



Agnes Asemokha

**UNDERSTANDING BUSINESS MODEL  
CHANGE IN INTERNATIONAL  
ENTREPRENEURIAL FIRMS**



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## **UNDERSTANDING BUSINESS MODEL CHANGE IN INTERNATIONAL ENTREPRENEURIAL FIRMS**

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# Abstract

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Business models (BMs) underpin an organization's core activities and are fundamental drivers in creating and capturing value across a firm's value chain. BMs have attracted significant attention from research and practice because they foster innovation, facilitate competitive edge, accelerate adaptation to internationalization, and improve performance. Despite the contemporary relevance of BMs in the literature, it remains heterogeneous, lacking in definitional and construct clarity. BMs have been explored from various perspectives. In this study, BM is examined in relation to the operationalization of change. Specifically, the way BM changes are manifest in the internationalization of entrepreneurial firms. International entrepreneurship (IE) as a research perspective provides explanations that elucidate how firms excel in their pursuits across borders. Thus, gleaned that the integration of BM and IE is promising, both research perspectives are utilized in this study.

The dissertation addresses the *role of BM change in international entrepreneurial firms*. The study uses a mixed methodological design by combining the strengths of lived experiences, contextual accounts of international entrepreneurs (qualitative inquiry), and statistical relationships (quantitative inquiry) to generate empirical findings on BM change in the internationalization journey of firms. The study utilizes theoretical perspectives rooted in IE and partly in the strategic management literature to examine the research inquiry. *BM thinking* is deployed to gain a holistic understanding on the iterations of BM value dimensions and extrapolate how firms navigate internal and external international environments using their BM.

The study unravels new insights on the manifestation of BM change and how firms can take advantage of the flexibility of BM change in conjunction with external and internal stimuli to be competitive and profitable as they internationalize. It contributes by establishing BMs as instruments of change and boundary objects in the internationalization activities of firms. The study also proposes that BM change could be adopted as an independent and base construct to observe and detect peculiar BM changes in firms. The study reveals that BM change and IE perspectives are vital in understanding entrepreneurial activities and determining their internationalization success and performance. The study contributes to *BM and IE* research by underscoring the importance of *context* as an avenue to seek useful information, provide meaning-and deepen empirical discussions —about how entrepreneurs' experiences in their internationalization journeys evolve. The dissertation offers valuable recommendations to managers on how to take advantage of BM change as they internationalize.

**Keywords:** Business model, Business model change, Business model innovation, Small and medium-size enterprises, Internationalization, International entrepreneurship



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judgment, prejudice, or entitlement, but rather with kindness, honesty, reassurance, and even tough love. You always find ways to bring me back to my center and encourage me to keep pushing myself to grow. Words cannot express my gratitude to you all! Special recognition also goes to Daisy, Shomy, Angela, Shola, Larry, Mariam, Gloria, Tuomo, Annukka, Josephine, Lekan, Ari, Sylvia, and Anne for good laughs, kindness, a shoulder to depend on, and extraordinary support.

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***Agnes Asemokha***

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*To Mum*



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## List of Publications

This dissertation is based on publications I–V below. The rights have been granted by publishers to include the papers in this dissertation.

- I. Asemokha, A., Musona, J., Torkkeli, L., and Saarenketo, S. (2019). Business Model Innovation and Entrepreneurial Orientation Relationships in SMEs: Implications for International Performance. *Journal of International Entrepreneurship*, 17, 425–453.
- II. Asemokha, A., Torkkeli, L., Faroque, A., and Saarenketo, S. (2020). Business Model Innovation in International Performance: The Mediating Effect of Network Capability. *International Journal of Export Marketing*, 3(4), 290–313.
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## Author's Contribution

- I. *The first author and second author were mainly responsible for writing the paper and for the empirical parts. The co-authors provided comments, especially for revising the paper for journal publication. The third and fourth authors collected the data*
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- III. *The first and second authors were responsible for writing the paper and for the analysis. The first author collected the data.*
- IV. *The first author and third author were responsible for developing the initial idea of the paper. The first author was responsible for writing most of the manuscript. All co-authors contributed to revising the paper for the conference.*
- V. *All authors contributed to the paper. The second author collected the data and conducted the initial analysis.*



## List of Abbreviations

### Abbreviations

BM	Business model
BMI	Business model innovation
CEO	Chief executive officer
DC	Dynamic capability
EO	Entrepreneurial orientation
EC	European Commission
IE	International entrepreneurship
IB	International business
INVs	International new ventures
IOR	International opportunity recognition
OECD	Organisation for Economic Co-operation and Development
SMEs	Small-and medium-sized enterprises



# 1 Introduction

*The business changes, the technology changes, the team changes, team members change the problem isn't change per se, because change is going to happen; the problem rather is the inability to cope with change when it comes — Kent Beck*

Change is inevitable in today's world. Advances in technologies, the digital era, market trends, and, most recently, the COVID-19 pandemic have radically altered the competitive global landscape. The global landscape is reinforced by digitalization and technological infrastructure that gives rise to contemporary and digitally savvy firms that mitigate the limitations imposed on them by traditional industries and brick-and-mortar companies (George and Bock, 2011; Onetti et al., 2012; Tallman et al., 2018, Bouwman et al., 2019). We are witnessing an era in which keeping pace with ever-changing dynamics requires radical innovation and adaptive thinking. For example, the interconnectivity of monetary markets, digital infrastructure, and burgeoning augmented reality, or the so-called metaverse, is drastically shifting customer behavior and causing dynamic shifts in human desires and demands. By the same token, companies leveraging these digital infrastructures latently predict customer needs before the customers themselves realize these needs, radically shifting how we understand commercial activities.

The global landscape has also inspired the emergence of new international entrepreneurial ventures (Oviatt and McDougall, 1994; Jones and Coviello, 2005). These ventures are founded and driven by individuals or groups who discover, and exploit opportunities in the creation of value for their firms internationally (Oviatt and McDougall, 2005). Much of the extant literature, which previously postulated that firms prefer to focus on their domestic markets before incrementally seeking new international markets (if conditions were right) (Johansson and Vahlne, 1977), is gradually becoming obsolete. At present, people and companies, regardless of their size or age, are constantly seeking international opportunities (as a new normal) to flourish (Mainela et al., 2014; Rialp et al., 2015). On top of this, what we know about entrepreneurship, opportunity, and venture management is rapidly changing (George and Bock, 2012) as (international) *opportunities* that were previously dismissed as implausible or impossible have become a reality and are almost indispensable in this modern era (George and Bock, 2012; KPMG, 2019). A profound and audacious shift has been witnessed in the recent past, leading to new approaches in entrepreneurship. This shift is typified by speed and spontaneity in proactive or reactive responses to international opportunities regardless of location (Zucchella et al., 2018; Hennart et al., 2021). The reason for this rapid change is that more than ever, international entrepreneurial processes and routines are cushioned by various factors, such as international experiences, business and social networks, technological, global market segments, and increasingly deregulated markets. Thus, a variety of institutional and international barriers can now be bridged, permitting firms to leverage global opportunities more powerfully than was once imaginable (George and Bock, 2012; Zucchella et al., 2018). Significant growth has also been noted in internationalization due

to shifting entrepreneurial orientations (EOs) and the creation of hybrid international ventures that can compete across national borders (Covin and Miller, 2014; Zucchella et al., 2018; Etemad, 2020). These international entrepreneurial ventures have redefined value chains and altered competitive dynamics at a global level by radically innovating their value offerings (Linder and Cantrell, 2000; Zahra et al., 2005) for foreign markets.

Against this continually changing backdrop sits the business model (BM) concept, which has increasingly gained recognition as a fundamental driver in creating, maintaining, and expanding competitive advantage across firms' value chains (Nielsen et al., 2018; Tallman et al., 2018; Hennart et al., 2021). A BM depicts how an organization functions to achieve its goals (Massa et al., 2017). The BM concept is linked to the competitive advantage, innovation, and growth of enterprises (Magretta, 2002; Johnson et al., 2008; Zott and Amit, 2008; Teece, 2010; Wirtz et al., 2016; Foss and Saebi, 2017). However, more important is the concept of change in BM research (Wirtz et al., 2016; Ritter and Lettl, 2018). BMs continually evolve as firms react to different market dynamics and as they reposition to avoid emerging risks and seize opportunities (KPMG, 2019). These accumulated changes (over time) lead to the complete transformation of the BM, which embodies how the firm wants to pivot, grow, compete, diversify, and/or scale its business in different industries or market contexts (Child et al., 2017). Despite this precedence of change and its prominence in the morphism of BMs, limited empirical research explains the role of BM change and how the transitions and modifications that occur in BMs influence how firms develop and grow and vice versa (Wirtz et al., 2016). Specifically, a few studies consider how changes in BM manifest in a firm's internationalization, especially in international business (IB) and IE contexts (Coviello and Tanev, 2017; Tallman et al., 2018). Little is known about how key elements or components of BMs interact, particularly when small- and medium-sized enterprises (SMEs) are involved.

Although SMEs receive some backlash concerning their positioning in IE literature, most scholars agree that SMEs can be examined under the IE umbrella (Dabic et al., 2020). This is because the internationalization of small firms embodies entrepreneurial behavior and firm-level activities associated with identifying and exploiting opportunities that cross national borders to create and exchange value (Sainio et al., 2011; Rissanen and Sainio, 2016). However, because internationalization is a complex task for small firms, they need to find novel ways to engage in new markets. They also need to seek avenues to sell their unique products and services across national borders to remain profitable and improve performance (Child et al., 2017; Hock-Doepgen et al., 2021). SMEs must prioritize the development of robust international models that support value creation and profit generation (Child et al., 2017; Rissanen et al., 2020; Hock-Doepgen et al., 2021). This can be achieved by proactively or reactively deploying changes to the business ideas, objectives, or operations of the firm to meet the requirements of different actors in the international market environment (Saebi et al., 2016; Child et al., 2017). It is logical to examine the decisions (means and actions) that facilitate the internationalization journey of entrepreneurial firms and the implications for their BMs and vice versa (Sarasvathy, 2001; Onetti et al., 2012; Massa et al., 2017).

Furthermore, entrepreneurial sensitivity to the engagements and requirements within an existing or new ecosystem is important because it allows firms to identify new target customers, determine how to approach them, and select or create specific value propositions to satisfy their demands (Onetti et al., 2012; Child et al., 2017). The BM design of small firms can be a way to unravel the operations and interactions within their ecosystem (Weiller and Neely, 2013). Therefore, examining international business activities and concurrent engagement with different actors or stakeholders provides a useful context for explaining how firms engage with the dynamics of change in their core processes (Linder and Cantrell, 2010; Cavalcante et al., 2011). Accordingly, BMs can be championed as a research concept that helps explain the internationalization of entrepreneurial activities of firms (Coviello and Tanev, 2017). Scholars predict that IE research would benefit from a richer blend and integration of IE, IB, and BM research and frameworks to understand the conceptualization of business activities, especially in an international context (Saino et al., 2011; Child et al., 2017; Coviello and Tanev, 2017; Hennart et al., 2021). Blending these research perspectives is important because it illuminates how the decisions or actions taken by entrepreneurs, different actors, or teams at the firm level can reveal the reasons that drive BM change (Magretta, 2002; Nummela, 2004; Zott and Amit, 2007; Coviello and Tanev, 2017). Thus, there is a need for multilevel research on the role of individuals as decision-makers and sense-makers concerning their internal and external environments and the drivers of change that influence their enterprises (Nummela, 2004; Coviello and Tanev, 2017; Zucchella et al., 2018). Integrating BM and IE research can provide richer explanations of how entrepreneurs manage and adapt firm-level activities and the implications for their BMs.

## 1.1 Background and research gaps

The study of *change*, in general, is broad and can take place in various contexts. However, specifically for internationalizing entrepreneurial firms, change can be explored on the following levels: the organizational level (among different actors, employees, based on stakeholder activities), the individual level (founder, entrepreneur) (Nummela, 2004; Zucchella and Magnani, 2016, Child et al., 2017), the environmental and industrial level, or affecting the economy at large (Wiklund and Davidsson, 2001; Child et al., 2017). While it has been established that the transformational effects of change are enormous in business in practice and profoundly impact on entrepreneurial processes (Wiklund and Davidsson, 2001; Nummela, 2004), knowledge is limited, and ongoing controversies remain regarding the repercussions and beneficiaries of change particularly in small internationalizing firms. Despite the recent and vast contributions of SMEs to the contemporary global village, compared to their larger counterparts (multinational firms), they are the most vulnerable in business terms. The constant pressure imposed by the global and/or international competitive landscape places SMEs and their *BMs* at the precipice of *change*, which is essential if they want to thrive and effectively navigate different national frontiers (Pla-Barber et al., 2020; Zahra, 2021).

The internationalization activities of companies are centered around their value chain activities, resources, and competencies, which are said to be in permanent disequilibrium

or uncertainty (Demil and Lecocq, 2010). Disequilibrium and uncertainty are prominent contingencies in the internationalization process of firms due to imbalances in market economics (e.g., price, demand, quality, supply) and other unforeseen factors, could be due to frequent changes in technology, industry standards, or regulations (Tallman et al., 2014; KPMG, 2019). These imbalances put entrepreneurs and their firms in a vulnerable position, requiring them to rethink their business processes or seek the capabilities necessary to help them thrive and sustain performance (Demil and Lecocq, 2010; Gassmann et al., 2016). Different firms may also have different strategies or techniques to help them manage or mitigate risks in different scenarios. Studies have demonstrated that BMs are a powerful tool to achieve fit and make systematic changes in the face of contingent uncertainties (Shafer et al., 2005; Osiyevskyy and Dewald, 2018) or any issues that arise during the internationalization journey. Although there have been concerted research efforts to discuss change in the internationalization process of SMEs (Nummela, 2004), few studies have explored the influence of BM change in the international activities of SMEs (Child et al., 2017; Rissanen et al., 2020). The BMs used by SMEs in the domestic market may not necessarily be applicable to or suitable for the international market (Child et al., 2017). Therefore, the capability of SMEs to make effective internationalization decisions and plan interventions that support changes in their BM that satisfy international requirements is a prerequisite for internationalization success and fosters firm survival in foreign market contexts (Afuah and Tucci, 2003; Sapienza et al., 2005; Sainio et al., 2011; Onetti et al., 2012; Child et al., 2017; Rissanen et al., 2020).

Moreover, little is known about the role of BM changes in firms' internationalization how they occur as firms (particularly SMEs) internationalize (Child et al., 2017; Sainio et al., 2010; Rissanen et al., 2020). This research lacuna is startling considering that firms (especially in the contemporary era) can and have been adopting their BM as an alternative tool or approach to compete, grow, innovate, survive, and adapt to everchanging international business environments (Linder and Cantrell, 2000; Pohle and Chapman 2006; Amit and Zott, 2012; Child et al., 2017). Furthermore, investigating change in BMs during the internationalization of SMEs is auspicious due to the multidimensional and complex process of "change" in this process (Nummela, 2004; Torkkeli et al., 2012; Coviello and Tanev, 2017; Rissanen et al., 2020). Therefore, changing the BM ensures that firms can succeed in dynamic and competitive global markets (Voelpel and Leibold, 2004; Teece, 2010). Overall, there is still room to advance research on BM (change) as well as on the interdependencies of a company's actions, orientation, and decisions that influence such change (Afuah and Tucci, 2003; Zott and Amit, 2010; Hennart, 2014; Osterwalder et al., 2015).

### **Research gap 1: Conceptualizing business models (BMs) and BM change**

Scholars have made significant progress in providing some level of abstraction to BMs (Zott et al., 2011; Foss and Saebi, 2017; Massa et al., 2017; Wirtz and Daiser, 2017) and in understanding how they enhance value creation (Teece, 2010). However, despite these research efforts, the BM approach continues to face criticism over its theoretical autonomy as an independent concept and lack of proper theoretical foundations (Zott et

al., 2011; Arend, 2013; Massa et al., 2017). The term “business model” has also been used loosely in both formal and informal descriptions to broadly portray a company’s activities (Voelpel et al., 2004). The biggest challenge in BM research has been the capacity to move away from its non-futile or excessive focus on abstraction or persistent lack of theoretical consensus to find a middle ground concerning the concept’s applicability in both academic research and practice (Shafer et al., 2005; Balboni and Bortoluzzi, 2015). BMs have also been abstracted as a valuable tool for observing a company’s evolution and transformation from an idea to its establishment, growth, and maturity phases, and even termination (Linder and Cantrell, 2000; Pohle and Chapman, 2006; Ahokangas and Myllykoski, 2014).

The burgeoning role of BMs in explaining value logic encompasses production, sales, delivery of value, coordination, and control of transactions to make profits as firms operate in their domestic market or across national borders (Osterwalder and Pigneur, 2010; Hennart et al., 2021; Shepherd et al., 2021). BMs are typically incrementally or radically changed in response to internal or external inputs and stimuli (Torkkeli et al., 2012; Saebi et al., 2016). They can also be transformed voluntarily, in response to outside forces, or reactively due to competitive activities or across different industrial settings (Winter and Szulanski, 2001; Aspara et al., 2013; Saebi et al., 2016). Tracing and observing a BM can potentially reveal issues related to changes occurring in the firm over time or over its entire lifecycle (Osterwalder et al., 2005). However, tracing the transition from an existing to an emerging BM is complex, and challenging to understand due to a lack of clarity about the specific BM components that influence change across different international contexts (Amit and Zott, 2001). More research is needed to explain the inner workings and interdependent activities of BMs (Chesbrough, 2007; Zott and Amit, 2010; Massa and Tucci, 2013), especially in the international context.

Some progress, nonetheless, has been made in shifting from conceptualizing and constantly seeking to characterize and explain the concept of BMs, toward more dynamic discussions (Wirtz et al., 2016). While some of the discussions in the field have produced significant strides in the BM literature, challenges remain in the field due to the increasing use of neologisms or novel concepts created by authors aiming to discuss various types of change. Some studies have described this trend as *language games*, implying that the proliferation of novel terms and concepts is inherently grounded in authors’ interpretations (Klang et al., 2014). This ongoing accumulation of terms and concepts has exacerbated the vagueness and ambiguity of the BM concept, leading to widespread heterogeneity in the literature (Klang et al., 2014; Massa et al., 2017). Consequently, the lack of construct clarity in BM research has prevented cumulative knowledge growth in the field. As authors do not necessarily build on each other’s research efforts, development in the field has been stunted and disconnected, resulting in conceptual incoherence (Nielsen et al., 2018a). It is beneficial for BM researchers to build on others’ work (discussions and definitions) so that BM concept can reach cumulative and conceptual clarity so that (BM) literature can develop from its current nascent stages into maturity (Edmondson and McManus 2007).

Changes occurring in BMs provide a way to make sense of a company's key activities and how they are combined with managerial cognitions or actions to understand the evolution of BMs (Aspara et al., 2011). Design, evolution, and continuous change to BMs are crucial to a firm's long-term success (Teece, 2010; Wirtz et al., 2016). Exploring change in a BM can potentially explain how firms grow, identify new opportunities, and develop competencies that support their business processes, such as collaborating with stakeholders and forging other alliances (Afuah and Tucci, 2003; Nummela et al., 2004; Abrahamsson et al., 2019). Scholars have also suggested that incorporating different streams of literature would advance BM research and provide deeper explanations of the evolution and performance of firms' operations (Amit and Zott, 2001; Foss and Saebi, 2017). Overall, the BM, as an independent concept, has the potential to bridge research silos (Zott et al., 2010), and offer an alternative avenue for exploring the core activities that explain the value systems of internationalizing enterprises (Linder and Cantrell, 2000; Sainio et al., 2011; Child et al., 2017; Bouwman et al., 2018). By extension, BM change may serve as an independent construct for recalibrating an existing BM, facilitating a general understanding of a firm's activities, and coping with change in different (international) market contexts.

### **Research gap 2: Relevance of IE perspectives towards understanding BM change in the internationalization of entrepreneurial firms**

To move internationalization research forward, researchers should draw on previous findings from rigorously established bodies of work and associated concepts (such as internationalization, international Business [IB], entrepreneurship) to understand and predict the development of internationalizing firms (Coviello and Jones, 2004; Child et al., 2017; Dabic et al., 2020). Empirical contributions can be made by exploring how small new ventures internationalize (Keupp and Gassmann, 2009), adapt their business activities (e.g., operations, strategies, routines, structures, resources, and capabilities), and conform to international markets (Calof and Beamish, 1995; Kuivalainen et al., 2012). The internationalization activities of SMEs are a particularly useful context for understanding the character of small companies and their approach to creating, delivering, and capturing value. Like larger firms, internationalizing SMEs are confronted with various factors that foster or hamper their business processes (Hennart et al 2020). However, unlike multinational firms how smaller enterprises navigate their BMs to scale abroad remains under-researched (Hennart et al., 2020). SMEs are confronted with various factors that foster or hamper their business processes, such as resources and finances, marketing competence, cultural and geographical location barriers, high production and logistics costs, and small size (Kuivalainen et al., 2015). Despite such challenges, these enterprises can leverage their strengths (e.g., education, invention, flexible organizational culture, international orientation, and superior technology in emerging industries) to create new value propositions (innovative products or services) for stakeholders.

The above-mentioned strengths of internationalizing SMEs do not make them exempt from the internationalization dynamics that affect key activities, such as innovation speed,

product development, customer behavior, competition, regulation, stakeholder activities, and other environmental factors (Goktan and Miles, 2011; Mulders and van den Broek, 2012). These factors are embedded in BMs, and the BM is a vital tool in the entrepreneurial process of small ventures because it can frame, define, and organize their actions and strategies (Osterwalder et al., 2005; Richardson, 2008; Trimi and Berbegal-Mirabent, 2012; Clauss, 2017). Additionally, internationalization is a growth process linked with predictable and/or contingent relationships between the individual- firm-, and environmental-level activities (Kuivalainen et al., 2012; Zucchella et al., 2018). BMs create (new) and reveal (existing) connections in a firm's international activities by connecting meaning to action across multiple levels of analysis (Mason and Spring, 2011). Thus, BMs should be considered in the context of their *propensity to change* due to their significance in explaining different dynamics (internal and external) related to business actors, market environments, and the resulting implications of these activities on international venture growth and development.

