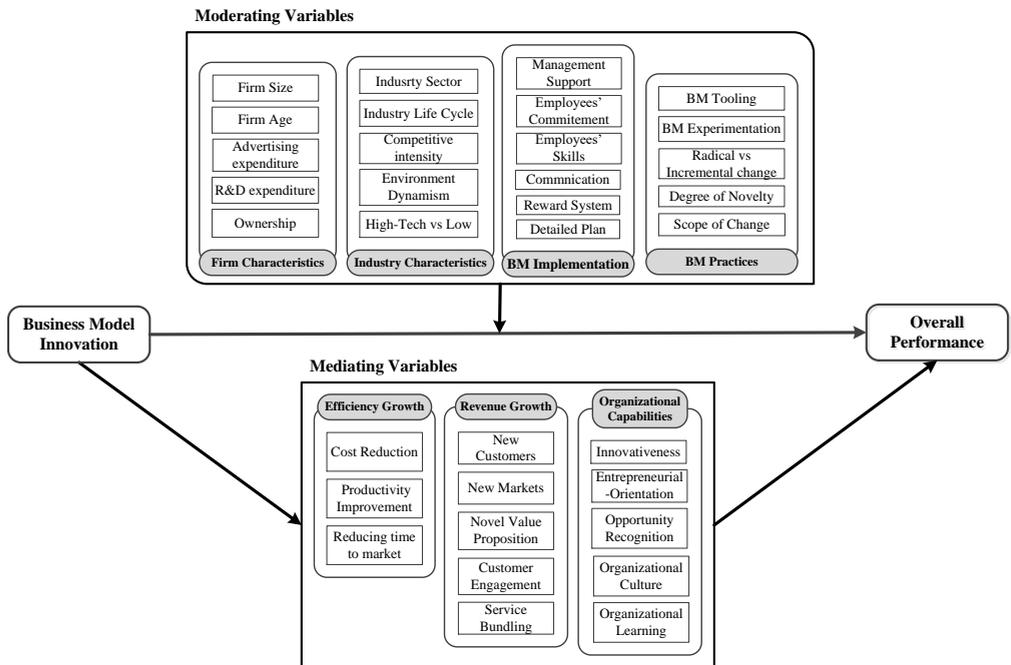


Figure 3: Research outcome: BMI mechanism to boost firm performance

5 Discussion and Conclusion

These days the only thing that is constant is change itself. Adapting to change is crucial for businesses. Being aware of this complex and dynamic environment, companies have to introduce a new way of earning money and improve their performance by innovating their BM. Although in the last two decades researchers conceptualized, defined and provided different frameworks and tools to support practitioners and company-owners to develop their BMI, there is still ambiguity about how BMI leads to firm performance. We found empirical research with contradictory outcomes; some revealed that there is a positive, some negative and in some cases they could not find significant relations. Understanding the mechanism under which BMI impact performance is not an easy task

due to many variables at play, the long assumed causal chain of events, while in practices BMI processes are far from linear and can be considered to be a kind of tinkering process (Heikkilä et al., 2018). As stated by Foss and Saebi (2016), it is not a linear mechanism for creating value starting from suppliers moving to the firm and the customers. Value creation comprises a more complicated, interconnected set of interactions and activities among different actors.

To fully understand the effect of BMI on performance, it requires clear identification of the causal structure in the relationship between BMI and performance (Fry & Smith, 1987) and in-depth know-how what actually happens in BMI projects, with paths are followed and with what outcomes, as is shown by extensive case study research (Heikkilä et al., 2018). In this paper, based on systematic literature review of empirical studies, we develop a model that presents potential moderating, and mediating effects are playing a role when researching BMI and firm performance (see figure 3).

To identify under which conditions, the relationship between BMI and firm performance can be affected, we could identify twenty moderating factors and classify them in four sub-groups; Firm-Characteristics includes firm size, age, advertising and R&D expenditures, and type of ownership; Industry-Characteristics consists of industry sector and life cycle, competition intensity, environment dynamism and level of technology; BM Implementation comprise of top management support, employees' commitment and skills, communications among different stakeholders and, having detailed plan of action, and the last one, BM Practices; includes BM tooling, BM experimentation, Scope of change, Speed of Change, and Degree of Novelty.

While looking at this different moderating subgroups, the moderating factors which are related to firm-characteristics and industry-characteristics are mostly non-variant, and firms cannot manage them to improve the performance of BMI effort. For instance, although firm size, firm age, and industry sector can influence the relationship between BMI and performance, firm owners and managers are not probably able to change them. On the other hand, moderating factors which associated with BM-Implementation and BM-Practices are mostly actionable. For example, practitioners can use BM tooling, BM experimentation or increase their employees' motivation or not; they can make the decision for taking some specific action. BM-Implementation and BM-Practices related factors are more manageable. Therefore, there is a lot of room for firm owners, managers and even researchers to work in these two specific subgroups to reach a higher firm performance.

To answer under which casual mechanism the BMI indirectly influence the firm performance, in next step, we found 10 mediating factors and classify them into three sub-groups; Efficiency & Cost Reduction, e.g. focus on productivity, reducing time to market, and cost reduction due to partnership; New Customers & Revenue Growth, e.g. Focus on new value propositions, customer engagement, service bundling and creating lock-in effect, and the next mediator sub-group, Enhancing the Organizational

Capabilities consists of innovativeness, organizational learning, organizational culture, developing opportunity recognition and fostering entrepreneurial orientation.

Although our findings revealed that the research to find the mediation and moderation factors between BMI and firm performance are limited, we found 23 studies proposing moderating effect and 19 research considered specific factors as control variables (which means that they can affect the relationship). However, only eleven studies tested the causal relationship and mediation effects between BMI and firm performance. Because of the significant role of mediation factors in understanding how BMI improve the outcomes of the company, more research in this field is required. Developing a testable casual model of how BMI impact on firm performance, we argue that we fill the gap in the literature and the model can pave the way for future researchers. Authors, at a next step, aim to examine the model by using empirical data gathered from SMEs throughout of Europe in 2017 and 2018.

This paper also has some limitations. We were able to identify 37 articles in the selected academic database which hypothesized and empirically tested the mediation and moderation effects on relationships between BMI and firm performance for in-depth analysis; However, by focussing on journal papers only, we might have missed recent research, as well as research in other languages than English. Limitations related to selection bias may also play a role.

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