The individual's or entrepreneur's role and cognitive characteristics are an essential variable in IE that guides the ways in which firms make connections in their decision-making, opportunity recognition, and evaluation processes (Miesenbock, 1988; Mainela et al., 2014; Milanov and Maissenhalter, 2015). Entrepreneurs rely on their mental schemas and take tremendous risks when pursuing international opportunities (Zahra, 2005; Milanov and Maissenhalter, 2015; Massa et al., 2017). Researchers have called for studies that will bridge and explain how entrepreneurs' mental framing and (international) experiences shape their organization's BM and make it competitive as they internationalize (Milanov and Maissenhalter, 2015; Coviello and Tanev, 2017). Moreover, exploring entrepreneurial activities contextually (Michailova, 2011; Zahra et al., 2014; Child et al., 2017; Foss and Saebi, 2017; Baker and Welter, 2018) may also reveal how managers make sense of the relationships, events, and situations in which they are a part (Rasmussen et al., 2001), and how the international context plays a role in the creation and exploitation of international opportunities (Mainela and Puhakka, 2009; Mainela et al., 2014). Some studies have also pointed out the paradox of IE still not having an integrative framework makes it difficult to research it (Sarasvathy and Venkataraman, 2011; Zahra et al., 2014). Contextualization allows for the integration of existing theories or frameworks to move internationalization research. Thus, generating insights from individual cognitive perspectives and balancing them with firm-level research provides fertile ground for multilevel research (Coviello and Jones, 2004).

Exploring and exploiting opportunities are critical attributes of entrepreneurial activities that underlie an organization's core function (Eckhardt, 2013; Reuber et al., 2018). In this study, entrepreneurial activities are defined as enterprising actions intended to create value in response to opportunities. According to Drucker (1985), innovative opportunities originate from unexpected successes or failures, external events, incongruities between reality and perceptions, changes in industry or market structures, demographic shifts, moods or meanings, and the dissemination of new knowledge. Firms often face situations in which their original BM has evolved and lost its relevance or relative advantage due to international market pressure, host market requirements, or other factors (Aspara et al.,

2011; Onetti et al., 2011). Consequently, entrepreneurs invest extensive time, resources, and capabilities in trying to identify new international opportunities to generate a suitable BM (Shepherd et al., 2021). For some internationalizing firms, the modifications made to BMs are primarily targeted at developing and managing their activities and strategies over time. In other cases, BM changes are undertaken in response to market opportunities and threats, to increase profitability, and/or to improve competitive advantage (Linder and Cantrell, 2000; Saebi et al., 2016; Bucherer et al., 2012; Casadesus-Masanell and Zhu, 2013).

In addition, as forerunners of their ventures, international entrepreneurs make decisions that ensure their activities are grounded and capable of competing on an international Front. To this end, entrepreneurs' decisions when investigating firms' actions and BM development are underrepresented in research (Gabrielsson and Gabrielsson, 2013; Child et al., 2017; Etemad et al., 2021). The literature on decision-making logic provides insights into how entrepreneurs develop and exploit international opportunities (Sarasvathy, 2001; Perry et al., 2012). Effectuation and causation are two contrasting yet fundamental decision-making approaches that entrepreneurs adopt in business development (Sarasvathy, 2001). Causal logic is based on the premise that entrepreneurs discover or create opportunities by skillfully predicting the future with the intention of controlling it. In contrast, effectual logic argues that entrepreneurs shape the future (and its opportunities) by controlling rather than predicting it (Sarasvathy, 2001). The fundamental decisions that drive entrepreneurial action in the internationalization of firms also drive the path-dependent behavior of SMEs (Dasi et al., 2015). The existing research on uncertainty, enactment, and goal ambiguity (Knight, 1921; March, 1976) suggests that the unpredictability of unspecified future goals and firm decisions impact the environment and influence entrepreneurial choices related to growth and survival (Gabrielsson and Gabrielsson, 2013).

In light of this knowledge gap, scholars call for more research to examine how different orientations (Acosta et al. 2016) affect international entrepreneurs, their values and goals, and how they enact opportunity in their proposition, delivery, and capture of value (Tece, 2010; George and Bock, 2011; Trimi and Berbegal-Mirabent, 2012). In addition, proactive, innovative, and risk-seeking behavior of entrepreneurial firms across national borders is said to drive the actions that create deliver and (e.g., of future goods and services for customers) and capture value (Simon et al., 2011; Zucchella and Magnani, 2016). There is a need for more studies on how the orientations of individuals relate to the way firms change their BMs (George and Bock, 2011; Peiris et al., 2012; Reuber et al., 2018; Etemad et al., 2021).

To navigate the challenges and uncertainty in the internationalization activities, it becomes imminent for firms to integrate between the actors and units responsible for these critical international cross-boundary relationships and manage the value processes within networks (Achtenhagen et al., 2013; Reypens et al., 2016). Network support is vital for managing internal and external environmental turbulence, capitalizing on opportunities, mitigating risks, and maintaining competitive advantage (Doz and Kosonen, 2010;

Balboni and Bortoluzzi, 2015; Abrahamsson, 2016). Even though studies highlight that internationalization success or even failure may be due to the mutual benefit and/or complementary role of strategic alliances or to the competence in networking (Oviatt and McDougal, 1994; Nummela, 2004; Torkkeli et al., 2012), there remains a lack of scholarly inquiry into the explicit connections between suppliers, customers, and competitors in cross-border activities (Reyppens et al., 2006). Entrepreneurs' networking capabilities are expected to support SME development and growth at various phases of the business (Mort and Weerawardena, 2006; Torkkeli et al., 2012). Creating and leveraging existing networks supports SMEs' value creation, delivery, and capture in new international markets. This study seeks to examine the capabilities related to SMEs and their business networks, the relevance of developing and managing business network relationships—that is, the extent of SME networking capability (Ritter, 1999; Ritter et al., 2002)—and relationships within networks help determine the extent of change in their BMs. The role of networks as a dynamic capability (DC) that supports SMEs in changing, shaping, adapting, and renewing BMs to create value and improve performance is unprecedented (Teece, 2007; Achtenhagen et al., 2013). Sainio et al. (2011) point that value in firms will be increasingly created through active intra- and inter-organizational collaboration with network alliances (partners and suppliers) both upstream and downstream in the value chain. Thus, there is a need for more research exploring integration between the units or actors responsible for these critical cross-border relationships and managing the value processes within networks (Achtenhagen et al., 2013; Reyppens et al., 2016).

### **Research gap 3: The synergy between BM and IE can potentially inform our understanding of international entrepreneurial firms**

BM concept, and BM-related research, is not necessarily a “theory on its own” (Ritter and Lettl, 2018, p. 1) instead it could be abstracted as a theoretical mechanism that facilitates the combination of different literature streams. This means that BMs in different contexts can provide an in-depth understanding that can complement analytical findings regarding how an organization creates and appropriates value at the individual, firm, or environmental level (Zott et al., 2011). Scholars have highlighted the need for more studies to facilitate theorizing and provide empirical evidence that supports associated arguments on the BMs of internationalizing SMEs (Child et al., 2017; Bouwman et al., 2019). Understanding how BM changes occur in the evolution of internationalizing firms, especially from the IE perspective (Mitchell et al., 2002; Morris et al., 2005; Sainio et al., 2011; Onetti et al., 2012; Hennart, 2014; Clauss, 2017), is a relatively new and sometimes controversial topic. There is little evidence in the literature explaining how the connection between the BM and IE literature streams can explain BM changes that occur in internationalizing entrepreneurial firms (Sainio et al., 2011; Onetti et al., 2012; Clauss, 2017). Researchers call for more explicit contextual explanations and discussions of the determinants, antecedents, and clarifications of BM change (e.g., Zahra et al., 2014; Saebi et al., 2016; Foss and Saebi, 2017; Massa et al., 2017; Nielsen et al., 2018a, 2018b), especially in the IE context as such explanations bridge currently the

paucity in literature and expands what we know about entrepreneurial behavior, tendencies or inclinations in cross border activities (Child et al., 2017; Zahra et al., 2014).

Dissecting (on)going changes in a firm (from the IE context) is promising towards profound discernment of entrepreneurial ventures beyond their generic characteristics and archetypes. Recent studies demonstrate that we could know more about a firm through their BM and explore associated BM changes. Examples of such studies includes the study of high-tech ventures (Onetti et al., 2012), international new ventures (INVs) (Abrahamsson, 2016), SME international models, industry contexts (Child et al., 2017), and incumbent and start-up SMEs (Rissanen and Sainio, 2016). This scarcity of studies integrating both streams, possibly stems from the reason that researchers still underscore the need for more multilevel research that integrates BM concepts with other theoretical perspectives or other levels of analysis (Coviello and Tanev, 2017; Foss and Saebi, 2017). Linking BMs with these different theoretical perspectives may provide substantial arguments to improve the generalizability of the unique attributes of entrepreneurial firms (Zott and Amit, 2013; Gassmann et al., 2016; Foss and Saebi, 2017), and explain BM change (Van den Oever and Martin, 2015). Scholars argue that alternations and/or iteration between theory and evidence is the best way to understand a phenomenon (Oviatt and McDougall, 2005). Hence Oviatt and McDougall (2005) suggest that “more cross-fertilization is needed if international entrepreneurship is to develop fully” (p. 6). Given that contextual boundaries constrain IE activities, the present study provides an extensive understanding of the entrepreneurial activities at play by linking BM discussions in an international context—or contextual framing. The study aims to explicate how the phenomenon BM (change) and value dimension processes interact as SMEs engage and seek to grow in uncertain international markets (Zahra et al., 2014; Welter and Baker, 2020).

Studying BM change can provide nuanced insights into the change initiatives and knowledge-based activities that drive growth, especially in the transition from domestic to international markets (Saarenketo et al., 2008; Van den Oever and Martin, 2015; Cavalcante et al., 2011). In light of this argument, including the firm’s BM as an additional unit of analysis allows both IE and IB scholars to gain more insights into entrepreneurial decision-making, behaviors as well as how entrepreneurs’ mental framing of contextual activities, translates into the commercial and operational activities of international firms (Massa et al., 2017; Hennart et al., 2017). Recent literature indicates that BM research is progressing toward a more holistic understanding of IB and IE activities (Hennart et al., 2021; Shepherd et al., 2021) and can enrich comprehension about how firms optimize their operations, collaborate with stakeholders, and make resource allocation decisions for different value chain activities (Onetti et al., 2012; Hennart et al., 2021; Shepherd et al., 2021). In other words, entrepreneurial decisions routed through action can be manifested in the core business routines of a firm and can potentially explain BM change (Cavalcante, 2014; Linder and Cantrell, 2000).

Hence, the relative complementarity between BMs and IE may permit researchers to find deeper meaning in IE behaviors and actions that provide evidence for growth and

performance (George and Bock, 2012; Zott and Amit, 2013; Ritter and Lettl, 2018). A decade ago, Sainio et al. (2011) reported that the discussion around the BM construct was pivotal in moving the notion of value formation to the center stage. Their study found that BM as a construct offers an alternative perspective on running an internationalizing venture, by concentrating on the critical international activities of value creation and capture instead of managing futile and functions. Thus, BMs serve as a valuable tool for observing a company's evolution from an idea to its establishment, growth, maturity phases, and even its termination (Linder and Cantrell, 2000; Pohle and Chapman, 2006). By virtue of this kind of research, more insights into the interrelationships between IE activities and their implications for BM change can be obtained. To conclude, further exploration of BMs is needed since they serve as a unit of analysis for examinations of SME activities (Osterwalder et al., 2005; Zott et al., 2011), thereby helping explain a firm's entrepreneurial activities at any stage of its existence (Linder and Cantrell, 2000; Cavalcante et al., 2011; Cavalcante, 2014).

## 1.2 Research aims and positioning of the study

This dissertation aims to explore the role of BM change in internationalizing companies (SMEs), particularly how their internationalization actions, decision-making, and other drivers influence changes in their BMs and the implications for their performance. Of special interest in this study is how the lived experiences of the entrepreneurs affect the changes made to (existing or initial) BMs of entrepreneurial firms as they internationalize as well as the performance implications of BM change for international success. To respond to the unresolved research gaps identified above, the dissertation is guided by different theoretical lenses from IE. These lenses provide structure and a framework for mapping and describing observed BM changes within the IE context. They also establish the boundaries for the research questions and generalizations concerning the phenomenon of interest, BM change. Furthermore, by connecting BM and IE, the dissertation aims to capture the linkage between BM (change) and IE literature.

The study uses BM thinking to understand the changes that occur in the core processes and actions of firms, which can potentially reveal the nexus between the individual- and firm-level contexts, thereby bridging the knowledge gap between studies from IE and BM research perspectives. The core focus of the study is *BM change*, with a keen interest in making sense of the conceptual and contextual cacophony surrounding the term. In the following discussions (in this dissertation), the term "change" when applied to BMs refers to any form of alteration or modification made to the initial or existing BM, so changing the BM (e.g., innovation, adaptation, or even experimentation), especially when the alteration is related to the core elements of the BM. This study also highlights the efficacy of BM change as an important independent construct that can consolidate discussions in the literature and minimize heterogeneity in BM discourse.

Using a mixed-method approach fostered a deeper understanding of the research inquiry in the study. Attention was focused on the *changes that occur in BMs as firms internationalize into the international market and to what extent their actions and*

*behavior (orientation, decisions, and capabilities) influence their performance.* As its research context, the study concentrated on (internationalizing) Finnish SMEs. Finland has a small, open economy that is globally known for its entrepreneurial and innovative prowess. SMEs constitute over 99 percent of the total enterprise population, and most Finnish SMEs prioritize internationalization as their primary growth strategy, with approximately 20 percent of all SMEs already operating internationally (Kuivalainen et al., 2015). Thus, the empirical context also provides a stable backdrop and suitable research setting for exploring international entrepreneurial ventures.

The study aims to make contextual and empirical contributions to the BM literature by illuminating the role of BM change in international enterprises as well as how individual actions and the firm-level activities and tactics of internationalizing SMEs influence BMs and BM change (e.g., business model innovation [BMI]) and affect firms' performance. The study also contributes to the nexus of BMs and IE by proposing that BM (change) can expose and elaborate underlying core activities and decisions of ventures, deconstruct these activities and decisions, and provide explanations and implications for the individual, firm, and environmental levels of international entrepreneurial firms. In doing so, it provides deeper, more holistic insights that can move IE research forward. Moreover, combining international entrepreneurial actions and BM activities can reveal how firms navigate their value chain activities (Sainio et al., 2011). By implication, the study seeks to motivate IE scholarship to undertake more empirical studies to corroborate the assumption that (innovatively) changing BMs provides complementary benefits for firms. As a result, the study works to advance the argument that integrating BM change into IE investigations can strengthen the intensity and rigor of IE research findings.

In an attempt to describe, theorize, and validate the link between BM change and the internationalization of firms, the present study uses internationalizing SMEs and their entrepreneurs as the unit and context of analysis, without ignoring conceptual overlaps between SME internationalization and the IE literature. Studies have shown that smaller international entrepreneurial ventures are included in the IE research stream and exhibit internationalization behavior (such as born-again globals, global SMEs, and micro multinationals). For example, the international entrepreneurial behavior of small firms may exhibit characteristics like international opportunities' exploration and exploitation (e.g., Mainela et al., 2014), international EO (Covin and Miller, 2013), and richer contexts (e.g., the role of resources, capabilities, decision-making, and network opportunities), irrespective of the size, age, or industry of the firm (Dimitratos and Jones, 2005). These developments increasingly accommodate rather than alienate smaller internationalizing firms that seek to be part of the international entrepreneurial discourse (Ratten et al., 2007; Dabic et al., 2020). Thus, it is important to establish that the *internationalizing SMEs* assessed in this study are not used as a proxy for core IE archetypes (e.g., INVs and born globals). The study employs *internationalizing SMEs* because they can also exist within the boundaries of IE (Dabic et al., 2020). Data for the qualitative inquiry were collected from international entrepreneurs at various stages (e.g., founders and accounts of their internationalization efforts from the early stages of venture creation). The quantitative study also comprised of managers of internationalizing firms who provided information

about their BMs and internationalization motivations, processes, growth, and performance. IE, as employed in this study, helped in creating boundaries for the discussion of BM change by providing theoretical concepts which guides the research questions, also setting boundaries for the generalization, and generating information on behaviors and actions of entrepreneurial ventures at the individual and firm levels in their interaction across borders.

BMs are closely linked to entrepreneurship concepts (George and Bock, 2011, 2012; Trimi and Berbegal-Mirabent, 2012). However, the limited amount of empirical research connecting these two conceptions is surprising despite their proximity. Finding the nexus between BM change and IE requires an understanding of how both discussions intertwine. The challenge in combining BM (change) and IE stems from the heterogeneity of both concepts, from understanding why BM (change) matters in the internationalization of entrepreneurial firms, and from knowing how to capture BM change in theory and practice (Baden-Fuller and Haefliger, 2013; Klang et al., 2014). To elaborate on and give structure to the interconnection between BM and IE, the framing *triple-O* of international entrepreneurship by Zucchella and Magnani (2016) satisfactorily explains why and how IE theoretical perspectives can be explored. Zucchella and Magnani's framing describes international business entrepreneurship based on three important areas: *orientation, opportunities, and organization*. Orientation concerns the proactiveness, risk-taking, and innovativeness of entrepreneurial firms in international markets. Opportunities are the core of IE discourse and relate to the exploitation and exploration of international opportunities across national borders. Organization is the object of entrepreneurial action and consists of a system of interconnected actors and stakeholders with a common goal. The organization orchestrates resources and capabilities, and the exploitation and exploration of opportunities to create value. This dissertation relies on these three key interconnected perspectives to provide insights and contribute to bridging the knowledge gap between IE and BMs.

The theoretical positioning of the present study (Figure 1.1), therefore, lies within the intersectional confines of the BM and IE literature. It also draws on some elements from strategic management literature. The IE literature is situated at the intersection of *international business* and *entrepreneurship* and borrows from strategic management concepts and theories (Zucchella et al., 2018). Scholars suggest that IE and strategic management provide concepts and models that facilitate the understanding of organizational capabilities, innovation, and growth in international markets (Zucchella and Magnani, 2016). BM, however, is an autonomous concept, nor is BM research limited to a single discipline (Ritter and Lettl, 2018). Due to its heterogeneity, BMs draw on theoretical constructs such as business strategy, value chain concepts, strategic planning, resource-based theory, organizational research, strategic network theory, and transaction cost economics (Zott et al., 2011; Peiris et al., 2012; Gassmann et al., 2016). Furthermore, the heterogeneity of BMs makes them fruitful for viewing organizational behavior through different lenses (George and Bock, 2011; Gassmann et al., 2016). The BM phenomenon, however, is topical and can integrate and complement diverse theoretical perspectives in management and IE studies (George and Bock, 2012; Onetti et al., 2012;

Schneider and Spieth, 2013; Gassmann et al., 2016; Zucchella et al., 2018). In this study, BM is explored from the premise of the dominant research interest, which is IE literature, and partly from strategic management literature (Teece, 2010; George and Bock, 2011; Onetti et al., 2012; Foss and Saebi, 2015; Child et al., 2017).

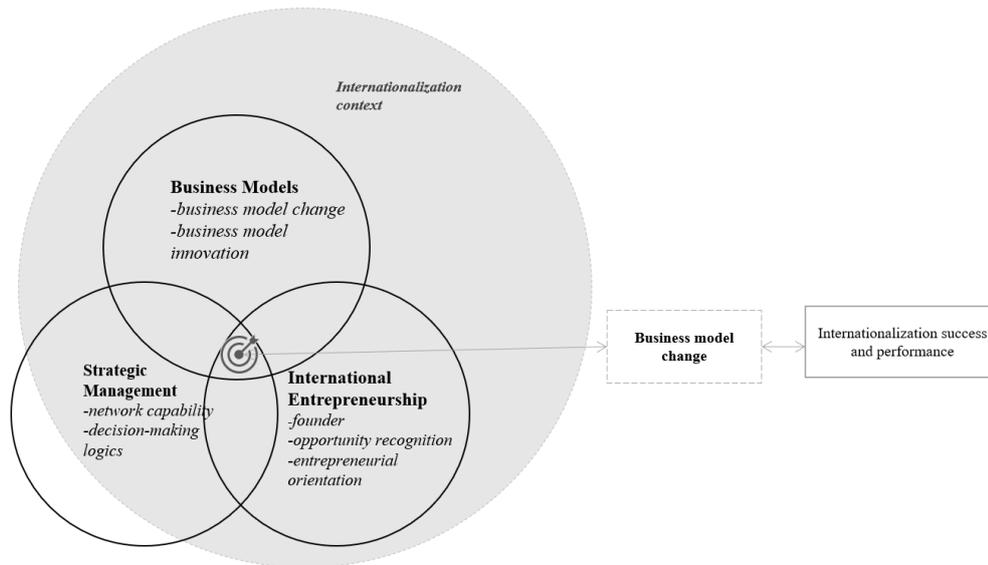


Figure 1.1: The positioning of the study.

As illustrated in Figure 1.1, this dissertation focuses on the knowledge gap that exists at the intersection of the BM and IE literature. The study on which the dissertation was based focused on the behaviors and/or actions of internationalizing SMEs as they navigate individual-, firm-, and environmental-level contexts to better understand the changes that occur in BMs. Accordingly, drawing from the triple-O framework, the BM phenomenon is used to explain and contextualize the dynamics of change in the *organization*, the internal and external actions, and interactions and how changes in BMs influence the change processes and transformation of the focal organization. The dissertation draws on conceptual underpinnings of IE, exploring the individual and organizational level behaviors and/or actions of internationalizing SMEs as they navigate international market contexts and the implications of BM changes for performance. Following central IE perspectives (Zucchella and Magnani, 2016), the study examines the *orientation* (EO) of internationalizing SMEs (Lumpkin and Dess, 1996; Jantunen et al., 2005; Wiklund and Shepherd, 2005), individuals embedded in their contexts (Zahra et al., 2014), and how their decision-making (Sarvasathy, 2001) and actions shape the way they *approach and recognize opportunities* in international markets (Shane and Venkataraman, 2000; Mainela et al., 2014). The study also partly borrows from strategic management concepts by examining the role of networks in facilitating a dynamic capability that supports

internationalization, strategic growth, and performance (Mort and Weerawardena, 2006; Teece, 2007; Torkkeli et al., 2012).

Specifically, the study sets out to understand the role of BM change in international entrepreneurial firms. The study also considers internationalizing SMEs as part of the research and contextual setting. However, recognizing the literature overlaps about typologies, terminologies, or archetypes of international entrepreneurial ventures (Rialp et al., 2015). Internationalizing SMEs are explored under the IE umbrella because they share key characteristics found in many other venture types (Dabic et al., 2020). Integrative concepts (Peris et al., 2012) from (international) entrepreneurship, such as *founder*, *EO*, *opportunity recognition*, *decision-making logic*, and *strategic networking capability*, are used as theoretical lenses in the dissertation, and the publications appended to it. These concepts are used to investigate topics that support the enlightenment of the entrepreneurial actions taken by SMEs as they enter the international market. IE offers integrative concept(s) useful for explaining and generating nuanced insights about organizations' internal or external activities and entrepreneurial behaviors, as well as their orientation and opportunities (Wilkund and Davidsson, 2001; Zucchella and Magnani, 2016), which in turn inform the actions driving BM change (Zott and Amit, 2009; Eckhardt, 2013).

This study aims to establish that BMs have a place in explaining (international) entrepreneurial behavior and can illuminate the antecedents, processes, and even outcomes of internationalizing firms (Sainio et al., 2011; Onetti et al., 2012; Child et al., 2017; Foss and Saebi, 2017). Determining the link between BMs, internationalization, and IE can potentially contribute to further research in BMs, SME internationalization, and the IE and management literature (Onetti et al., 2012; Child et al., 2017; Foss and Saebi, 2017; Rissanen et al., 2020). Thus, by using different integrative concepts from IE, this dissertation seeks to lend credence and provide legitimate arguments on the influence of BM change in the internationalization activities of firms, contributing to academic research and practice and opening fresh research areas for discussion and inquiry. Thus, the *main research question* of this dissertation is as follows:

***What is the role of BM change in international entrepreneurial firms?***

Figure 1.2 presents the main research question, the research sub-questions (RSQ), and the related publications produced to address them. The main research question concerns the central topic of this study, while the four RSQs relate to specific dimensions of the central topic, providing narrower blocks of synergistic perspectives for responding to the main question.

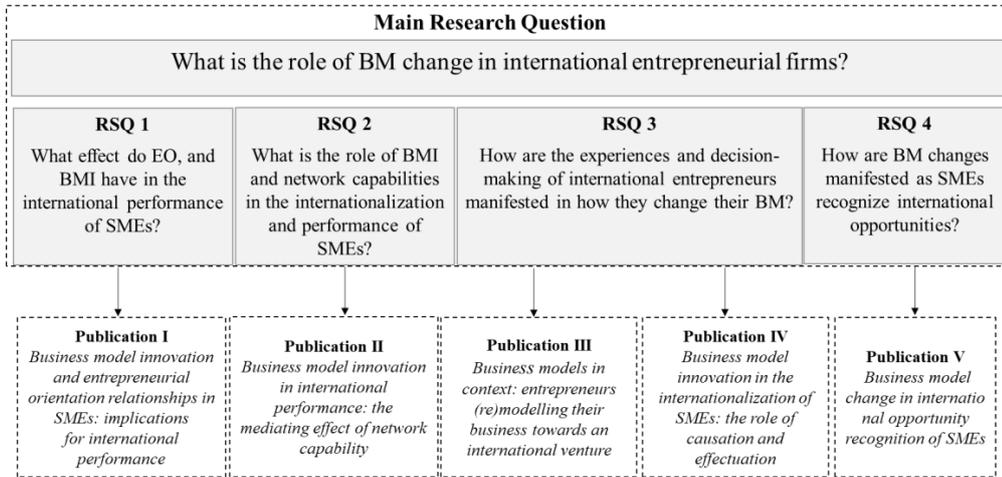


Figure 1.2: Research questions and corresponding publications.

The rationale for RSQ 1 is to explore how EO affects the way entrepreneurs design their BMs as they internationalize. To this end, the study examines how EO demonstrates the innovativeness, proactivity, and risk-seeking behaviors of internationalizing SMEs. EO is a crucial element in IE (Covin and Slevin, 1991; Lumpkin and Dess, 1996; Wiklund and Shepherd, 2005). Accordingly, this study provides empirical evidence to support arguments concerning how innovatively changing the BMs explain value creation and the capture of international customers as well as their implications for international performance. The findings also aim to elucidate the mediating role of BM change in facilitating SME internationalization. Hence, the first RSQ quantitatively examines the following:

**RSQ1:** *What effect do EO, and BMI have on the international performance of SMEs?*

RSQ 2 addresses dynamic capabilities (DCs) in action by drawing on network-focused behavior as a vital way to reveal entrepreneurial action in creating new BMs, irrespective of organizational context (Cavalcante et al., 2011; Mainela et al., 2014), in international market environments (Sarasvathy, 2001; Gabrielsson and Gabrielsson, 2013). BM discourse is also closely related to networks and the proposition and creation of value in which they function (Shafer et al., 2005; Balboni and Bortoluzzi, 2015). Previous research indicates that thriving in dynamic international environments requires developing appropriate capabilities (Teece, 1997; Ritter, 1999; Ritter et al., 2002; Torkkeli et al., 2012, 2015) for creating new or leveraging existing network relationships as *a critical DC* that SMEs can use to improve their performance in international markets (Torkkeli et al., 2012). This is because “dynamic capabilities are evolutionary, the perspective is well suited to analyze the necessary strategic actions of changing business models over time” (Achtenhagen et al., 2013, p. 429). Networking has been established as an enabler of BM change that reinforces innovation and supports large and older firms (Giesen et al., 2007). However, as SMEs transition from their home market into the international

arena, they may not have all the capabilities and resources needed to engage in international operations fully. Some reasons supporting the exploration of network capability stem from recent studies (e.g., Bankvall et al., 2017) that have argued that a firm's ability to span boundaries and link with surrounding networks is a fundamental driver of BM change. Thus, leveraging their networks' resources and capabilities may support the scale-up of and ease their entry into new international markets. Thus, the second RSQ quantitatively addresses the following question:

**RSQ2:** *What is the role of BMI and network capabilities in the internationalization and performance of SMEs?*

RSQ 3 is a layered question that seeks contextual evidence about how and why BMs change. The research focus is to advance knowledge on the critical role of context in explaining individual actions and the implications of BMs and internationalization outcomes (Ucbasaran et al., 2001; Sarasvathy and Venkataraman, 2011; Welter et al., 2019). Contextual findings can be drawn from accounts of entrepreneurs' experiences and the decision-making processes that drive internationalization activities (Jones and Casulli, 2014). According to Johns (2006), context has the potential to shape the very meaning of organizational behavior (p. 388). He illuminates that if we do not understand situations, we may not gain insights into person-situation interactions. Studies point that context provides deeper understanding of how individuals are motivated to engage in entrepreneurship and endure the challenges associated with various entrepreneurial activities (Johns, 2006). Contextual influences are said to "pervade and influence the micro-processes that give entrepreneurial actions their substance and potency" (Zahra et al., 2014, p. 480). Therefore, by paying attention to the micro-foundations of entrepreneurial activities and behavior (Teece, 2007), the present study explores BM as the "raw material from which entrepreneurial actions spring" (Zahra et al., 2014, p. 481) in a contextually mindful manner.

Furthermore, internationalization comes with risks, uncertainties, and other social, political, cultural, and environmental consequences of which a firm needs to be cognizant (Zucchella et al., 2018). Entrepreneurs' ability to effectively muster resources and communicate and rationalize how their firms should revise their BMs is critical for internationalization success. Decision-making logic has been posited as a theoretical lens through which BM changes and tactics can be investigated and explained (Perry et al., 2012; Sitoh et al., 2014; Torkkeli et al., 2015). Entrepreneurs are at the crux of BM change (Van den Oever and Martin, 2015; Cavalcante et al., 2011) because they are responsible for providing information and making choices that initiate change in their international activities and, consequently, in the BM (Hennart, 2014; Osterwalder et al., 2005). Decision-making that propagates and leads to changes in a BM is vital because it involves evaluating the existing model before deciding whether to make a change. For that reason, some entrepreneurs may be hesitant to change their BMs even when they should not (Shepherd et al., 2021). Thus, using a qualitative and conceptual methodology (in Publications III and IV, respectively), the following RSQ is addressed:

*RSQ3: How are the experiences and decision-making of international entrepreneurs manifested in how they change their BM?*

The rationale for RSQ 4 is to explore how entrepreneurs of early internationalizing ventures recognize international opportunities and translate them into action through their BMs. Publication V and parts of Publications III and IV found answers related to this question. Opportunity is necessary to create and develop an international venture (Mainela et al., 2014). Scholars suggest that BMs are created and developed by the opportunity assessment behavior of the firm or entrepreneur (Ahokangas and Myllykoski, 2014). Opportunity can be described as the heart of the business model because it illuminates the core processes and business practices of a firm. That opportunity can be explored from various research perspectives and in multiple contexts (Chesbrough & Rosenbloom, 2002; George and Bock, 2012; Ahokangas and Myllykoski, 2014; Juntunen et al., 2018) emphasizes that research on *opportunity* links scholarly research on BMs and organizational design regarding the reality of building entrepreneurial firms, providing actionable advice based on a deep understanding of how BMs function and change. However, the aptitude to recognize and exploit opportunities may vary from person to person due to the inimitability of individuals, previous experiences, frame of reference, knowledge, resources, capabilities, and other factors that directly or indirectly influence intentions and actions toward exploring and exploiting opportunities (Eckhardt, 2013; Mainela et al., 2014; Child et al., 2017). Studies also suggest that despite the centrality of opportunity and its importance, BM and BM change research that combines these concepts remains scarce (George and Bock, 2011, 2012; Juntunen et al., 2018). Scholars encourage more exploration into entrepreneurs' cognitive and behavioral actions and how they approach opportunities in home markets and abroad (Reuber et al., 2018). Moreover, leveraging the centrality of opportunity in IE and BM discourses elicits more profound and nuanced discussions on international entrepreneurial firms that cannot be achieved from one research perspective alone. Thus, the final RSQ is as follows:

*RSQ4: How are BM changes manifested as SMEs recognize international opportunities?*

### 1.3 Definitions of key concepts

#### 1.3.1 Definition of business model (BM)

Business models have become a widely studied concept in management disciplines such as strategy, technology innovation, and management, marketing, and, more recently, (international) entrepreneurship (George and Bock, 2011; Onetti et al., 2012; Child et al., 2017). The concept of BM is rarely well defined in the literature (Zott et al., 2011). The current range of definitions varies significantly. These definitions have also led to a lack of specificity, and opened the door to ambiguities, misunderstandings, and overlaps (Zott and Amit, 2008, 2013). The wide variety and occasional inaccuracy of these definitions can also be attributed to the fact that BM as a phenomenon has been studied from several disciplinary perspectives (Shafer et al., 2005; Müller and Vorbach, 2015). A well-rounded

definition, and one which was considered in this study, is that a BM “*articulates the logic and provides data and other evidence that demonstrates how a business creates and delivers value to customers. It also outlines the architecture of revenues, costs, and profits associated with the business enterprise delivering that value*” (Teece, 2010, p. 173). This definition depicts BMs as a gestalt comprising value dimensions—that is, a configuration of various elements that make up the core processes of a firm or an organization. The value dimensions of BMs have been described in numerous ways and have largely been categorized as the logic by which a firm *creates, proposes, captures, and delivers value* for itself and its stakeholders (Casadesus-Masanell and Ricart, 2010; Teece, 2010). Simply put, *value creation* mechanisms express how value is generated: They reflect organizational decisions that define resource allocation, identify, and capitalize on new business opportunities, and introduce new products and services to the market (Amit and Zott, 2001). A *value proposition* is an itemization of the kind(s) of value offered, while *value capture and delivery* concentrate on the earnings logic and how the business earns profits (Teece, 2010).

### 1.3.2 Small and medium-sized enterprises (SMEs)

An SME is defined by the European Commission (EC) as an “enterprise with fewer than 250 employees and a turnover of no more than €50 million or a balance sheet total of no more than €43 million” (European Commission Enterprise Publications, 2004). The Organization for Economic Co-operation and Development (OECD, 2009) defines small firms as organizations with fewer than 50 employees, while micro-enterprises have at most 10, or in some cases five, workers. Like the EC, the OECD also defines SMEs as non-subsidary, independent firms that employ few employees, with an upper limit of 250 employees in the European Union. The removal of trade barriers that occurred in the late 1990s and early 2000s, in addition to technological advancement and the wider adoption of the internet, have altered the ways in which SMEs perform on a global level (Knight, 2001; European Commission, 2003; Ruzzier et al., 2006; Kalinic and Forza, 2012). Thus, SMEs combine various kinds of internationalization models, approaches, and strategies when expanding into foreign markets (Ruzzier et al., 2006). The increasing contribution of SMEs to national economies, particularly small, open economies like that in Finland, has drawn increasing support from governments and other stakeholders, fostering competition regionally and worldwide (Knight, 2001; Loane and Bell, 2006; Kuivalainen et al., 2015). SMEs have been lauded for their contributions to economic growth, innovation, and social integration thus have gained a reputation as the “backbone” of growth in European economies (Kuivalainen et al., 2015; Mandl and Esser, 2015).

### 1.3.3 Internationalization

Internationalization, in simple terms, is conceptualized as involvement (by firms or individuals) in activities across national borders (Jones, 2001; Welch and Luostarinen, 1988). Internationalization is the conformation of a business’s operations, strategies, routines, structures, resources, and capabilities to satisfy international environmental requirements of firm-level activities outside the borders of the firm’s home country (Calof

and Beamish, 1995; Kuivalainen et al., 2012). Internationalization leads companies to operate in foreign markets, whether familiar or unfamiliar. These companies may face *liabilities of outsidership* (Johanson and Vahlne, 2009) and other market challenges and requirements (Landau et al., 2016; Child et al., 2017). However, time, space, speed, the motives of entrepreneurs, and interactions among these factors determine the outcomes and patterns of the internationalization process (Child et al., 2017; Kuivalainen et al., 2012; Zahra et al., 2014). Cultural, political, and technological environments act as determinants of whether a venture will be successful as it engages in international markets (Agwu and Onwuegbuzie, 2018). Internationalization determines changes in different temporal-spatial, social, and industry contexts in which a company operates (Zahra et al., 2014). In other words, internationalization lead companies into increasingly differentiated, dynamic, and competitive environments. Internationalizing companies are confronted with market challenges, changing trends, requirements, and factors like legislation, founder experience, and network relationships, which can also lead to competitive pressures, and affect how managers react and change their BMs as they seek to enter international markets or leverage international opportunities (Onetti et al., 2012; Child et al., 2017; Landau et al., 2017). The dynamism of international firms can be unraveled by understanding how entrepreneurial motivations, decisions, orchestration of resources, and capabilities affect internationalization activities (Zahra and George, 2002; Kuivalainen et al., 2012).

#### 1.3.4 International entrepreneurship (IE)

IE is a distinctive interdisciplinary research field that integrates perspectives from internationalization and entrepreneurship, to focus on how new ventures operate and compete in the international arena from their inception (Oviatt and McDougall, 1994; McDougall and Oviatt, 2005). IE lies at the intersection of international business (IB) and entrepreneurship theory. The IE literature generates rich theoretical insights and valuable contributions that have significant implications for entrepreneurship, international management, and strategic management research (Autio, 2005; Keupp and Gassmann, 2009). IE has been defined in multiple ways, including as *a combination of innovative, proactive, and risk-seeking behavior that crosses national borders and is intended to create value in organizations* (Oviatt and McDougall, 2000, p. 903). This definition embodies the proactive, innovative, and risk-taking characteristics of international entrepreneurial firms (Covin and Slevin, 1991). The revised definition by McDougall and Oviatt (2003) complements previous definitions by including the opportunity concept, thereby defining IE as the discovery, enactment, evaluation, and exploitation of opportunities internationally to provide goods and services in the future.

### 1.4 Structure of the Study

This dissertation is divided into two main parts and several chapters (see Figure 1.3). The first part began with this introduction, which contains the background of the research aims, the positions of the study, and the research questions that the dissertation addresses. The second chapter covers the conceptual and theoretical background of the research

phenomena—BMs and IE—as the theoretical lenses that guided the study. The third chapter discusses the methodology. Chapter four provides a summary of the objectives and the results of the individual publications that are appended to the dissertation. The final chapter concludes the dissertation with a discussion, theoretical contributions, and suggestions for future research. The second part of the dissertation consists of the appended publications.

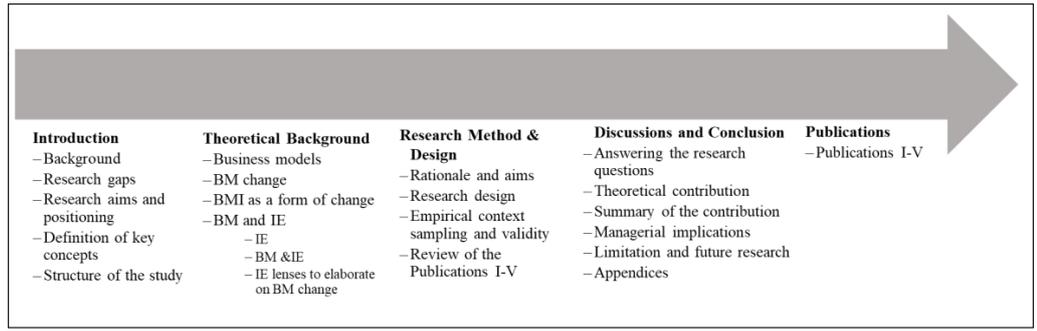


Figure 1.3: Structure of the study.



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## 2 Conceptual and Theoretical Background

### 2.1 Business models

#### A brief history of business models

The term “business model” was initially used by Bellman et al. in 1957. Afterward (from the 1970s until the 2000s), the development path of business model (BM) literature has been broadly focused on three main perspectives: technology (e-business), organization (business architecture), and strategy (integration of entrepreneurial activity) (Wirtz et al., 2016; Nielsen et al., 2018a). While these perspectives entail distinct discussions on BMs, recent and ongoing research is increasingly combining them, converging them into the broader BM management literature. The three perspectives are developed over two main temporal phases: “the early and formation phase” and the “differentiation stage” (Wirtz et al., 2016). The early, formative phase of the BM literature lasted from the 1960s to the early 2000s. BMs gained recognition from the early 1960s to the 1980s. During this period, it attracted research interest and prompted discussions, most of which still primarily hinged on the three perspectives mentioned above (Wirtz et al., 2016, Nielsen et al., 2018a).

An example of early interest in BM research can be found in Drucker’s *theory of business*, which describes assumptions that shape organizational behavior and dictate the decisions that determine what a firm should or should not do (Drucker, 1985, 1988). In response to Drucker’s contribution, Magretta (2002) recalibrated and moved the discussion forward by including the BM concept, explaining it as the logic of business that firms should consider as they create and deliver value to customers at an appropriate cost. BM research gained prominence during the internet boom of the early 1990s (Nielsen et al., 2019). In the early 1990s, BMs became closely associated with many internet-based companies that were connected with what became known as the dot-com bubble (Magretta, 2002; Osterwalder et al., 2005; Nielsen et al., 2019). BMs have also gained prominence in corporate practice since the 1990s (Nielsen et al., 2019) and have become more notable as an interdisciplinary phenomenon owing partly to the early opportunities identified by e-ventures, advances in technology, strategy innovation systems, and the e-commerce era (Tece, 2010; Müller and Vorbach, 2015).

At the outset of the 2000s, the BM literature increasingly shifted toward embracing more definitions, i.e., discussion on e-business and BMI (Hedman and Kalling, 2003). Despite increasing publications in the field (articles and journals) and various frameworks based on these discussions and the definitional issue of the BM concept remained unresolved. In the latter part of the 2010s, the emphasis in BM analysis shifted from e-commerce to business management discourse in general (DaSilva and Trkman, 2014), what Wirtz et al. (2016) described as the differentiation stage in BM research. BM discussions in this period were undertaken primarily from a strategy perspective and emphasized consumer-specific dimensions of benefit to companies (Tece, 2010). Additionally, concerted

research efforts were made according to various categorizations and with the ongoing objective of determining when BM change becomes innovation or adaptation (Nielsen et al., 2019; Foss and Saebi, 2017; Wirtz et al., 2017; Saebi et al., 2016).

BM research has continued to gain traction with the emergence and enhanced relevance of information technology (IT) in business, management, and strategy. Giving rise to numerous neologisms, terms, and concepts (such as longtail, freemium, blue ocean strategy, bait and hook, platform, and multiplatform models) developed to explain the business success and revenue architecture of nimble ventures like Apple, IBM, Airbnb, Uber, Gillette, Netflix, Google, Southwest Airlines, Starbucks, and Amazon, all of which credited the efficacy of their operations to BM innovations and designs. Since becoming widely known, the BM concept has attracted substantial interest from and stimulated discussion among scholars and practitioners as a sophisticated and innovative approach that drives the dynamic formation of profitable ventures.

### **Conceptualizations and definitions of business models**

Despite the evolution of BM research highlighted above, the term “business model” continues to be used loosely, and growth in this field is still in its early stages (Demil and Lecocq, 2010; Cavalcante et al., 2011; Wirtz et al., 2016; Nyström and Mustonen, 2017). Moreover, BMs remain insufficiently theorized, lack conceptual abstraction, and have mainly relied on concepts from related disciplines to push BM research forward (Zott et al., 2011; Sainio et al., 2011; Wirtz et al., 2016; Shafer et al., 2005). As Teece noted, “This paucity of literature (both theoretical and practical) on the concept is remarkable, given the importance of business design, particularly in the context of innovation” (2010, p. 192) and has hindered advances in the field (George and Bock, 2011). Scholars have also attributed the lack of development (Hedman and Kalling, 2003; Schweizer, 2005) to the early theoretical foundations of the BM literature, which were thematically (Zott et al., 2010) ambiguous and conceptually vague (Casadesus-Masanell and Zhu, 2013; DaSilva and Trkman, 2014).

The slow development of BM research in isolated silos may be attributed to its overlap with other (e.g., business strategy) research concepts (Chesbrough and Rosenbloom, 2002; Casadeus-Masanell and Ricart, 2010; Zott et al., 2011). The ambiguities that exist between BMs and business strategy, which are due to the difficulties in distinguishing the two concepts, have created contention in the field. Some scholars acknowledge that BMs may embody some strategic elements (Morris et al., 2005; Zott and Amit, 2011), while others suggest that BMs are strategically important tools through which firms can potentially create, deliver, and capture value (Morris et al., 2005; Zott and Amit, 2008; Casadesus-Masanell and Ricart, 2010a, 2010b), thereby clarifying how potential stakeholders could generate and sustain value (Demil et al., 2015). Still other scholars clearly articulate that: “a business model is a direct result of strategy but is not a strategy” (Shafer et al., 2005, p. 203) because strategy demonstrates a company’s plan or pattern of behavior over time. Some studies portray BMs as strategic blueprints that establish the premises of the organizational structures, processing activities, and implemented systems

(Osterwalder and Pigneur, 2010). This conceptualization of BMs is based on the notion of a “how-to” tool that exemplifies a firm’s actions of value creation, delivery, and creation of business opportunities (Teece, 2010; Hennart, 2014; Abrahamsson, 2016). As such, demarcating strategy from BMs is recommended and remains an ongoing effort in BM research (Onetti et al., 2012).

This study did not engage in overly ambitious theoretical or philosophical arguments about the fine line between strategy and BMs. Instead, in accordance with pivotal studies in the field, it assumes that BMs and strategies may be mutually reinforcing. Notably, however, there is an agreement that BMs serve as frameworks through which firms can implement their strategies (McGrath, 2010), thus providing clarification on how value is created and captured (Osterwalder and Pigneur, 2010; Teece, 2010). Accordingly, BMs can be viewed as an activity system that establishes a way to do business. There is growing consensus viewing BMs as a design, a structural template, or an architecture of a focal firm’s observable constellation of core processes or activities which is dedicated explicitly to value creation, delivery, and capture for itself and customers (Zott and Amit, 2010; Teece, 2010). These agreements, however, do not dismiss the need for more definitions or for clarification about the purpose of BMs and their distinctiveness from other established concepts (e.g., strategy) in management research.

A wide range of definitions have been used in the literature. In simple terms, BMs are said to underpin organizational life by explaining how companies create, deliver, and capture value (Massa et al., 2017; Shepherd et al., 2021). They are also used to describe the key components of a given business (Hedman and Kalling, 2003). Different researchers depict BMs graphically, narratively, or as an activity system (Magretta, 2002; Osterwalder and Pigneur, 2010; Zott and Amit, 2010). BMs have also been described as a “rationale of how organizations create, deliver and capture value” (Osterwalder and Pigneur, 2010, p. 14) or as a set of decisions that are closely related to a firm’s market strategy, transaction approach, organizational structure, and internal and external activities via its business networks and network transitions (Balboni and Bortoluzzi, 2015). Other studies have described BMs as an organizational story (Magretta, 2002), an architecture that transforms innovation into value (Chesbrough and Rosenbloom, 2002), a structural template (Zott and Amit, 2008), and a machine with logic (Casadesus-Masanell and Ricart, 2010). BMs describe firm activities as a system-level, holistic approach for explaining how firms do business and thus elucidate the creation, capture, and appropriation of value in organizational activities (Zott et al., 2010)

In this study, two important definitions are followed. The first definition was provided by Teece (2010, p. 179): *“A business model articulates the logic, the data, and other evidence that support a value proposition for the customer and a viable structure of revenues and costs for the enterprise delivering that value. In short, it’s about the benefit the enterprise will deliver to customers, how it will organize to do so, and how it will capture a portion of the value that it delivers.”*

The second definition, developed by Wirtz et al. (2016, p 4.), is more convergent: “A business model as a simplified and aggregated representation of the relevant activities of a company. It describes how marketable information, products, and/or services are generated by means of a company's value-added component. In addition to the architecture of value creation, strategic as well as customer and market components are taken into consideration to achieve the superordinate goal of generating, or rather, securing, the competitive advantage. To fulfill this latter purpose, a current business model should always be critically regarded from a dynamic perspective, thus within the consciousness that there may be the need for business model evolution or business model innovation due to internal or external changes over time.”

Teece (2010) definition was considered because the definition was simple, and yet retained the compound logic that BMs should provide evidence and information that back up the value creation and appropriation and capture actions of the firm. The definition by Wirtz et al. (2016) also extensively corresponds to the logic of this dissertation as it promotes an all-encompassing and convergent logic that allows one to engage with the BM as a tool firms use in their business activities. Furthermore, both definitions portray the BM as a boundary object for gauging the value activities of firms and/or the dynamic instruments of change firms use to catalyze their strategies and re-calibrate their ideas or initiatives into action. Thus, allowing the BM to stand out (in this study) is the embodiment of spontaneous or purposeful change or development of a company's (international) activities.

### **Dimensions of business models**

BMs can be broken down into three key-value dimensions: *value creation*, *value proposition*, and *value capture and delivery* (e.g., Teece, 2010; Speith et al., 2016; Clauss, 2017). Value is a central and independent construct that is connected to different disciplines. In management studies, value has been linked to theoretical perspectives like value chain analysis (Porter, 1985), the resource-based view (Barney, 2001), and transaction cost economics (Williamson, 1979). In the BM context, value is focused on the firm (Zott and Amit, 2008), describing the attributes (qualities, characteristics, and dynamics) at the focal-firm level and the boundary-spanning activities that the firm undertakes. Thus, BMs represent configurations that primarily and dynamically integrate value activities (Winter and Zulanski, 2001; Baden-Fuller and Mangematin, 2013; Clauss, 2017). Although they provide distinct merit to every BM, the value dimensions of a BM are interdependent—that is, the combination of the three value mechanisms forms the gestalt of a firm's BM (Shafer et al., 2005; Clauss, 2017). In the sense that the elements of BMs are interrelated, a consequence of their relationship is that they are interdependent in the ways in which they affect change or guide the innovation mechanisms within a firm (Osterwalder and Pigneur, 2010; Müller and Vorbach, 2015), which implies that a change in one value dimension could affect another value dimension in the firm's overall BM.

*Value creation:* This concept closely relates to the core definition of value itself. Value creation demonstrates how companies produce value for customers along the value chain (Amit and Zott, 2011; Achtenhagen et al., 2013; Clauss, 2017). One essential function of a company is to create value for its customers and stakeholders (Sainio et al., 2011) by orchestrating resources and effectively deploying capabilities on the intra- and inter-organizational levels (Clauss, 2017). Thus, value creation combines interdependent activities that can add value to company products and services. The value creation dimension of a BM reflects the organizational decisions that define resource allocation and the identification of and capitalization on new business opportunities, as well as the introduction of new products and services to the market (Teece, 2010). In some studies, the concepts of value creation and value proposition have been integrated (Osterwalder and Pigneur, 2010). Sainio et al. (2011) noted that value-maximizing BMs and value creation are essential constructs for integrating and guiding IE research. Value creation is closely associated with innovation at the product and process levels, especially in SME internationalization processes (Peiris et al., 2012). Thus, the (latent or realized) value created should consider customer satisfaction and how successfully the firm can meet customer needs.

*Value proposition:* Value proposition is customer-centric and deals with how the firm provides different offerings or solutions for its customers and stakeholders (Morris et al., 2005; Teece, 2010). It is a key element of the BM because it encompasses the firm's value offerings (Johnson et al., 2008; Osterwalder and Pigneur, 2010). Firms can create unique and differentiated value for their customers through their value propositions and thereby achieve lock-in (Kim and Mauborgne, 1998). The ability to create an efficacious value proposition for a relevant BM is daunting for both firms and their managers (Magretta, 2002). Most firms craft their value propositions qualitatively to improve customer experiences (e.g., custom solutions, convenience, brands), quantitatively (e.g., speed of service, competitive pricing), or through the creation of entirely new products (Osterwalder and Pigneur, 2010). They do this to ensure that customers' current and latent needs are met (Johnson et al., 2010).

*Value capture and delivery:* This mechanism stems from the idea that if a company delivers value (a good, a service, or a solution), customers who appreciate that value will be willing to pay for it (Teece, 2010). Thus, this mechanism describes the value a firm accrues from the value proposition it delivers; simply put, it is the way the venture earns profits (Shane and Venkataraman, 2000; Amit and Zott, 2001). "A good business model yields value propositions that are compelling to customers achieve advantageous cost and risk structures and enables significant value capture by the business that generates and delivers products and services" (Teece, 2010, p. 174). The term "value capture" has also been used to describe revenue streams or the compensation of a value proposition (Osterwalder and Pigneur, 2010). Other factors that are considered in value capture include price. Value delivery concerns the channels through which companies reach their key customer segments (Osterwalder and Pigneur, 2010; Baden-Fuller and Mangematin, 2013). After-sales service is considered part of value delivery in the BM literature (Chesbrough, 2006; Osterwalder and Pigneur, 2010). Value delivery requires that a

company has the competencies to evaluate and employ the best channel to deliver the value proposition at cost-efficient prices. Customer relationships are one of the most important parts of this dimension because they can be established or changed through interaction and customer relationship management (Osterwalder and Pigneur, 2010; Clauss, 2017). Customer relationships include customer acquisition, retention, and bootstrapping (Osterwalder and Pigneur, 2010). As a result, many firms, regardless of size, leverage lock-in effects to retain their customers (Amit and Zott, 2001). Lock-in links future sales of expendable goods to a value basis (Clauss, 2017), which increases switching costs and thus is the foundation on which many prominent BMs are grounded (Kim and Maubougne, 1998; Osterwalder and Pigneur, 2010; Clauss, 2017). Overall, value capture and delivery mechanisms enable organizations to develop competencies to convert value propositions into revenue streams. In other words, they encompass an earnings logic that sustains the venture, protect competitive advantage, and improves performance (Teece, 2010; Clauss, 2017).

### Relevance of business models

BMs begin with an idea that gradually develops and conforms to an envisioned architecture embodied in the firm's core processes and value creation and capture mechanisms (Cavalcante et al., 2011). Subsequently, as firms mature, they are under pressure to change to become or remain profitable (Wirtz et al., 2016; Child et al., 2017; Torkkeli et al., 2012). Thus, firms continually modify their core processes in response to opportunity, cope with market uncertainty and requirements, and manage the competitive environment. Although there is no clear evidence to guarantee that changing BMs will emphatically lead to profit or improve performance, studies have shown that BMs that have the capacity to change are also those most likely to cope in dynamic environments and under uncertainties (Teece, 2010; Linder and Cantrell, 2000).

BMs are of importance because they constitute a system of activities that demonstrates the logic of how an organization makes money with a focus on the firm's positioning in the value chain (Afuah and Tucci, 2003; Magretta, 2002). Thus, BMs are designed to specify tasks and the interactions of these tasks and/or activities (Iivari et al., 2016). According to Linder and Cantrell (2000), BMs focus on two main dimensions: core (profit-making) activities and their relative position. *Core activities* involve production and selling, engagement with stakeholders, price, customer requirements that establish channels, and custom services. *Relative position* on the value continuum model focuses on the value perceptions that a company wants to inculcate or portray to customers or how it wants to be perceived. Relative position BMs may be based on a price-quality ratio, ease of use, pricing strategy, etc. BMs clarify the system of specific value activities to be conducted internally or externally to satisfy the needs of a target customer group or market (Iivari et al., 2016). In line with this perspective, Massa et al. (2017) instead categorized BMs based on three themes: *as real firms* (as an empirical phenomenon or attribute of real firms) (e.g., Casadesus Masanell and Zhu, 2010; Chesbrough, 2020; Nielsen and Lund, 2014; Zott and Amit, 2010), *as cognitive and linguistic schemas* (business models are interpreted by managers and their role and manifestation in social

(inter)action) (e.g., Baden-Fuller and Morgan, 2010; Doz and Kosonen, 2010; Snihur and Zott, 2020), and *as formal representations* (two anchor points of real entities and linguistic schemas and thus as narratives and formal, conceptual representations) (e.g., Casadesus-Masanell and Ricart, 2010; McGrath, 2010; Osterwalder et al., 2005). The key emphasis on the context of BMs as linguistic schemas reveals the role of managers and their decision-making and retrospective and active descriptions of how an organization function to facilitate communication between actors (Massa et al., 2017; Shepherd et al., 2021).

Other studies have categorized BMs into distinct components: cost structures, revenue models, value propositions, customer segments, customer relationships, channels, key activities, key resources, and supply chains (Osterwalder and Pigneur, 2010). These categories help answer questions concerning *what is being offered to whom, how, and at what cost*. Through the architecture of a BM, managers design the content, structure, and governance of an organization with the intention of creating value by exploiting business opportunities (Amit and Zott, 2001; Nyström and Mustonen, 2017), especially at a system level (Demil et al., 2015). The BM, as a result, functions as an outline through which managers make sense of their business processes and translate strategic issues into solutions and, by implication, develop a conceptual archetype targeted at elucidating the business function (Osterwalder et al., 2005) and the structure, resources, and revenue models of the firm (Tallman et al., 2017). Doganova and Eyquem-Renault (2009) suggested that a BM works as a flexible narrative and calculation device, meaning that entrepreneurial firms can use their BMs to manage tensions in their entrepreneurial processes, especially as they identify and explore the suitable market for their products and innovations. BMs also support the coordination of the ways in which firms engage with heterogenous actors and network partners to support and manifest their venture activities (Doganova and Eyquem-Renault, 2009). Consequently, creating a viable BM fosters the commercial activities of both new ventures and established companies (Gunzel and Holm, 2013; Magretta, 2002).

It is also profitable to denote that BMs depict “management's hypothesis regarding what customers want, how they want it, and how the enterprise can organize to meet those needs best, get paid for doing so, and make a profit” (Teece, 2010, p. 172). Managerial decisions that lead to the development of required business performance capabilities result from changes in the firm's value delivery and appropriation system (Reymen et al., 2017). The BM is thus a powerful managerial-level tool that reflects how management interprets stakeholder and customer needs and transforms them into new value while maximizing profits and, by implication, supports the design, communication, and implementation of any required changes in the firm's business logic and potential value capture (Shafer et al., 2005; Johnson et al., 2010). BMs are generalized as a combination and reflection of entrepreneurial decisions and strategic decisions that affect a firm's operational activities (Shafer et al., 2005; Schneckeburger et al., 2017). Thus, exploring BM changes provides an understanding of a firm's core processes and the value mechanisms necessary for successful business performance. This function bolsters BMs as an implicit or explicit architecture structured by an enterprise to ensure that value is

captured and delivered to customers and to bring the firm financial, economic, and social benefits.

## 2.2 Understanding business model change

*The beginning of wisdom is to call things by their proper name — Confucius*

The dynamic nature of BMs is the primary reason *why* they change and the central topic around which the discussion of change revolves (Saebi et al., 2016; Nielsen et al., 2018a, b). Change is evident in the BM from ideation or idea generation to maturity and even termination (Cavalcante et al., 2011; Linder and Cantrell, 2000). Change is an ongoing process and continues throughout the lifecycle of the BM (Osterwalder et al., 2005). While BM change as an independent concept is not explicitly or emphatically defined in the BM literature, it is undeniably *implied* in almost all BM publications. For example, change is implied (implicitly or explicitly) as an ad-hoc, incremental, or trial-and-error approach (such as BM experimentation or replication of parts of the BM) that cushions the effects of dramatic BM change. Changes to the BM are also implied when discussing BM innovation, adaptation, erosion, etc. (Klang et al., 2014; Müller, 2014). Thus, BM change is evident in diverse ways and is linked with transformations in the BM itself. Modifications in a BM affect the firm's core processes, the interaction of resources and capabilities, the type of organization being examined, technological activities, innovative activities, a firm's adaptation activities, and so on (Morris et al., 2005; Saebi et al., 2016).

According to Saebi et al. (2016), research efforts have increasingly shifted from conceptualizing, characterizing, and constantly explaining what business *is* or *is not* to a more dynamic view that incorporates phenomena like BM innovation and adaptation. The two main research streams are largely triggered by internal or external stimuli (Wirtz et al., 2016; Saebi et al., 2016). The first research stream addresses *the changes occurring in existing BMs over time*, often in response to external stimuli (Saebi et al., 2016). Examples of external stimuli are technological changes, opportunities or threats, a competitive environment, and customer preferences. Saebi et al. (2016) surmised that changes in the BM in response to external stimuli tend to be an adaptation: This means that a firm and management or entrepreneurs actively align the BM in response to the changing environment. The second research stream addresses change to the BM *as a creative process* aimed at actively and typically innovating the firm's BM with the purpose of differentiation, disruption, and the eventual nullification of the activities of competitors, thereby gaining uncontested market space. By and large, research in this area has been based on the consideration of internally initiated stimuli, leading to the innovation of BMs (Saebi, 2014). However, BM innovation has proven to be more dynamic in that it can be both internally stimulated and externally triggered (Bucherer et al., 2012; Saebi et al., 2016; Wirtz et al., 2016).

Furthermore, changes to an initial BM are made based on the manager's perception of "fit," which Shepherd et al. (2020) explain this in terms of BM coherence. These authors stated that business coherence reveals the extent to which (international) entrepreneurial

managers' cognitive structures and/or schemas influence the way in which they organize their core activities and/or willingness to change the BM and the resulting influence on value creation and value capture factors that account for evidence of an international opportunity. Thus, lack of BM coherence requires managers to make decisions concerning radical or incremental changes to their BM, which is critical to firm survival and performance, especially for internationalizing firms (Amit and Zott, 2001; Torkelli et al., 2012; Child et al., 2017; Shepherd et al., 2021). This study ascribes to Saebi's (2014 p. 7) definition of a BM "*as the process by which management actively alters the intra-organizational and/or extra-organizational systems of activities and relations of the business model in response to changing environmental conditions. This suggests that changes made to an existing business model are intentional and deliberate and occur in response to environmental contingencies.*"

Building on this definition, BM change in this study is conceptualized or defined as an intentional (calculated or proactive) modification or an unintentional (spontaneous or reactive) modification made to a new or existing BM of a firm. Intentional changes are purposive or internally motivated aimed towards achieving one or more outcomes. Unintentional modifications occur in response to external circumstances and may be spontaneous or even accidental—this type of BM change may or may not lead to the desired outcome. However, both internal and external stimuli can induce change to a BM simultaneously or independently. Internally generated BM change tends to be directed inward, due to internal factors or stimuli such as organizational initiatives. An example of internal BM change includes BMI. On the other hand, externally induced BM change largely responds to external factors or stimuli. An example of an externally induced BM change is BM adaptation.

Understanding the modifications and transitions that occur from ideation through the development phases of a BM generates a compelling logic by which a firm can adapt, monitor its competition, and sustain profitability and operational stability over time (Linder and Cantrell, 2001; Chesbrough and Rosenbloom, 2002; Osterwalder et al., 2005). Prior studies have offered insights into how internationalization activities enhance the value mechanisms of SMEs (Onetti et al., 2012; Child et al., 2017). One challenge that arises in this domain is that, despite spearheading some of the foundational studies that have driven the field, many discussions in the BM discourse remain ambiguous. Additionally, the literature remains heterogeneous and therefore needs clarification of the BM concept in both theory and practice (Gassmann et al., 2016; Foss and Saebi, 2017; Massa et al., 2017). While the need for more clarity concerning the BM construct will help minimize ambiguity and vagueness, it is even more important to clarify how BMs change (Zott and Amit, 2008; Gassmann et al., 2016). Even though every firm has its own BM, this does not imply that the BM concept lacks strategic importance and singularity as a level or unit of analysis. Gassmann et al. (2016) emphasize that even the leading schools of thought in BM research have harmoniously and sometimes parsimoniously argued for BMs but have used different terms and contexts to argue for how business is done and how value is created. Zott and Amit (2008) offer encouragement that the state of the field is not hopeless, and that the BM field specifically indeed shows promising

signs of convergence. Still, there is a need for a more precise construct upon which researchers can agree. Thus, scholars (e.g., Wirtz et al., 2016; Clauss, 2017; Foss and Saebi, 2017; Massa et al., 2017) urge for more empirical research that will move the field forward in order to explicate the iterative transitions and modifications of the BM as firms develop and grow.

The unifying concept of *BM change* has the potential to consolidate and allow for progressive research as an integrative theory that combines different literature streams (Ritter and Lettl, 2018). Schneider and Spieth (2013) highlighted that “common in the attempts to define business models is the characteristic that the concept neither limits its scope on firm internal elements nor external environmental factors, but rather it provides a holistic perspective that allows managers to take an integrated view on their firm’s activities” (2013, p. 4). Exploring changes in BMs has the potential to complement our understanding of different individual- and firm-level functions. Scholars have suggested that a firm’s BM may reveal its strategic inclination and the position of another firm in a similar competitive landscape or industry (Massa et al., 2017; Evers et al., 2019). Exploring BM change can also unpack the value mechanisms (creation, proposition, and capture) of a firm and how the interactions of these mechanisms affect customers, stakeholders, and organizational relationships (Cavalcante et al., 2010; Osterwalder and Pigneur, 2010). BM changes may also enable innovation activities and contribute to firms’ profitability and performance (Sosna et al., 2010; Foss and Saebi, 2017).

Just as several perspectives exist in BM research (Ritter and Lettl, 2018), multiple terms have been adopted in the BM literature to express or depict “change,” whether explicitly or implicitly (Müller, 2014; Wirtz et al., 2016; Nielsen et al., 2019). Scholars agree that firms change their BMs to improve performance or profitability (Linder and Cantrell, 2000; Voelpel et al., 2004; Yip, 2004; Pateli and Gigalis, 2005; Osiyevskyy and Dewald, 2015). For example, Casadesus-Masanell and Ricart (2011) reported that 7 of 10 firms engage in BM innovation, with about 98 percent of firms modifying their BMs to at least some extent. Thus, we know that modifications or transformative changes to the BMs may occur in various ways: innovative activities, adaptive activities, experimentation, and so on (Demil and Lecocq 2010). Chesbrough (2010) also adds that BM changes can be implemented by confronting and reengineering the existing business architecture with new value creation delivery and reconfiguration activities.

Nonetheless, the precise meaning of the term “BM change” and the specific characteristics that constitute the creation of BM change remains unclear and would therefore benefit from further examination. Müller (2014) argues that BM improvement or the introduction of a new product or service is generally addressed through BM innovation, no matter how innovative these changes are in reality. This raises questions about the parameters or measurement of BM change and the extent to which change must be implemented in a firm’s activities to qualify as BM innovation—considering that different terms have been used to discuss the changes that occur in a BM. For example, several terms and concepts have been applied to the discussion of BM change, including “business model evolution” (Demil and Lecocq, 2010), “business model innovation”

(Amit and Zott, 2012), “business model dynamics” (Mason and Leek, 2008), “business model reinvention” (Voelpel et al., 2005), “business model experimentation” (Rissanen et al., 2019), “business model flexibility” (e.g., Mason and Mouzas, 2012), and “business model adaptation” (Saebi et al., 2017), along with concepts from the strategy domain, such as value innovation (Kim and Mauborgne, 1997) and strategic innovation (Markides, 1997). Overall, most of these terms mean “change of business models” in one form or another (Linder and Cantrell, 2000; Müller, 2014).

This study establishes that changes to BMs occur in different ways. While the generally accepted logic for changing a BM is to modify a firm’s core processes to create and deliver sustainable value (Teece, 2010; Osterwalder and Pigneur, 2010), BMs are driven by strategic discontinuities and disruptions that call for change (Doz and Kosonen, 2010, p. 370). Companies change their BMs due to external uncertainties, triggers, and encounters in host countries (Onetti et al., 2012; Child et al., 2017). Adapting BM activities and organizational routines (Chesbrough, 2007; Cavalcante, 2014) facilitates the alignment of a company’s key activities with the requirements of an international environment (Butcherer et al., 2012). Moreover, firms that are vigilant about and sensitive to their operating BMs may be more capable of innovatively leveraging the power of their BMs to achieve differentiation and gain a competitive edge (Kim and Maubougne, 2005; Johnson et al., 2008; McGrath, 2010; Saebi et al., 2016).

Firms also change their BMs in response to the internal need for innovation and growth as well as the need to adapt to external threats or opportunities (Bucherer et al., 2012; Mason and Spring, 2011; Saebi et al., 2016; Wirtz et al., 2016). BMs may be internally (re-)engineered by entrepreneurial motivations in response to organizational needs (DaSilva and Trkman, 2014). BM change can be engineered as a disruptive and latent response to market competition and as a method to enhance value creation and capture. Innovatively redesigning value propositions improves customer satisfaction and boosts revenue while maintaining competitive advantage (Osterwalder et al., 2014). Accordingly, entrepreneurs consistently seek ways to develop the competencies to effectively change their BM (Torkkeli et al., 2015). Aversity to change leads to stagnation and the possibility of obsolescence. Moreover, BMs can be adopted to decrease the risk of inertia, especially when an organization starts to become too comfortable or too rigid to change due to its immediate or apparent growth and success (Achtenhagen et al., 2013; Doz and Kosonen, 2010). Therefore, it is crucial to cultivate and sustain stability in an organization’s internal and external activities while permitting flexibility to accommodate changes (Cavalcante et al., 2011).

The understanding of BM change, especially in the context of internationalization and in the IE domain, is still in its infancy (Coviello and Tanev, 2017; Onetti et al., 2012, Sainio et al., 2012; Hennart et al., 2021). Nonetheless, to achieve sustainable success in domestic and international markets, companies are compelled to continually revise their BMs and develop the necessary capabilities to implement change (Teece, 2007). Thus, viewing BMs as static concepts does not fully capture the applicability and efficacy of the BM concept due to the evident interplay and navigation between individual- and firm-level

activity and the international environment. The flexibility and opportunity to reshape BMs are fundamental conditions for competitiveness in a rapidly changing market environment (Teece, 2010). Considering that BM change may be either incremental or radical in nature—ranging from minor adaptations to a thorough reconfiguration of the BM (Achtenhagen et al., 2013)—the dynamic transition of BMs from one state (e.g., the initial BM employed at firm inception) to another should accommodate strategy reforms and the business structure of the firm (Agarwal and Helfat, 2009), thereby fostering the creation of new or the refinement of existing business processes that will ensure sustainable growth and competitive advantage over time (Abrahamsson, 2016; DaSilva and Trkman, 2014; Mateu and March-Chorda, 2016).

Content-related BM changes are also an important focal area (e.g., movement along the product-service continuum from core products to supplementary service offerings and solutions). Executing dramatic and novel changes in the fundamental elements of BMs (Mateu and March-Chorda, 2016) is a daunting task that can make or break the model. Consequently, designing a change and governance structure for BM activities is imperative (Zott et al., 2011; Forkmann et al., 2016). Entrepreneurs are the forerunners who oversee the creation of their first BMs; thus, they must possess or develop the DCs required to facilitate a smooth process (Gerasymenko et al., 2015; Müller and Vorbach, 2015; Forkmann et al., 2016), as otherwise, the development of BMs will end in failure (von den Eichen et al., 2015). Onetti et al. (2012) suggested that “focus,” “locus,” and “modus” should be considered as central BM elements, particularly in the case of internationalizing firms. Here, focus refers to the resource allocation decisions for different activities across the value chain, locus refers to the site of these activities, and modus refers to the method of operation for the various activities, such as whether they should be conducted in-house or outsourced.

Although the comprehensive exploration of change remains incomplete due to overlaps in the terminologies used in empirical studies, Afuah and Tucci (2003) explained BM change by lending credence to Schumpeter’s work (1883–1950) and the notion of “creative destruction,” stating that change “gives rise to new entrepreneurial firms creating wealth and old, established incumbents dying off” (2003, p. 12). Afuah and Tucci added that the impact of change on a firm’s BM or industry is a function of the type of change, stating that radical, architectural, or disruptive change can render existing BMs obsolete and drastically alter the competitive landscape in existing industries or even create entirely new industries while killing off old ones (2003, p. 12).

Table 2.1 summarizes some of the different terms discussed in the BM literature to explain BM change. A BM is subject to sporadic changes during its lifecycle. Only modifications that impact standard, repeated processes constitute a change in the BM (Cavalcante et al., 2011). The synthesis shows that a host of concepts and terms are used in the BM literature to describe *the BM changes* firms undergo. Although these terms explain the important features that the authors who used them aimed to delineate in their research, the parameters that distinguish them have not necessarily been established (Müller, 2014; Foss and Saebi, 2017). Scholars have emphasized that using the BM

concept loosely may be problematic and may hamper theoretical grounding and convergence, which has been a major issue in this domain (Hawkins, 2002; Magretta, 2002; Zott and Amit, 2008; Gassmann et al., 2016).

Nevertheless, BMs can explain how change is reflected in the value chain of international entrepreneurial firms. In line with Nummela et al. (2006) and Sainio et al. (2011), investigating BM change contributes to understanding the (international) entrepreneurial behavioral process. BM change becomes the backdrop through which entrepreneurial activities can be observed. However, both academics and practitioners generalize the concept of BMs to describe observed changes, unique attributes, or features of a given venture peculiar to a study or data set. This results in the employment of haphazard concepts and semantics that have largely argued for the same thing: “changes” that the BM goes through. For examples of these terms, see Table 2.1. Apart from the more established concept of BMI, which has been extensively explored and backed up by verified measurement scales (Clauss et al., 2017), most of the other concepts that describe change lack comprehensive descriptions of their unique characteristics, goals, focus, scale, or scope. Most of these concept’s stem from either an author’s approach to describing the change(s) he or she observed or was coined due to the integration of BM research with other theoretical constructs or disciplines (e.g., dynamic BMI and the combination of DCs and BMs). In the face of the inconsistent usage and insufficient delineation of the numerous terms used to describe the modifications and transitions that BMs undergo, this dissertation identifies with the standard and common unifying denominator or concept among these terms—that is, *BM change*.

Table 2.1: Synthesis of BM change terminologies.

Topics and terms exploring BM change	Brief description of change type	Key findings and outcomes	Authors
<b>BMI</b>	BM <i>changes</i> that are targeted at creating new logic that creates, delivers, and captures value based on BM value components or subconstructs. Innovating BMs are initiatives and actions to improve the existing BM, either radically or incrementally.	Growth, enhancing competitive advantage, innovation; differentiation, cost advantage; knowledge; learning, sustainability; DCs improve performance.	Lindgardt et al. (2009); Clauss et al. (2017); Chesbrough (2010); Massa and Tucci (2010); Amit and Zott (2012, 2017); Markides (2006); Speith and Schneider (2013); Bucherer and Eisert (2010); Giesen et al. (2010); Schneider et al. (2013); Hock-Doepgen et al. (2021); Teece (2010); Trimi and Berbegal-Mirabent (2012); Chesbrough (2010); Sosna et al. (2010); Foss and Saebi (2017); Pohle and Chapman (2010).
<b>BM adaptation</b>	<i>Changing</i> all or parts of the BM in response to or alignment with external triggers or environments. Changes may lead to innovating or refining a firm’s	Firm survival, product, and process standardization; growth; monitoring BM evolution and profitability; market	Saebi et al. (2014, 2016); Landau et al. (2016); Sosna et al. (2010); Balboni and Bortoluzzi (2015).

	operation, value proposition, or value capture. Adaptation is often based on a specific goal, reacts to an imposed situation, or is in response to changing market conditions, whether domestic or international.	knowledge generation capability; development of strategic decision-making, performance.	
<b>Disruptive BMI innovation</b>	Innovative <i>change</i> aimed at (radically) improving the competitive position in the international market.	Defining and improving capabilities, revenue, and current and future competitive position.	Giesen et al. (2007); Hwang and Christensen (2008); Markides (2006); Osiyevskyy and Dewald (2015).
<b>BM reinvention</b>	Continual and iterative <i>change</i> to the value dimensions of the BM, with a key focus on improving and modifying the value proposition and operating model to cope with uncertainty.	Generating new profit equation and firm survival; opportunity exploitation and exploration; transformative growth; competitive advantage; improving performance.	Voelpel et al. (2004, 2005); Johnson et al. (2008); Govindarajan and Trimble (2011).
<b>Value innovation</b>	Innovative <i>changes</i> targeted at all or part of the BM's dimensions, creating new and cutting-edge solutions and differentiation in a competitive landscape.	Differentiation, cost and competitive advantage; growth strategy, knowledge, and learning; generating and delivering value and performance.	Chesbrough and Rosenbloom (2002); Chesbrough et al. (2018); Kim and Mauborgne (2005); Sainio et al. (2011); Ritala et al. (2013); Leavy (2008)
<b>'As boundary objects'</b>	Boundary objects involve decision-making and other interactions with actors that reveal the plasticity of how BMs accommodate or coordinate <i>changes</i> in the BM.	Fosters entrepreneurial cognitive processing or structures and reveals coherence of the BM; promotes social exchange and coordination of activities with stakeholders; organization leadership and governance.	Doganova and Eyquem-Renault (2009); Shepherd et al. (2021); Doz and Kosonen (2010).
<b>BM reconfiguration</b>	A nuanced <i>change</i> pathway or approach aimed at incremental improvement to the BM to satisfy a specific goal; results in extensive BM change or adaptation of some parts of the BM.	Monitoring of key activities; knowledge conversion, support adaptation, and innovation; superior performance and competitive advantage.	Casadesus-Masanell and Ricart (2009, 2010); Clauss et al. (2020); Forkmann, et al. (2017); Calia et al. (2007).
<b>BM experimentation</b>	Iterative testing of one or more models with the aim of <i>changing</i> existing BMs or developing new ones. Trial and error changes are pursued along the various dimensions or components of the BM.	Learning, knowledge generation, flexibility, environmental adaptation; innovation, discovering and developing new models and products, process development; improving core competencies and monitor performance.	Bocken et al. (2019); Andries and Debackere (2013); McGrath (2010); Sosna et al. (2010); Rissanen et al. (2016); Bocken et al. (2019); Morris et al. (2005); Doz and Kosonen (2010); Eppler et al. (2011); Eppler and Hoffmann (2012);

<b>Dynamic BM</b>	Continuous <i>change</i> to initial or existing model of a firm's core processes or routines; firms and entrepreneurs leverage and learn from influences; the need to create or adapt to new and better ways of doing things.	Innovation, positive change, networking capability, problem-solving, and inter-firm knowledge transfer.	Mason and Leek (2008); Bouwman et al. (2006); Cavalcante et al. (2011); De Reuver et al. (2009); Schweizer (2005).
<b>BM evolution</b>	Sequences of (voluntary and emergent) <i>change</i> that comprises determined and/or emergent changes affecting individual components of the BM; incremental changes may lead to changes in the entire model.	Monitor BM and key processes; growth orientation; improve firm performance.	Aspara et al. (2011); Schweizer (2005); Demil and Lecocq (2010); Fritscher and Pigneur (2014); Saebi et al. (2014, 2017); Velu (2017); Lamber and Davidson (2013); Bohnsack et al. (2014).
<b>BM transformation</b>	<i>Change in the perceived logic of value</i> aimed at revitalizing the BM; the capability to change a BM effectively in alignment with the dynamics of the external business environment.	Understand entrepreneurial, cognitive, and strategic processes; learning, evaluating decision-making, developing organizational capabilities; consistency and performance.	Aspara et al. (2011, 2013); Zolnowski et al. (2016); Loebbecke and Picot (2015); Di Muro and Turner (2018); Dos and Kosonen (2010); Demil and Lecocq (2010);
<b>BM change models</b>	The core logic of how a firm introduces and implements <i>changes</i> to central components of its environment.	Generation of ideas; leverage opportunity to foster innovation; reconfiguration of the BM to improve performance.	Pateli and Gigalis (2005); Yip (2004); Osiyevskyy and Dewald (2015); Linder and Cantrell (2000).
<b>BM replication</b>	<i>Change</i> tactics require incrementally transforming and refining all or part of a BM or its components to reveal and develop the most suitable model.	Competitive edge, experimentation, growth and scalability, profitability, and performance.	Winter and Szulanski (2001); Dunford et al. (2010); Aspara et al. (2009).
<b>BM development</b>	Examines interdependencies in organizational activities, commitment, and engaging in both creating (new) and refining or <i>changing</i> (existing) BMs; involves simultaneous experimentation to validate the BM and find appropriate fit.	Initial growth, fit, competitive advantage, learning strategy, and optimization facilitate long-term survival, especially under uncertain; performance.	Vaskelainen and Münzel (2018); Zott and Amit (2008, 2010).
<b>BM renewal/redefinition</b>	BM changes that may incorporate strategic agility and sensitivity leadership actions and reconfiguring capabilities to accelerate renewal and the transformation of the BM.	Improved decision-making, performance, and leadership unity among top management teams (TMTs,) sharpening strategic agility and sensitivity; capability development.	Doz and Kosonen (2010). Sandström and Osbourne (2011)

### 2.3 Business model innovation as a form of change

There is a wide range of descriptions of business model innovation (BMI) among scholars due to the lack of a solid theoretical foundation of the concept (Teece, 2010; Foss and Saebi, 2017). BMI transcends the product and process innovation to encompass the “innovation of a system of products, services, technology, and/or information flows that go beyond the focal firm” (Clauss, 2017, p. 387). Until recently, most studies have discussed the BMI process conceptually or through case studies to gain a preliminary understanding of the phenomenon of BM change (Schneider and Spieth, 2013). However, with the recent development of measures (e.g., Clauss, 2017), a few studies (e.g., Harms and Schiele 2012; Asemokha et al., 2019; Hennart, 2021) have validated the importance of BMs in the international entrepreneurial journeys undertaken by SMEs.

BMI is described as a continuous reaction to changes in the environment (Demil and Lecocq, 2010), an ongoing learning process that uses trial-and-error processes of experimentation (McGrath, 2010; Sosna et al., 2010), and an evolutionary process (Dunford et al., 2010). Evidence from practice demonstrates that BMI may outweigh product, process, and service innovation as an avenue for long-term competitive advantage (Linder and Cantrell, 2000; Pohle and Chapman, 2006) and also positively influence entrepreneurial performance (Cucculelli and Bettinelli, 2015). Some of the factors that drive BMI include globalization activities, advances in technology (e.g., the internet and digitalization), and changes in customers’ behavioral trends, or even changing demographics and customer lifestyles (Bouwman et al. 2019; Nielsen et al., 2019). Foss and Saebi (2017) identify four streams of research in the BMI literature. The first focuses on *conceptualizing BMI* (e.g., definitions, dimensions, and other construct clarifications). The second view explores BMs as *organizational change processes* and focuses on altering capabilities, leadership, and learning mechanisms to foster successful BMI. The third focuses on BMI as an *outcome* by examining a typical BM change and the resulting organizational outcome. The fourth deals with the consequences and organizational performance implications of BMI, as well as the ambiguities that still exist within BMI research.

Amit and Zott (2010) abstract BMI as a process in which a firm designs a new or modifies an existing activity system, consciously renewing its core business logic. Their definition makes it clear that—rather than limiting the scope of innovation to just products or services—BMI leverages the capacity to integrate the fundamental elements of a BM, stakeholder relationships (e.g., with customers and networks), and the environment within which the firm functions. Foss and Saebi (2017, p. 216) describe BMI as a “design” of “novel and non-trivial changes to the key elements of a firm’s BM and/or the architecture linking these elements.” The design element is a function of top-management action: Non-triviality is aimed at minimizing minor changes, such as supplier activity, while novelty is intended to foster the dimension of innovation. Thus, studying BMI encapsulates substantial transformations by viewing short- and long-term perspectives based on three flowing processes: The first is the intuition to manage change in the firm’s external environment; the second is the capability to create new or modify existing value

offerings; and the third is the ability to provide novel solutions that reconfigure, create, deliver, and capture value (Foss and Saebi, 2017). BMs constitute the important dimensions of value creation, proposition, capture, and delivery (Teece, 2010; Clauss, 2017); each of these dimensions of BMs consists of multiple underlying activities (Osterwalder and Pigneur, 2010; Clauss, 2017). Variation, however, still exists in dimensionalizing BMI, even though there is a consensus on the main dimensions (Foss and Saebi, 2017). This leads to complexities and makes it difficult for scholars to measure the degree of BM change; for example, some studies have effectively argued that BMI may affect *a single dimension*, others argue that BM change can occur in *one or more dimensions*, and still others propose that *at least two and possibly more dimensions* change (Foss and Saebi, 2017, p. 12). Scholars claim that capturing BMI, or the degree of innovation, requires that all *three* of the primary dimensions must change (Winter and Szulanski, 2001; Johnson et al., 2008; Baden-Fuller and Haefliger, 2013; Clauss, 2017). It is little wonder, then, that Casadesus-Masanell and Zhu (2013, p. 480) describe the BM as a “slippery construct.

Table 2.2: Dimensions and Sub-constructs of Business Model Innovation (BMI).

Dimensions of BMI	Sub-constructs of value dimensions in innovation	Components
Value creation	New capabilities	Key activities: resources and competencies, leadership, core competence, information, people, relationships.
	New technology and equipment	Key resources: technology, equipment, resources and competencies, intellectual property, assets, finance, people.
	New processes and structures	Key activities: internal and external organizational processes and structures, activity system governance and structure, norms, rules, metrics, production, problem solving, value configuration.
	New partnerships	Key partners and alliances: supply chains, suppliers, customers (information), value networks.
Value proposition	New offerings	Key offerings: products and services, technology solutions, platforms, content, information, other outputs.
	New customers and markets	Key customers: segments, niches, markets (international and domestic), new targets, positioning, market presence.
	New channels	Key channels: value chain delivery and linkages, distributors, value communication and information, value support.
	New customer relationships	Key relationships: customer support and relationships, customer engagement, brand, co-creation, marketing and sales logic, customer acquisition and retention.
Value delivery and capture	New revenue models	Main revenue mechanisms or streams: pricing, monetization, estimation of profit formula, revenue volumes.
	New cost structures	Main structures: costs (fixed and variable), estimation of cost structure, margins, cost volumes, economies of scale, and scope.

Table 2.2 provides an outline of the BM dimensions adopted in this study. This study adopts the dynamic view of BMI and the conceptualization of organizational change process that requires appropriate capabilities. The international performance outcomes as a result of BM change are also explored. Scholars have dimensionalized BMI by its degree of *novelty* (Osterwalder et al., 2005; Johnson et al., 2008; George and Bock, 2012; Clauss, 2017). Foss and Saebi (2017, p. 217) categorize BMI in terms of *scope* (as

measured by the amount of architectural and modular change) and *novelty* (new to the firm and new to the industry). Consequently, developing four typologies (*complex BMI*, *evolutionary BMI*, *focused BMI*, and *adaptive BMI*) that BMI can follow. Although these typologies are relevant, the scope of this dissertation did not allow them to be explored in depth.

In this dissertation, Claus's scales are adopted to measure BMI. Claus (2017, p. 387) indicates that examining and "measuring changes or innovations of the BM requires that the underlying subconstructs are identified." Claus's scales use novelty to determine degrees of innovation. However, Foss and Saebi (2017, p. 212) note that it is unrealistic to expect BMI research to empirically account for all of the complicated mechanisms involved in BMI, given the field's present state of development. Thus, they suggest that a good starting point would be to collect cross-sectional data on BM changes and to regress the data against business performance, which was the approach taken in the qualitative phase of this study. The qualitative study also draws partly from Claus's scales to pose questions about BM changes; however, the qualitative elements did not focus on BMI. Instead, it examined all the key elements of BMs in general. Thus, the novelty dimension was not the key focus—meaning that the novelty and retrospective accounts were all favored to broaden insights about the scope of BM change. See the appendices for survey and interview questions.

## 2.4 Business models and international entrepreneurship

### 2.4.1 An overview on international entrepreneurial firms

Economic growth in the 1990s heralded an era of new opportunities for international entrepreneurs (Zucchella et al., 2018). During this time, business modeling became more prominent in management practice as a conceptual tool to capture the new types of ventures that arose due to the emergence of the internet (companies) or dot-com bubble (Nielsen et al., 2019). The evolution of BMs continues to attract scholarly attention with respect to the emergence of the internet and globalization, which are gradually rendering brick-and-mortar ways of doing business antiquated. Examples of the influences of globalization include economic changes (e.g., the deregulation of markets, the establishment of free trade areas, and cashless societies), technological advances that lower communication and transportation costs, digitization, and resource planning (e.g., outsourcing, transnational distribution, and the interconnectivity of financial markets), and, even more recently, telecommuting (i.e., remote work). Studies have shown that these influences are facilitating changes to the business routines of companies, allowing them to access and respond (e.g., provide faster services, delivery, and marketing) to consumers more easily or in real-time regardless of geographic location.

In essence, the "global economy has [almost] become a cliché" (George and Bock, 2012 p. 2), primarily because of these changing BMs, which have made the entire world both more familiar and more accessible. These developments have narrowed the gap between small- and large-firm activities and thus necessitate a deeper understanding of where,

how, and why entrepreneurial activities and behavior are undertaken (George and Bock, 2012; Zucchella et al., 2018; Tallman et al., 2014). Given that innovation, access to financial resources, advances in technology, digitalization, and proximity to the necessary resources and capabilities encourage entrepreneurial activities, it becomes increasingly challenging to grasp the dynamic activities of a firm or simplify them into conceptual boxes (George and Bock, 2012). Furthermore, International entrepreneurial ventures are bounded by their value generation activities and by actors that support value delivery and capture as they transition their business from home markets to the international arena (Child et al., 2017). Thus, it is important to reckon that the drivers and beneficiaries (entrepreneurs and stakeholders) of globalization (or our newly interconnected world) and economic growth cannot be ignored, as they are crucial in explaining the tacit activities that determine the trajectory of international entrepreneurial ventures. In other words, the dynamism of the global environment is setting the pace for how we understand internationalization, and it is high time that research efforts follow suit. IE as a theoretical lens fosters BM change exploration and vice versa because it lends structure to the discussion of firms that credit their foundation, growth, and performance to their internationalization.

Jones and Coviello (2005, p. 300) describe IE “as an evolutionary and potentially discontinuous process determined by innovation and influenced by environmental change, human-volution, action, or decision.” This definition typifies entrepreneurs or decision-makers who spearhead entrepreneurial action, especially amid environmental dynamics or concerns. This galvanizing role of entrepreneurs in the global environment has revolutionized the commercial landscape and profoundly impacted how we live, work, consume, transact, and even interact (Yunus et al., 2010). Research on international entrepreneurial firms was popularized by McDougall in the 1980s (with foundational work conducted in 1989). McDougall defined INVs as startups “engaging in international business and viewing their operating domain as international from initial stages of operation.” Since then, the phenomenon of IE has rapidly become its own discipline (Etemad et al., 2021), and significant contributions have been made to shed light on the entrepreneurial internationalization (Dimatrous et al. 2010; Steinhäuser et al., 2020) of young, small firms as well as their emergence and growth processes. Whether independently or collectively, different internationalization theories explain the internationalization patterns, antecedents, and outcomes of internationalizing entrepreneurial ventures and SMEs (Knight, 2001; Ruzzier et al., 2006; Hollensen, 2007; Kuivalainen et al., 2012). The emergence of IE research has led to increased interest in numerous venture types, such as *born globals*, *INVs*, *micro-multinational SMEs*, and *unicorns* (Vanninen et al., 2017; Urbinati et al., 2019). These venture types challenge the traditional international models of large multinational corporations (Johansson and Vahnle, 1977; Coviello et al., 2017). They thus lend credence to myriad theoretical concepts (e.g., the founder, decision-making logic, innovation, networking capabilities, and knowledge capabilities) that seek to explain entrepreneurial firms’ antecedents and performance outcomes (Laanti et al., 2007; Kuivalainen et al., 2012).

Firms are constantly seeking new opportunities abroad that will allow them to provide unique offerings to their customers (Rialp et al., 2005; Reuber et al., 2018). Like larger enterprises, smaller firms face internationalization challenges (Ruzzier et al., 2006) due to their comparative nascency and lack of experience and the value-driven motivations of entrepreneurs to deliver and capture value (Hollensen, 2007; Onkelinx and Sleuwaegen, 2008; Trimi and Berbegal-Mirabent, 2012). Recent studies have demonstrated that internationalizing ventures use their BM to grow and extend their business activities into new international locations (Hennart, 2021; Onetti et al., 2012; Child et al., 2017). Considering that internationalizing firms have a propensity to take more risks and use innovations to respond to international market needs, BMs keep firms in check to ensure that they adequately monitor the orchestration of required resources and capabilities for future sustainable performance (Oviatt and McDougall, 2005; Acts et al., 2011). BMs thereby serve as boundary objects that allow entrepreneurs to achieve coherence, succinctly encapsulate the essential features of their value offerings, identify their target customers, determine how to approach them, and provide value to them (Doganova and Eyquem-Renault, 2009; Shepherd et al., 2021).

IE focuses on three research agendas; comparative entrepreneurial internationalization, international comparisons of entrepreneurship, and entrepreneurial internationalization (see Jones et al., 2011; Zucchella et al., 2018). International entrepreneurial firms can be studied from the perspective of three broad questions: *what*, *who*, and *why* (Zucchella et al., 2018). The *what* question is centered on the formation and exploitation of opportunities (Zucchella et al., 2018), eloquently described as the discovery, enactment, evaluation, and exploitation of opportunities across borders and aimed at creating future goods and services (Oviatt and McDougal, 2005). The *who* question focuses on the ventures' founders, whose decision-making drives action for growth and opportunity exploitation and exploration, consequently extending the discourse and relevance of EO expressed as the proactiveness, innovativeness, or risk pre-disposition of firms (Covin and Slevin, 1991) and their entrepreneurs who accompany opportunity formation and exploitation across international borders (Zucchella et al., 2018). The *why* question, on the other hand, unravels the influence of factors such as, globalization, technology advancements, regulations, and other related activities.

Numerous studies define the boundaries of IE, characterizing them by different typologies and archetypes of ventures that are considered to be at the core of IE research (Rialp et al., 2015). While these research efforts have contributed tremendously to IE as a research field, studies have revealed a levelling of the playing field and increasing research efforts (as a result of the globalization factors mentioned above) covering an extensive array of international entrepreneurial firms (Rialp et al., 2015; Dabic et al., 2020). IE discourse continues to make progress in definition and conceptualization shifting the discussions to include e.g., international opportunities (Kontinen and Ojala 2011; Mainela et al. 2014); international entrepreneurial orientation, (Covin and Miller 2013), richer contexts (Jones and Casulli 2014,), decision-making (Harms and Schiele 2012)—irrespective of the size, age, or industry of the firm (Dimitratos and Jones, 2005). Revisions to the literature have demonstrated that firms leverage the increasing involvement of their networks and

relationships to accelerate their internationalization agenda (Johanson and Vahne, 2009; Mort and Weerawardena, 2006).

Small firms are nowadays also exhibiting international entrepreneurial behavior, due to increasing globalization engaging in internationalization activities from the early stages of venture creation, debunking traditional incremental approach to internationalization—which is largely depended on the gradual accumulation of experiential knowledge of foreign markets and the progressive reduction of physical distance (Johansson and Vahne, 1977, 2009). Examples of these types of ventures include rapidly internationalizing firms, global start-ups, internationalizing SMEs, and early internationalizing firms (Ruzzier et al. 2006, Rialp et al., 2015). Internationalizing SMEs (like other international ventures) deploy similar flexibility characteristics that favour BM change, development, and adaptation as they explore and exploit opportunities and aim to improve performance (Kalinic and Forza, 2012; Child et al., 2017). Thus, without dismissing the overlaps in SMEs and IE research, studies have shown that small internationalizing entrepreneurial ventures that may exhibit entrepreneurial behavior are also identifiable under the IE umbrella. Thus, this study acknowledges that although IE research began by studying the internationalization of new ventures (INVs), the scope has since broadened (Oviatt and McDougall, 2005, pp. 537-538). As a result of competitiveness, innovation and renewal strategies have become paramount for the survival of both new and established international entrepreneurial firms (Oparaocha, 2015).

The diversity of (international) entrepreneurial activity and growth depends on different national and institutional (formal and informal) environmental situations (Bowen and De Clercq, 2008; Oparaocha, 2015) and country contexts (Landau et al. 2016; Child et al., 2017). What sets entrepreneurs apart from non-entrepreneurs is the typical character, initiatives, and capability they show in leadership, as well as how they spearhead initiatives that accelerate growth and control over their future (Cavalcante et al., 2011; Zucchella et al., 2018). Furthermore, international entrepreneurial motivations, experiences, and values vary across different cultural contexts. Thus, the behavior and activities of entrepreneurs and their firms are bound to multiple forms of context (Massa et al., 2017; Shepherd et al., 2021). Thus, beyond the general characteristics of entrepreneurs, each country's national and economic climates and political and legal institutions differ (Oparaocha, 2015), enabling or hindering the evolution of internationalization processes. Moreover, in discussing the notions of necessity- versus opportunity-driven opportunity, Zucchella et al. (2018) report that (international) entrepreneurship in a developed country is driven by industrialization, innovation, and the improvement of existing opportunities, whereas in developing countries, an international opportunity may be driven more by necessity (Mortazavi et al., 2021; Musona et al., 2020). Clearly, the determinants of these two types of opportunity would be different. More studies are needed to discuss the opportunity in different countries and market contexts based on these realities. While this may exceed this study's scope, it is important to point out that examining BM change BMs can illuminate research avenues in varying industrial or location contexts (Onetti et al., 2012; Child et al., 2017).

### 2.4.2 Why linking IE and BM literature matters

BMs emerge at the embryonic stages of a new venture during, for example, the invention of a product or a service development in commercialization or even the onset of internationalization. These stages are pivotal in the exploration of entrepreneurial firms due to their financial, resource, and other capacity and capability constraints (Trimi and Berbegal-Mirabent, 2012). The function of a BM is to articulate the value proposition by, for example, selecting the requisite technologies and features, identifying targeted market segments, defining the structure of the value chain, and estimating the cost structure and profit potential (Chesbrough and Rosenbloom, 2002, pp. 533–534). Therefore, entrepreneurs may rely on bounded rationality decision-making to address uncertainty and market imperfections as they seek opportunities. These decisions lead to changes in the BMs of firms (Drucker, 1988).

The BM literature provides supporting and contextual answers to *why* firms behave the way they do by assessing the *what*, *who*, and *how* questions. This is because the purpose of the BM discussion is to clarify *what the customer values, who the customer is; who is needed or needs to be eliminated to make, create, or deliver value, and how we can ensure that value is delivered and to the customer as well as how much money can be captured through the value proposition* (Magretta, 2002; Osterwalder, 2005). International entrepreneurial managers can build on these questions to clarify how their business functions. Answering the questions above facilitates gaining useful information on the decisions, initiatives, and core-routines about the entrepreneurial firms and their operations (Magretta, 2002; Cavalcante et al., 2011)—thereby contributing to the IE research agenda.

Companies already operating abroad have a keen global focus on the value dimensions of their BMs; hence work to develop their business to enact strategic opportunities and growth initiatives (Sainio et al. 2011; Tallman et al., 2014, Rissanen et al., 2020). For entrepreneurial firms seeking to expand into international markets, leveraging the business model becomes particularly expedient (Doganova and Eyquem-Renault, 2009; Child et al., 2017; Rissanen et al., 2020). Therefore, the BM (change) and IE perspectives could enrich our understanding of how entrepreneurial firms thrive, illuminating firms' organizational, operational, and strategic activities (Osterwalder et al., 2005; Onetti et al., 2012). In other words, combining these two emerging but distinct research (BM and IE) streams will broaden and provide nuanced inquiry into both research perspectives (Ahokangas. and Myllykoski, 2014; Osterwalder et al., 2005; Hennart, 2014). Consequently, the interplay between internationalization and global entrepreneurial activities is at the nexus of IE and BM research (Oviatt and McDougall, 1994, 2000; Kuivalainen et al., 2012; Child et al., 2017; Nielsen et al., 2019). Moreover, as firms strive to prosper, managers need to ensure the *fit* and coherence of their BM by designing the content, structure, governance, and channels to ensure that value is captured and disseminated accurately (Amit and Zott, 2001; Shepherd et al., 2021). Thus, BMs can be used as boundary objects (Doganova and Eyquem-Renault, 2009) with the capability to

describe how a firm embeds itself or interacts within its international environment (Shafer et al., 2005; Zott and Amit, 2008; Teece, 2020).

Opportunity is a central and relevant concept that links BM and IE (Ahokangas and Myllykoski, 2014; Eckhardt, 2013). Opportunity “is the foundation in the entrepreneurship dimension, and the cross-border behavior of firms which demonstrates the ‘internationality of the opportunity’” (Mainela et al., 2018, p. 2). However, just like in the study of international entrepreneurial firms, BMs are opportunity-centric (George and Bock 2011). This opportunity centrality of BMs like in IE also allows a keen focus on answering what, how, why, and where questions—all targeted toward clarifying value proposition capture and delivery (customers and stakeholders and earning logic for the firm) of international entrepreneurial firms (Ahokangas and Myllykoski, 2014; Osterwalder et al., 2005, 2010, Rissanen et al., 2020). As a result, the lucrateness of an opportunity in practice can be exploited or explored through the BM (Zott and Amit, 2005; Child et al., 2017). Hence, instead of merely exploiting new ideas, innovative entrepreneurs designing their companies around BMs can allow internationalizing firms to identify and make sense of unlikely opportunities. This clarifies the complementarity of BMs and IE, as both concepts explicate deeper meanings of key entrepreneurial behaviors and actions, which provide explanations for international growth and performance.

### 2.4.3 IE perspectives as a lens to elaborate BM change

#### *The individual as a driver of BM change*

The role of the individual as the initiator and designer of change in the core processes that shape the development, transformation, and conformity of their ventures to international contexts, has not been extensively examined in either the BM literature (Coviello and Tanev, 2017, Ojala 2016, Cavalcante, 2014). Studies point to the conceptualizations of BMs as abstractions that embody principles supporting the development of the core repeated processes of an organization while also emphasizing entrepreneurial cognition and individual action as drivers of BM change initiatives (Cavalcante, 2014; Massa et al., 2017, Shepherd et al. 2021). Previous studies have mostly focused on the BM as an isolated construct (Stampfl and Prügl, 2011) without fully considering the context and role of decision-makers and how their decisions affect the (re)configuration of BMs as firms go through the stages that lead to internationalizing: “If we want to understand why organizations do the things they do, or why they perform the way they do, we must consider the biases and dispositions of their most powerful actors—their top executives” (Hambrick, 2007, p. 334). Thus, entrepreneurs’ mental frameworks, experiences, and values influence how they interpret their context of doing business, make decisions, and approach new opportunities in risky and uncertain environments (Shane and Venkataraman, 2000; Hambrick, 2007; Maine et al., 2015; Dasí et al., 2015).

Entrepreneurs can be seen as the sense-makers of the creation and evolution of their BMs (Teece, 2010; Massa et al., 2017). This is because their cognitive schemas or mental

framing determine how they perceive opportunities, interpret and change to acclimatize to the environment they find themselves. By extension, international enterprises and entrepreneurs have been called instruments of change and even a panacea for environmental and social concerns (Del Baldo and Baldarelli 2017; Oviatt and McDougall, 1994; Zucchella et al., 2018) because they actively participate in collaboration with other actors to design transformative change (Cavalcante, 2014). The uniqueness of each entrepreneur and his or her approach to doing business stem from personal characteristics, past experiences, career experiences, motivations, and visions, all of which emanate from the sense-making contexts of actions and prospects (Zahra et al., 2014 Milanov and Maissenhalter 2015). Accordingly, studies have distinguished entrepreneurs based on their human and social capital profiles (i.e., educational, and professional background, networks, previous business ownership), behavioral differences (Ucbasaran et al., 2001; Zahra and George, 2002), management styles, and approaches to opportunities and transitional experiences as individuals move from one place to another (Mainela et al., 2014; Korhonen and Leppaho 2019).

Regardless of their size, age, or geographic location, international entrepreneurs play a significant role in recognizing, evaluating, and exploiting opportunities (Ucbasaran et al., 2011; Zahra et al., 2014; Landau et al., 2017). Limited resources and finances, limited marketing competence, cultural barriers, high production, and logistical costs affect internationalization speed and efficiency (Kuivalainen et al., 2012, 2015; Buckley and Prashantham, 2016). These entrepreneurs use their strengths (high education, flexible organizational culture, international orientation, superior technology in emerging industries) to create new value propositions that shape or respond to existing international opportunities. The role of entrepreneurs is recognized as a support structure and an essential variable (Miesenbock, 1988) due to their ability to match a firm's organizational strengths, offset threats, and capitalize on opportunities as they transition from one market context to another. However, how these individuals navigate their value mechanisms to capitalize on new opportunities and scale into international markets remains under-researched and can be potentially understood through BM research (Hennart, 2014, 2021).

Entrepreneurs' cognitive processes, structures, and behaviors are shaped by their prior experiences, which have implications for the pre-start-up and start-up mindset (Milanov and Maissenhalter, 2015; Korhonen and Leppaaho, 2019). In addition, entrepreneurship and new venture creation are often de-contextualized in both scholarly and practitioner accounts, both of which reveal the need for more studies that could capture or transcend context (Hjorth et al., 2008; Brannback and Carsrud, 2016). Contextualization uncovers the underlying entrepreneurial phenomena across all facets of organizational analysis (Hjorth et al., 2008) and explains the multidimensionality of entrepreneurial activities (Zahra et al., 2014). In a broad sense, the term "contextualization" in this study means placing the entrepreneurs and their ventures into their "natural settings to understand their origins, forms, functioning, and diverse outcomes" (Zahra et al., 2014, p. 481). Context encompasses the "dynamic array of factors, features, processes or events that influence a phenomenon that is examined" (Michailova, 2011, p. 130). Scholars have noted that

“contextualization fosters creative and novel analyses and explanations by situating phenomena, research questions, theories, and findings in their natural setting” (Zahra et al., 2014, p. 480). By the same token, the cognitive schemas of BMs have been identified as instrumental to explaining how BMs are interpreted in the minds of managers or organizational members and their role in social actions, including organizational sense-making, environmental scanning, and sensing opportunities (Massa et al., 2017). Thus, there is a need to explore the internationalizing entrepreneur’s all-encompassing role, prior contextual experiences, and cognitive schemas (Milanov and Maissenhalter, 2015; Massa et al., 2017) while looking at the configuration and reconfiguration of their BMs.

Because international entrepreneurs and the context in which they operate are heterogeneous, the firms and routines they create are always context-bound. Contextual knowledge contributes an essential underlying dimension of IE to further explain BM creation and change. By contextually investigating SME internationalization activities and the micro-processes of ventures, a researcher can map out and understand how international entrepreneurs make decisions and seize opportunities; in other words, how SMEs recognize new or leverage existing opportunities and link them to BM changes and various performance outcomes (Zahra et al., 2014).

#### *Entrepreneurial orientation (EO) as an enabler of BM change*

EO emerges from the intersection of strategic management and entrepreneurship research (Covin et al., 2006; Hakala et al., 2011; Simon et al., 2011). EO refers to the practices, processes, and activities in which firms or entrepreneurial entities become involved in making decisions that culminate in innovation and market entry decisions (Lumpkin and Dess, 1996, 2001; Wang, 2008). Hakala (2013) described EO as a strategic orientation that captures the entrepreneurial aspects of a firm’s strategies. The EO literature allows us to understand and explore a firm’s entrepreneurial journey and how managerial behavior and identity influence how managers navigate uncertainty in the international market and environmental situations (Korhonen and Leppaaho, 2019). The EO of a firm encourages the generation of new ideas and creative processes that improve a firm’s competitive position and performance (Covin and Slevin, 1989), which is crucial to a firm’s ability to survive and deal with environmental challenges and uncertainty (McCrea and Betts, 2008; Simon et al., 2011). Several scholars have argued that although EO supports international performance, the extent to which it improves a firm’s performance may be complicated (Lumpkin and Dess, 2001; Wiklund and Shepherd, 2005; Covin et al., 2006; Rauch et al., 2009; Simon et al., 2011). These scholars have suggested that the EO–performance relationship can be strengthened by additional factors and by examining the actions and processes in which firms engage to achieve their core objectives.

EO in the internationalization context is a significant characteristic of managers in rapidly internationalizing firms. It is also an essential managerial and firm-level antecedent that influences how SMEs internationalize and entrepreneurial activity in general (Kuivalainen et al., 2012). The EO of a firm is a behavioral characteristic that affects firm-level strategic orientation and influences several outcome variables, including firm

performance and venture growth (Peiris et al., 2012). Although some studies have not found a strong relationship between EO and the degree of internationalizing (Jantunen et al., 2005), most studies have shown that EO is a relevant antecedent to the rapid internationalization of SMEs and that the mediating effect of BMI leads to positive performance outcomes. A positive relationship between the entrepreneurial and international orientations and strategies adopted by a company impacts the firm's level of innovation and flexibility (Knight, 2001; Knight and Cavusgil, 2004). The role of entrepreneurs and their BMs as a sole or complementary unit of analysis enriches our understanding of the inner workings of a business and its activities (Teece, 2010; Pohle and Chapman, 2011; Zott and Amit, 2011). In other words, without heterogeneously analyzing entrepreneurs' orientation and how they interact with their customers and the broader context in which they initiate and lead their firms, we are left with an incomplete picture of the very core of entrepreneurship and BM creation and change (Ucbasaran et al., 2001).

Given that internationalizing SMEs exist in globalized and uncertain market environments that are rapidly changing, leading to shortened BM lifecycles, a flourishing EO requires discipline and flexibility (Simon et al., 2011), thereby providing the possibility of being more innovative and changing the BM to fulfill internal and external business and market requirements. Studies have suggested that maximizing the effectiveness of EO is crucial for firm performance, but it requires risky, innovative, and proactive initiatives and even aggressive behavior (Miller and Friesen, 1982), which may demand extensive use of scarce resources and capabilities (Wilkund and Shepherd, 2003; Jantunen et al., 2005; Rauch et al., 2009). Overall, firms need to consistently recognize new opportunities and innovate their BMs whenever needed to sustain revenue (Callaway et al., 2009; Simon et al., 2011). Managers must actively adopt procedures and processes that help them overcome challenges and resistance as they grow in business and confront dynamic market settings (Hisrich and Peters, 1986; Lumpkin and Dess, 1996; Wiklund and Shepherd, 2003). Scholars have asserted that the EO of SME entrepreneurs affects the extent to which firms can achieve and sustain their long-term objectives (Rauch et al., 2009; Simon et al., 2011) because small firms are more flexible, fostering the ability to be entrepreneurially oriented. They leverage that orientation to discover new opportunities and innovate products or BMs, which improves their competitive advantage and performance (Slater and Narver, 1995; Wilkund and Shepherd, 2005; Rauch et al., 2019).

#### *Decision-making logics and BM change*

During the ideation and start-up or inception phases of a new venture, entrepreneurs must establish the boundaries of their business and define its value proposition and subsequent routines (Osterwalder et al., 2010; Trimi and Berbegal-Mirabent, 2012) and internationalization activities. This is because the BM is the value creation and capture framework through which the commercialization of an idea, innovation, product, or service occurs (Chesbrough, 2010; Spieth and Schneider, 2013). Thus, in a firm's start-up phase, the entrepreneur must make sense of his or her venture transitions to create a

scalable and profitable venture. During this process, leveraging the flexibility (Cavalcante et al., 2012) and practicality of BMs is expected to support entrepreneurs in making better and more fully informed decisions about exploiting new opportunities, properly orchestrating resources, and mitigating threats to more successful outcomes (Osterwalder et al., 2010; Trimi and Berbegal-Mirabent, 2012).

The same holds true for successful, established ventures. Studies have attested that even well-established and successful firms do not conform to the status quo or adhere to a permanent given (Lindgardt et al., 2009). Instead, companies seek new and superior technologies, capabilities, and resources to compete rather than basking in their short-term triumphs (Doz and Kosonen, 2008; Amit and Zott, 2010). Investigating entrepreneurial decisions offers more potential to scrutinize the strategic role of human agency, especially in response to uncertainties, goal ambiguities, and enactments in international markets (Chesbrough, 2010; Gabrielson and Gabrielson, 2013). Decision-making by entrepreneurs has a vital influence on the internationalization actions of SMEs; for example, it may influence entry mode choices when expanding international operations (Harms and Schiele, 2012; Child et al., 2017). Drawing on decision-making perspectives allows scholars to delve into how entrepreneurs control, predict, and explore opportunities, resources, and capabilities to generate value (Sarasvathy, 2001; Perry et al., 2012). Studies have highlighted that an important influence on BM change in SMEs is effectuation: the means-driven entrepreneurial logic often evident in entrepreneurial ventures and based on the principles of affordable loss, experimentation in business activities, and controlling rather than seeking to predict the future (Sarasvathy, 2001; Fütterer et al., 2018). Effectuation has been linked to the degree of BM change in SMEs in general (Torkkeli et al., 2015) and to the internationalization of smaller companies (e.g., Kalinic et al., 2014; Galkina and Chetty, 2015).

#### *Recognizing international opportunities and BM change*

The internationalization of new ventures is fostered through access to foreign market knowledge, market resources, and capabilities, and via the recognition of valuable opportunities and constraints (Oviatt and McDougal, 2005). Opportunity recognition is an essential initial element of a venture's creation process (Chandra et al., 2009), and the opportunity development process underlies the international expansion of both rapidly and gradually internationalizing enterprises (Chandra et al., 2012; Reuber et al., 2018; Venkataraman, 1997). However, an entrepreneur's ability to recognize international opportunities in the initial phase is a continuing process, as the opportunities that are recognized still need to be evaluated and continually developed to become profitable and tangible value propositions (Ardichvili et al., 2003; George and Bock, 2011; Mainela et al., 2014).

Drawing from the opportunity-focused behavioural perspective in IE is an important avenue for observing entrepreneurial actions in the creation of new BMs, irrespective of organizational context (Cavalcante et al., 2011; Mainela et al., 2014). This dissertation explores internationalizing SMEs and the modifications they make to their BMs as they

pursue international opportunities in uncertain market environments (Sarasvathy, 2001, 2004; Gabrielsson and Gabrielsson, 2013). The entrepreneurs' frame of reference and cognitive schemas impact their BM and the changes they implement, which can create a vicious circle. As mentioned above, the managers' decisions and actions affect the international activities of firms and their BM development (Gabrielsson and Gabrielsson, 2013; Child et al., 2017). Thus, managers reflect on their thinking patterns from their narratives of how their venture came to be and how they identify and seize opportunities, resources, and capabilities that facilitate their internationalization process (Jones and Casulli, 2014). This type of information is vital to understanding BM ideation, which can strengthen the conjecture about how firms identify or exploit opportunities (Eckhardt, 2013).

Moreover, the mental frames of entrepreneurs provide insights into BMs and the changes occurring within them: first, by reflecting on the intentions, knowledge structures, and judgments used in the evaluation of opportunity; second, by unearthing the decisions to which bridge thinking leads; and third, by unveiling the reasons behind the focus, locus, and modus of the entrepreneur's internationalization approach and operating model (Onetti et al., 2012; Milanov and Maissenhalter, 2015; Massa et al., 2017). Thus, this understanding of how managers' decisions and underlying schemas can potentially illuminate the opportunities recognized and the proclivity of internationalizing firms to change their BMs as a result. According to George and Bock (2011), entrepreneurship is framed on three main vectors. The first is the enabling or constraining environment of the home or host market, both of which provide stimuli that provide either favorable environments to pursue international opportunities or hostile environments, pushing firms to seek opportunities elsewhere. The second is the opportunity potential or the exploration and exploitation process. Lastly, entrepreneurial activities' earnings and performance potential involves pooling resources for orchestration and identifying and exploiting opportunities to generate profits. Thus, both BMs and international opportunity concepts provide key arguments to deepen our understanding of the intersection between BMs and IE (George and Bock, 2011; Mainela et al., 2014). While the conceptual arguments about opportunity are multifaceted, scholars have agreed that opportunities must first be recognized (Hulbert et al., 1997), after which they can be exploited. Recognizing opportunity goes hand in hand with entrepreneurial alertness (Kirzner, 1979) and the capability to identify new profit potential by establishing a new venture or, better still, modifying an existing venture (Christensen et al., 1994). However, having established that opportunity is identified in response to a need (Hulbert et al., 1997), opportunity recognition may only progress further when entrepreneurs can identify the resources or capabilities needed to help satisfy that need (Mainela et al., 2014).

In practice, firms may fail to flourish despite the presence of market opportunities, new business ideas, sufficient resources, and talented entrepreneurs (Morris et al., 2005). Moreover, scholars have suggested that when an opportunity is uncertain, it becomes difficult to rationally determine the optimal BM (Heirman and Clarysse, 2004). Failure to promptly recognize, explore, seize, and exploit valuable opportunities usually occurs because managers lack the commercial approaches and capabilities needed for their BMs

(Cavalcante et al., 2011). The early phases of small venture creation face the daunting task of (re)designing or (re)configuring their BMs for international markets. Entrepreneurs who run these ventures must also be sensitive, proactive, and innovative, carefully identifying the central components (value creation, delivery, and capture mechanisms) of initiatives that support the reconfiguration of the BM and leverage new international opportunities. Thus, managers actively channel the firm's activities to function in accordance with the BM. As a result, they are most likely to be profitable, to undertake good initiatives, to make sound decisions, and to benefit from useful data, information, and feedback from the international market (Morris et al., 2005).

Thus, not all recognized opportunities create superior performance; instead, entrepreneurs are required to be proactive, take appropriate actions, and exploit recognized opportunities to gain and maintain competitive advantage (Ireland et al., 2003; Ketchen et al., 2007; Guo et al., 2017). Opportunities can be recognized by actively searching or responding to customer demands and inclinations. Thus, not all identified opportunities may be immediately scaled or exploited (Guo et al., 2017). Moreover, international opportunity recognition (IOR) can be fostered through the founder's contacts, and partners' relationships generally play a vital role in seeking new customers abroad. Hence, investigating BM modification from the IE or managerial perspective is essential for exploring BMs in-depth (Magretta, 2002).

#### **Networking capability enabling business model (BM) change**

Dynamic capabilities reflect managerial actions and are influential in the internationalization and recognition of opportunities (Andersson and Evers, 2015, Teece et al., 1997). The DC perspective offers a point of departure for internationalizing ventures since both BM change and the exploration and exploitation of international opportunities stem from managerial and organizational underpinnings directed toward change or growth or change without growth (Adner and Helfat, 2003; Anderson and Evers, 2015; Teece, 2018). The DC perspective is suitable for exploring the role of networks in the internationalization of firms and how managers transform international opportunities into value in a BM. The concept of networks concentrates on interlinked relationships both at the organizational and individual levels and is further characterized by close collaboration and the sharing of information with different actors, all of whom are dependent on one another (Torkkeli et al., 2016; Solberg and Durrieu, 2006). These networks and actors include various vertical and horizontal relationships, alliances, and partnerships with entities such as customers, distributors, suppliers, competitors, and other market actors (Gulati et al., 2000) aimed at achieving mutual benefits (Chetty and Holm, 2000). By the same token, the different actors in a network, ranging from immediate partners to final consumers, are connected by institutional technical, social, cognitive, administrative, legal, economic, and even personal ties (Solberg and Durrieu, 2006; Oparaocha 2015 Torkkeli et al. 2019).

Thus as SMEs identify international opportunities, they use their interpersonal and inter-organizational relationships and alliances to manage risks and optimize their BMs

(Osterwalder and Pigneur, 2010) to gain access to resources possessed by other actors in the international market (Gulati, 1998; Walter et al., 2006).

Studies have shown that firms may leverage networks as an important DC in sourcing foreign market information and knowledge (Coviello and Munro, 1995) and as a bridging mechanism that fosters the internationalization of a firm (Johanson and Mattson, 1988). Reypens (2016) suggested that network collaborators co-create value by coordinating their collective resources, capabilities, knowledge, and actors. By implication, when firms and their coalitions feed off one another's resources to compensate for their inadequacies, they create a mutually symbiotic environment that minimizes their inadequacies and facilitates growth, opportunity exploitation, and performance improvement. However, given that the agendas of network collaborations may diverge, entrepreneurs need to be strategic when engaging in interdependencies that foster long-term value and independence in the long run. Furthermore, studies highlight the synergistic that "the role a firm (and entrepreneurs) chooses to play within its value network is an important element of its business model" (Shafer et al., 2005, p. 202). Performance outcomes in new markets are improved when internationalizing firms rely on their networking capability to develop relationships with their partners, suppliers, and other connections to augment their resource and knowledge constraints to ensure positive outcomes (Coviello and Munro, 1995; Giensen et al., 2007).

Engaging with reputable partners supports the coordination of communication and the provision of skills and resources to the focal firm as needed, constituting and contributing a DC that facilitates the exploration and exploitation of recognized international opportunities (Weerawardena et al., 2007; Knight and Liesch, 2016). Furthermore, networking capability demonstrates that entrepreneurs have the relevant experience and acumen to select appropriate partners and suppliers to facilitate their routines and value chain activities (Sainio et al., 2011). As a result, entrepreneurs are expected to be sensitive to their own inadequacies and make necessary improvements or seek external support from their networks when needed. The interrelation between BMs and network relationships may contribute to the strategic designs and determining factors of the accelerated internationalization of SMEs (Weerawardena et al., 2007), which are critical to considerations in the formation and design of successful BMs (Onetti et al., 2012).

Studies also point out that positive effects of network ties in BMs may facilitate internationalization, especially of small firms (Child et al., 2017). Networks may also predict BM change: For instance, Mason and Spring (2011) linked network architecture to BM design, while Mason and Leek (2008) posited BMs as both network-embedded and network-emergent phenomena. Therefore, the extent to which companies can develop and manage their business network relationships may be linked to their success in further developing their BMs. A firm's networking capability and position within the network are beneficial determinants in its process of internationalization. The value chain and networking activities of international ventures also need to be further examined in conceptualizations of BMs (Onetti et al., 2012) For example studies describe the BMs of firms as closed or open (Chesbrough, 2006; Frankenberger et al., 2013). Closed BMs

focus on value creation without relying on partners, whereas open BMs are networked in nature and involve external resources more deeply. Indeed, the importance of networks in closed with open BMs should be further investigated based on value chain activities as it can potentially inform about different international enterprises in operating from different contexts (Frankenberger et al., 2013). For example, Bankvall et al. (2017) also highlights that networks and the interaction between the focal firm and its network partners could be regarded as the “engine” that facilitates change in BMs. Thus, the ability to innovate the BM such that it can integrate business network relationships is a critical consideration in the formation and strategic design of successful BMs (Onetti et al., 2012). Given the relevance of networks, there is a need for research on how networks as a dynamic capability of entrepreneurial firms affects the development or viability of the BM and the willingness to change the BM to effectively exploit recognized international opportunities and/or the implications of these factors for performance.

This study adopts network capability to illuminate the implications of using external actors and how they support SME internationalization and performance. At the organizational level, networks as a capability or competence are divided into dyadic (relationship-specific) and network-level (cross-relational) competence (Ritter, 1999; Ritter et al., 2002; Torkkeli et al., 2012). Relationship-specific competence refers to developing and managing individual and dyadic business relationships in the network and includes abilities such as initiating new relationships, facilitating the exchange of general and confidential knowledge in the relationship, and coordinating the direction of the relationship (Ritter et al., 2002; Torkkeli et al., 2012). Meanwhile, the cross-relational competence captures the company’s ability to “manage the network”; for example, planning the inclusion of new relationships to fit the entire portfolio of network relationships. The other dimensions of cross-relational network competence relate to staffing, organizing, and controlling all of the established network relationships to benefit the company as a whole (Torkkeli et al., 2012). However, while this study does not go into the intricacies and dimensions of networks, networking capability was viewed all-encompassing dynamic capability integrating the perks of both relationship and cross relational competences.

This notion establishes the relevance of networking as both an individual- and firm-level competence or capability that supports a firm’s internationalization process in all ramifications. Network capability has been outlined as the ability of a firm to develop and manage relations with key suppliers, customers, and other organizations to deal effectively with the interactions amongst these relations (Ritter et al., 2002). Thus, given the argumentation presented above, network capability may act as an antecedent to the BM change of companies in general. Moreover, due to a company’s need to access network resources to effectively internationalize into new markets, it can be considered a DC (Teece et al., 1997) and has a role in SME internationalization (Torkkeli et al., 2012). Studies have supported the view that, through networking, internationalizing companies gain several benefits: a spectrum of international opportunities (Coviello and Munro, 1995; Torkkeli et al., 2012), increased social capital that enables the acquisition of

external knowledge (Yli-Renko et al., 2001), and access to resources that are vital to foreign market entry.

#### *BM change and international performance implications*

The development of BMs comprises various managerial choices and the consequences of these choices, all of which influence the firm's value creation and capture activities (Casadesus-Masanell and Ricart, 2011). Afuah and Tucci (2003) highlights that the roles of both the "business model" and "change" are important determinants for performance. They stated that while the role of change may be more indirect than direct, change nevertheless impacts BMs or their environments, which can be translated into higher or lower profitability (Afuah and Tucci, 2003, p. 12). Thus, a firm's ability to proactively develop the capabilities that facilitate domestic and international growth is stimulated by preparatory strategic adjustments and the capacity to initiate changes and improve performance and competitive advantage is vital (Jantunen et al., 2005; Teece, 2010, 2012). Studies have suggested that the international performance of SMEs depends heavily on their ability to adapt to new developments, structures, and processes (Protcko and Dornberger, 2014; Bianchi et al., 2017). Business continuity and performance in dynamic international environments are determined by entrepreneurs' ability to interpret activities in these dynamic environments and, subsequently, to develop abilities and implement changes to navigate market uncertainties and turbulent times in the face of resource scarcity (Zott, 2003; Zahra et al., 2005, 2006).

The BMs adopted by firms in the domestic market may not be applicable to foreign markets (Child et al., 2017). Internationalizing SMEs that are introducing new goods and services or are simply exploiting opportunities may have to modify their BMs in line with target foreign market expectations (Vithessonthi and Thourrungrroje, 2011; Child et al., 2017). Managers are expected to adapt their domestic BMs to satisfy international market requirements and contexts (Onetti et al., 2012; Landau et al., 2016; Child et al., 2017). Therefore, BMs should be flexible enough to accommodate change and ensure sustainable performance over time (Berghman et al., 2006; Demil and Lecoq, 2010; Mezger, 2014; Teece, 2018). Teece (2018) also noted that BMs often must be fine-tuned and sometimes completely overhauled to remain profitable. Therefore, to implement a scalable BM across borders, it is critical to identify the intended target market or segment to pursue and to possess the capabilities needed to modify and combine elements of the BM to achieve a unique calibration of opportunities, differentiation, and competitive advantage (Teece, 2018).

The implications of BM changes for performance are especially important in the exploration of BMI and other change-related concepts (Foss and Saebi, 2017). The performance implications and outcomes of change are relevant as both qualitative and quantitative measures because they offer an idea of the impact and relevance of implementing change. For example, Cucculelli and Bettinelli (2015) found that firms that modified their BMs over time and in an innovative way experienced positive effects on venture performance. For example, Lindgardt et al (2009), demonstrated that BMI is a

valued approach that managers can proactively adopt when exploring new ways to tackle competition. However, some studies have highlighted that recognizing and seeking to exploit market opportunities may not always lead to superior performance (Guo et al., 2017). These arguments largely favor a firm’s ability to succeed in international markets as a result of the effectiveness of its BM (Hennart, 2014), which has been positively linked with performance (Doz and Kosonen, 2010; Onetti et al., 2012; Child et al., 2017).

Figure 2.1 demonstrates the theoretical lenses used in the study. The framework shows how the different theoretical lenses that drove the study is linked.

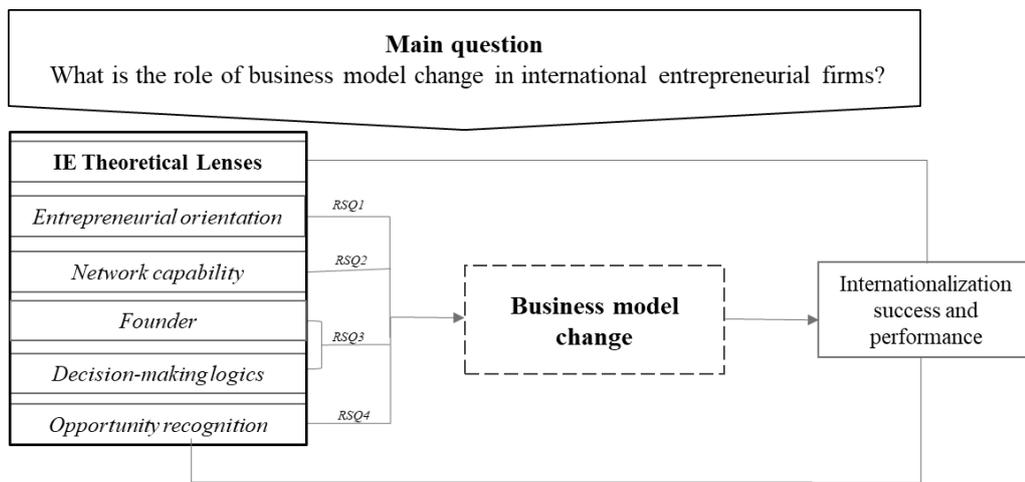


Figure 2.1: Framework of the dissertation.



### 3 Research Methodology and Design

*Not everything that can be counted counts, and not everything that counts can be counted*  
—Albert Einstein

The methodological choice of a study is an essential feature in management and social science research, driven by different research aims and assumptions about reality. It is largely dependent on the complexity of the chosen topic, the research questions, prior research work, and the desired contribution (Edmondson and McManus, 2007). The contexts, complexity, or dynamism of the investigated focal phenomenon determine the appropriate research method and design. In acknowledgment of this reality, a research design may require employing different data collection and analytical tools and techniques to provide heightened knowledge and validity to a research question (Bluhm et al., 2010). Scholars are increasingly advocating for mixing methods (as a multifaceted approach through which different methods can be linked) instead of mono-method studies (using only one method) (Creswell et al., 2011; Creswell, 2015). The mixing of methods can be expected to enrich research results and generate more nuanced and comprehensive insights, especially when researching an area of complex inquiry (Creswell, 1999; Schoonenboom and Johnson, 2017).

Hurmerinta-Peltomäki and Nummela (2006) define the mixed-methods approach as “a research approach or study that involves collecting and/or analyzing quantitative (QUANT) and/or qualitative (QUAL) data in a single study (p. 441). Stating that mixed-method studies, data collection and analysis can be approached sequentially concurrently or combined at different stages or intervals in the research process Unlike single-method studies, mixed methods allow for data collection and analysis while integrating ideas or inferences from two or more independent sources (e.g., QUAL and QUANT) of data within the same research project, study, or program of inquiry (Creswell et al., 2011; Bryman and Cramer, 2012; Creswell, 2015). In brief, QUANT studies use numerical data and measures and examine a phenomenon with statistical principles (Donmoyer, 2008). QUAL studies, however, extrapolate a research context or phenomenon by exploring the problem beyond measurements and observable behavior, which is valuable for obtaining detailed contextualized information using textual data (Hoepfl, 1997).

Subjecting inquiry to the two methodological poles or strict independent views of QUANT and QUAL methods perpetually keeps both methods in opposition to each other. As a result, the separation of data into two-dimensional extremes may limit their use and the possibility of holistically engaging with a focal research phenomenon or topic (Bazeley, 2018). Mixed methods can bridge different ways of thinking and as an orientation in social inquiry mixing methods actively invites a researcher to engage in dialogue about multiple dimensional ways of seeing, hearing, and making sense of the social world, thereby giving permission and equity of voice to the research subjects (Greene, 2007; Bazeley, 2018). Mixing methods thus allows a researcher to gain inferences from thinking that transcends the QUANT and QUAL divide and moves toward integrating and interpreting multidimensional elements (shaped by spatial,

temporal, habitual, routinized, and accidental factors and practices that emerge in varying combinations of the sample (Bazeley, 2018; Mason, 2006).

### 3.1 Rationale and aims for adopting mixed-method research

Driven by pragmatic reasoning, the present study is guided by the research questions (Figure 3.1) to make sense of the complex and emergent research phenomenon, and to answer the research questions in a logical way (Giddings and Grant, 2007). Pragmatism is an inquiry-related or problem-oriented worldview that prioritizes the most efficient and effective method to answer a research question (Morgan, 2007). The pragmatic paradigm is a worldview which focuses on *what works*, rather than what might be considered true or real (Johnson and Onwuegbuzie, 2004; Morgan, 2007; Yvonne Feilzer, 2010). Early pragmatists rejected the idea that social inquiry using a single scientific method could access truths regarding the real world (Yvonne Feilzer, 2010; Morgan 2007) Thus, pragmatism is valuable for guiding a research design, especially when a researcher uses philosophically different research approaches (Yvonne Feilzer, 2010; Johnson and Onwuegbuzie, 2004). Tashakkorri and Teddlie (1998) point out that a pragmatic stance tends to be extensively guided by personal value systems, including what works best for the research problem or what is considered important to the topic of inquiry. However, this dissertation adopts a pragmatic stance because it encourages the integration of different perspectives and epistemological deductions that combine observable and subjective meanings, while avoiding redundant philosophical debates or so-called *paradigm wars* (Johnson and Onwuegbuzie, 2004). Pragmatically focused studies add knowledge to the topic of interest, interpret accumulated data with the help of different approaches that are deemed appropriate, and contribute to theory and practice (Tashakkori and Teddlie, 1998, 2003; Saunders et al., 2009).

To further integrate reasoning from the theory and empirical data, abductive reasoning is employed. Abduction is well suited for pragmatic reasoning as it accommodates numerical and cognitive reasoning from textual data, to answer a research question (Kovács and Spens, 2005). As established in the literature review above, the discourse or phenomenon of BMs and BM change is fragmented, heterogeneous, and esoteric at best. Thus, BM research requires unorthodox thinking that can stimulate deeper meaning, reveal complexities in the BM itself, and explain how the direct or indirect interactions (decisions and actions) of actors engaging with the value dimensions lead to BM change (Greene and Caracelli, 1997). The abductive process further supports the intertwining of deductive (aspect of QUANT study) and inductive (findings of QUAL study) reasoning, providing nuanced reasoning in the present study (Dubois and Gadde, 2002; Saunders et al., 2009). Abductive reasoning is most evident in the QUAL parts of this study and the overall dissertation writing process. Abduction helped cultivate surprising findings from the literature and empirically expand reasoning around the phenomenon (BM change) against the background of multiple IE theories. Moreover, as this study uses a convergent research design, abductive reasoning was vital for identifying the appropriate theories from the inception of the research. Abduction supports theoretical and empirical data integration, which facilitates the reporting of merged outcomes.

Mixed methods were adopted for the following reasons firstly, due to the complexities of the researched phenomenon, mixed methods were deemed suitable for this dissertation. The study is devoted to understanding a complex research object (BM) and its dynamic role as a driver of change in international entrepreneurial firms using various theoretical concepts (e.g., network capability, EO, and decision-making) to generate knowledge and explanations to inform theory and practice. To generate comprehensive answers to the research inquiry, mixed methods are expedient. The main question of the research focuses on understanding *the role of BM change in international entrepreneurial firms*. The main question catalyzed the possibility to pose additional RSQs, leading to broader and deeper explanations of the inquiry. Thus, the study takes advantage of collecting, analyzing, and combining data and findings from both QUANT and QUAL approaches to address the research questions in a single research investigation (Johnson et al., 2007).

Secondly mixed-methods studies, although scarce, have been argued to be particularly rewarding for understanding and investigating small ventures as they internationalize into uncertain market environments (Coviello and Jones, 2004; Hohenthal 2006; Hurmerinta-Peltomäki and Nummela, 2006; Abrahamson, 2016; Child et al., 2017). Furthermore, the heterogeneity and emerging nature of BMs in the literature makes it difficult to advance arguments about the phenomenon, which stunts and limits the maturity of conceptual or theoretical progress. Mixing methods provides an avenue to explore nascent and complex phenomena, such as BM change, which need focused exploration and explanation (Schoonenboom and Johnson, 2017). Täuscher and Laudien (2018) suggest that exploring BM change using QUAL and QUANT methods is valuable because it reveals the most recent information about or choices made by firms, which may not have been considered in the *initial BM*.

The dissertation leverages the advantage of commensurability to navigate inferences independently and/or integrate findings from both methodological strands (Johnson et al., 2007) to draw conclusions and discuss the complexity and dynamism of BM change, which would be difficult to unravel with a single method. Therefore, using mixed methods produces rich results and explanations for the reality of the BM changes that SMEs undertake in their decision-making and internationalization journeys (Hurmerinta-Peltomäki and Nummela, 2006). IE, as a theoretical lens, further provides a bounded context in which to dig deeper into how entrepreneurs' orientations, experiences, and decisions foster actions that instigate BM change. Employing mixed methods is especially beneficial for providing nuanced and holistic perspectives of the research problem, which would be too complex and difficult to understand using a mono-method (Hurmerinta-Peltomäki and Nummela, 2004; Sinkovics et al., 2008; Yin, 2009; Coviello, 2015; Abrahamson, 2016). The mixed methods approach also strengthens the dissertation's arguments, discussion, and conclusion, which would have been unobtainable using QUANT or QUAL methods exclusively (Creswell, 2015).

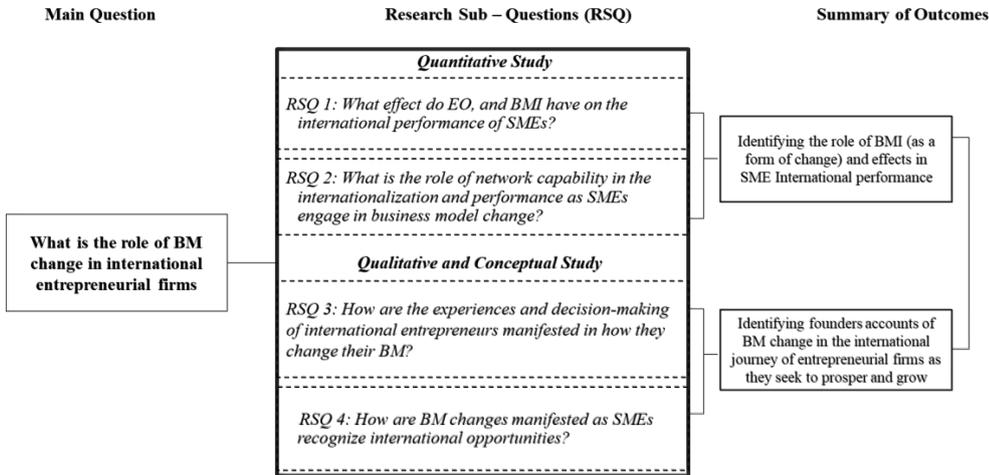


Figure 3.1: Outline of the research questions.

Thirdly, combining findings from both methods enables the substantiation of QUANT and QUAL data, the differential assessment of data, and an alternative approach to resolving initially unexplainable consequences that arise, especially in dynamic international contexts. The combination of elements in statistical trends (QUANT data) and the lived experiences of international entrepreneurs (QUAL data) produce inferences that can stimulate new deliberations and viewpoints on the topic (Hurmerinta-Peltomäki and Nummela, 2006; Johnson et al., 2007) compared to a single, conventional research method. This combination can neutralize certain disadvantages and biases of a single method (Hurmerinta-Peltomäki and Nummela, 2006), lending credence to mixed methods as an approach that solidifies research findings both numerically and contextually.

Fourthly, embracing mixed methods for this study allows for new insights and the use of a parallel yet robust design that addresses the research questions (Onwuegbuzie and Johnson, 2006; Schoonenboom and Johnson, 2017). An essential goal of this dissertation is to corroborate the evidence from multiple data sources, theoretical arguments, and hypotheses from all the publications (I–V) and to generate valuable conclusions. Mixing methods facilitates the sequencing and integration of data, supports data triangulation, fosters the convergence of credibility, and corroborates the results (Bryman, 2006; Denscombe, 2008). Furthermore, as this is not a processual study, the diversity in the data collected and the experiences of the different respondents are best supported by a mixed study design. As such, leveraging the strength of both methodological approaches generates a holistic picture of the focal research phenomenon and related questions (Collins et al., 2006). In short, the dissertation leverages the *complementary* strengths of the QUANT and QUAL methods (Hurmerinta-Peltomäki and Nummela, 2006), benefiting from the interpretive attributes of its QUAL dimension in terms of description, interpretation, and explanation and from its QUANT dimension in addressing causal

relationship questions that allow for generalization of the results (Lee and Lee, 1999; Bryman, 2006).

Overall, while prioritizing one method over another or the order for implementing mixed methods remains controversial among scholars (Mason, 2006; Fretters and Molina-Azorin, 2017). Saunders et al. (2009) observe that no design is inherently superior to others and that imposing a particular research method or design on a study may be unduly simplistic, especially because there is no all-encompassing or optimal technique for adapting research strategies in business and management studies. Instead, the research strategy should be selected based on the researcher's degree of theoretical and practical knowledge, time, resources, and philosophical inclinations (Yin, 2003; Saunders et al., 2009). In the present study, the choice of research strategy satisfied the research objectives, and was guided by the research questions (Saunders et al., 2009) and the philosophical assumptions regarding what is real, what is known, and how such facts can be rendered (Miles and Huberman, 1994).

### 3.2 Research design

The design and core strategy and logic for mixing methods in the dissertation is governed by the intent to find new supporting arguments and think creatively and multidimensionally (Mason, 2006) about the role of BM change in relation to the international context. This aim is outlined in the main research question: *What is the role of business model (BM) change in international entrepreneurial firms?* Mixed methods offer a broad opportunity to explore and address the main research questions using multiple types of data sets. The main question is broken down into four RSQs (1–4) that are answered in five publications (I–V) using data from the QUANT and QUAL parts of the study. Figure 3.1 presents an outline of the research questions used in both QUANT and QUAL approaches. Figure 3.2 shows the methodological design of the dissertation. See the data collection (sub-section 3.2.2 and 3.2.3) for a detailed outline of the QUAL and QUANT data collection).

Equal priority was given to both research methods and findings, meaning that both the QUANT and QUAL parts of the study were considered with equivalent status as explanations to the phenomenon under study. The implementation of *data collection and analysis* largely follows a convergent parallel design (Creswell, 2009). However, overlaps may exist about what is considered truly “parallel” or “convergent method” (See Yin, 2006; Teddlie and Tashakkori, 2006). The dissertation integrates and coherently reports the two different strands of findings (from QUANT and QUAL) in the discussion and conclusion parts of the dissertation (Creswell et al., 2011). Convergent parallel designs are *typified as quantitative and qualitative strands of the research are performed independently, and their results are brought together in the overall interpretation* (Schoonenboom and Johnson, 2017 p.117). Schoonenboom and Johnson (2017) *elaborate on the definition by describing Parallel mixed designs— as one in which the study uses one has two or more parallel quantitative and qualitative strands, either with some minimal time-lapse or simultaneously; the strand results are integrated into meta-*

*inferences after separate analysis are conducted; related QUANT and QUAL research questions are answered, or aspects of the same mixed research question is addressed (p.118).*

*The quantitative (QUANT) dimensions of the dissertation*

Thus, QUANT studies help verify and establish causal relationships based on the survey (numerical) data (Bryman 2006; Bryman and Cramer, 2012). The QUANT allowed for refined arguments to be hypothesized and generated regarding how individuals' orientations and capabilities affected BM change, generalizing the results to a wider population. RSQ1 and RSQ2 are addressed using the QUANT part of the study via statistical relationships that explore BM change and performance implications. The QUANT method best suits these questions because it responds to causal relationships and focuses on gathering quantifiable data and analyzing numerical data using a survey (Bryman and Cramer, 2012). QUANT studies are results-oriented and intended to generate concrete, objective facts and the causal reasoning that governs a phenomenon (Saunders et al., 2009). This approach aims to produce reliable results objectively and to minimize variabilities in the phenomenon under investigation. The current study uses a structured questionnaire to survey a large group of people. The objective of QUANT research in this study is to identify patterns and statistical relationships, test and develop hypotheses pertaining to the phenomenon being studied, and produce generalizable results concerning the population of interest (Johnson and Christensen, 2008). QUANT research approaches use deductive reasoning to make predictions about expected relationships (among variables) with regard to the research question and allow the researcher to examine and critique the compiled data using controlled measurements.

RSQ1 and RSQ2 (Publications I and II, respectively) consider EO and network capability, respectively, and their prevailing relationships with BMI and implications for international performance. The QUANT approach was deemed appropriate as the research questions aimed to elucidate the nature of the relationships between BMI and international performance. Two separate datasets are used in Publications I and II (data collection is explained in 3.2.2). In both studies, empirical data were collected using Qualtrics software, a leading online survey instrument. The survey scale items used in both datasets were developed and adapted from the literature by a group of IE and entrepreneurship researchers, who also translated the scale items from Finnish to English. For further validation, a professional language editor conducted a reverse translation to ensure the linguistic accuracy of the translated items. The resulting survey was pre-tested by two SME managers in different fields to ensure its suitability for target respondents.

The measures used for data collection and analysis are in line with the research topic. Specifically, the measures for BMI were adapted from and validated with measures developed by Clauss (2017), while international performance was measured subjectively. For RQ1 and RQ2, the measures for BMI were developed and validated using the latest scales applicable to the research context (e.g., Clauss, 2017 for BMI). The sample adhered to the definition of SMEs by the European Commission (2003) in employing fewer than

250 people and having a turnover of less than €50 million or a balance sheet total of less than €43 million. The firms contacted were SMEs with international operations. Efforts were made to ensure that knowledgeable persons (e.g., managers or CEOs) responded to the survey. This was to guarantee that the information received, especially about complex issues (e.g., internationalization, strategy, or BM changes), was *up to par*.

*The qualitative (QUAL) dimensions of the dissertation*

RSQ3 and RSQ4 are addressed with the QUAL aspects of the study. According to Yin (1994), QUAL designs respond to “how” questions and thus reveal hidden meanings, underlying beliefs, actions and processes, causal mechanisms, and other profound experiences of individuals, teams, and organizations (Marschan-Piekkari and Welch, 2004; Bluhm et al., 2010). Publications III, IV, and V consider the “how” question of BM change in the internationalization of SMEs to guide us toward a deeper understanding of the chosen phenomenon and to generate abundant descriptions and explanations (Eisenhardt, 1989). The QUAL study is expedient because it supports theory, the elaborations derived from pre-existing models or conceptual ideas, the testing of existing theories or hypotheses, and the general advancement of management theories (Lee and Lee, 1999), which are embedded in the aim of the dissertation.

Interviewing is the dominant form of inquiry in many QUAL research designs because it allows the investigator to probe flexibly, repeat, and clarify the questions asked (Marschan-Piekkari and Welch, 2004; Denzin and Lincoln, 2008). In this study, these interview questions explore BM change with the goal of obtaining deeper insights into the context of the research problem. The study is driven by textual data, following a QUAL method. The QUAL inquiry allows for reflexive engagement, scrutiny, and iteration of the data with theory, thus guiding the analytical process and minimizing individual biases and expectations (Bluhm et al., 2010). It is well suited to subjective observation, interaction, and interpretation of entrepreneurs’ experiences (Denzin and Lincoln, 2011). Revealing deeper understanding of the respondents’ (i.e., entrepreneurs’) lived experiences, interpretations of these experiences, and how these experiences unfold (in the decisions and actions) over time in the activities which affect BM changes as they internationalize (Bluhm et al., 2010).

RSQ3 and RSQ4 (Publications III, IV, and V) are approached using QUAL methods in which the primary focus of inquiry is the entrepreneur and the BM changes instituted as the entrepreneur engages in international markets. Appropriate case selection and identification of the unit of analysis are integral to the success of a case study and help enable a powerful bond between the research phenomenon and the real-life setting (Creswell, 2013). The selection of participants for the interviews was made by considering the research questions and objectives, which were developed to understand the decisions and actions that influence changes to the initial BM and the identification and enactment of opportunities in internationalization activities. For this reason, it was important for the researcher to carry out interviews with founders or *elites* with long tenure and extensive functional responsibility in the organization, as well as considerable

international exposure (Welch et al., 2002). Information from the founders or managers provided context for and explanations about how and why managers change their BMs and how their schemas support the decisions that influence developments in or changes to their BMs (Doz and Kosonen, 2010; Massa et al., 2017; Snihur and Zott, 2020).

RSQ3 and RSQ4 are answered using the same QUAL empirical data. The analysis and findings are generated from subjective interactions between the researched and the researcher, allowing for meaningful interactions within the research setting. The data include semi-structured interviews, observation reports, field notes, and archival materials (Denzin and Lincoln, 2008), as well as the shaping of hypotheses and analyses based on the examination of cross-case patterns, such as similarities and differences within the case data (Eisenhardt, 1989).

The study addressing RSQ3 (Publication III) is designed to gain insights into the experiences of entrepreneurs or founders in the international context, thus providing a natural setting for the focal organization within a context-specific location (Yin, 1994; Marschan-Piekkari and Welch, 2004) without manipulating the responses. Mapping the contextual accounts of the participants illustrates how their past and experiences influenced their choices, internationalization activities, and related BM changes. The questions about internationalization were also developed by taking into account the motivations for venture formation, experiences in internationalization, and the creation and management of relationships with stakeholders (Kuivalainen et al., 2012; Zucchella et al., 2018). The corresponding BM change questions are semi-structured, addressing various dimensions, elements, and corresponding changes. The questions for the QUAL studies are adapted from different studies in the BM literature (see Appendix A). Overall, the exploration of the founder in context yields nuanced insights into how individual-level findings integrated with firm-level findings, which are further supported by the QUANT findings (fostering corroboration and triangulation in the study). Publication also responds RQ3. It uses a conceptual effort that theoretically explores BM change and decision-making logic from the IE perspective. Examining the decision-making logics of effectuation and causation requires extensive reasoning and, sometimes, experimentation to reach a tenable conclusion. Thus, conducting a conceptual study that reflects on the relevant literature provides a useful basis for examining the data in the business case and opens avenues for developing propositions for future empirical testing and deliberation. The other publications also reinforce the arguments of the RSQ4 study, allowing for the integration of evidence from theory and strengthened arguments regarding contextual variables, anomalies, and drivers (Welch et al., 2011).

The study involving RSQ4 is answered with a multiple case study of four Finnish SMEs. The focal and empirical context of this study is internationalizing Finnish SMEs from the clean tech sector with varying internationalizing activities and involvement. This study examines SMEs to analyze their BMs in conjunction with international opportunity recognition (IOR) within and across each case and to identify their similarities and differences (Yin, 2003; Piekkari et al., 2009). The case study research approach also allows for patterns and meanings from the focal phenomena in specific contexts to be

observed (Berg, 2001). By using a multiple case study approach, the study embraces a detailed description of theoretical development (Eisenhardt and Graebner, 2007) in the BM and IOR literature in the context of SME internationalization.

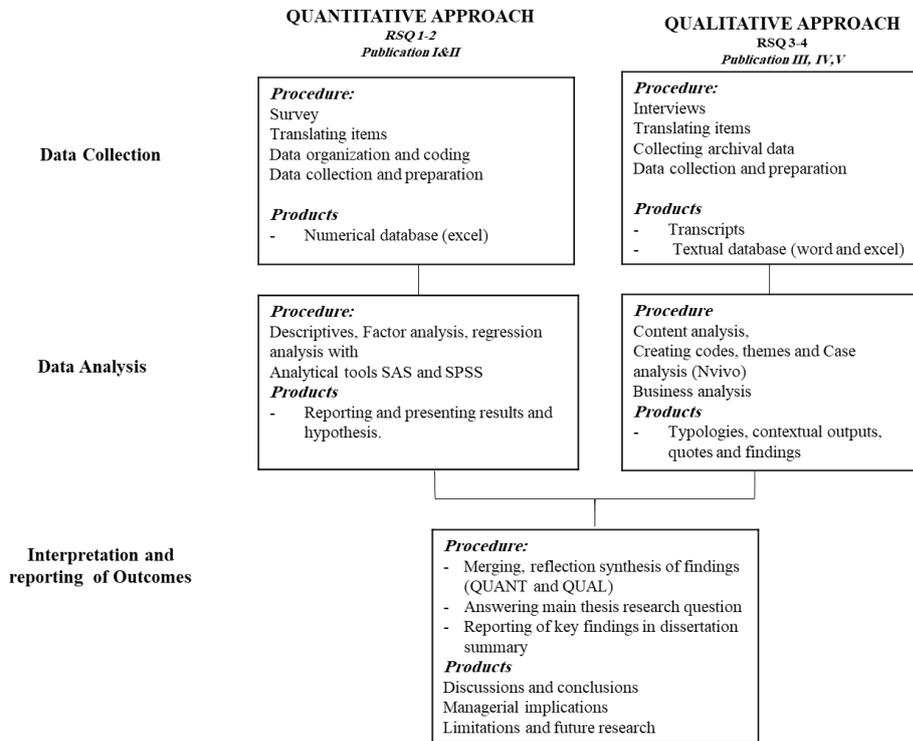


Figure 3.2: Methodological design of the dissertation.

Particularly when using two different methods, a vital part of the research process is to identify the interdependencies in and integrate the methodological findings to reach a common theoretical or research goal and inform the interpretations of the key findings (Yin, 2006; Leech and Onwuegbuzie, 2009). Integration is the extent to which QUAL and QUANT components of a study interdepend in such a way that they produce findings that are mutually illuminating (Bryman, 2006 Bazeley, 2009; Schoonenboom and Johnson, 2017). Accordingly, integrating methods can be intentional, through iteration, blending, nesting, or embedding, or occur for a common substantive (holistic) or ideological (transformative) purpose (Greene, 2007; Bazeley, 2009). In this study, the main point of integration was evident in the merging of the QUAL findings and QUANT results. The integrated outcomes or interpretations are reported in the discussion, managerial contributions, and limitations sections of the dissertation. Previous studies report that a mixed-methods approach supports the discovery of complementarities by comparing and arguing for anomalies, antecedents, or hidden variables (Jick, 1979; Greene and Caracelli, 1997; Creswell et al., 2003; Tashakkori and Teddlie, 2003).

Combining and analyzing evidence from both kinds of studies promotes nuanced arguments to confront the gaps in theory building and knowledge creation and reveal findings that helped answer the research questions in ways that support future research and theoretical development.

In this study, a significant phase involved alternating between the findings of the QUANT (RSQ1 and RSQ2) and the QUAL and conceptual studies (RSQ3 and RSQ4) to establish the conclusions and contributions relevant to the research focus. Iterating between findings to reinforce constructing new insights towards expanding existing knowledge on the focal research phenomenon— and theory development (Schoonenboom and Johnson, 2017). The justification of the arguments in the discussion and conclusion section of the dissertation was also fueled by resynthesizing the findings to discuss BM changes, leveraging context from the assumptions and unique theoretical discourses from the conceptual and contextual findings (QUAL) and the empirical (QUANT) outcomes. Contextual sense-making accounts from the entrepreneurs' narratives, their BMs from the QUAL study, and the empirical hypothesis and performance outcomes from the QUANT study all supported each other. They were valuable in informing and strengthening the conclusions and theoretical contributions of the dissertation. Lastly, to buttress the data interpretation process, the researcher sought a collaborative (with co-authors) assessment of the generated findings to scrutinize and synthesize findings, providing holistic insights and arguments for answering the research questions

Overall, the dissertation leverages the duality (convergent) of mixed design by utilizing the QUANT approach to examine the effects of EO and network capability and their influences in relationships between BMI and international performance variables using numerical data (Creswell, 2013). This approach elucidates the role of BMI as a form of change and its implications for international performance. The QUANT results are valuable in the corroboration and linking of theoretical arguments on why BM change and IE, matter to each other *pari passu*. The QUAL data lead to the discoveries of new explanations, which emerge based on entrepreneurs' lived experiences, and how their decisions (Mason, 2006) influenced their BM. A sense-making account of the founders' internationalization journeys was extracted, illuminates how the actions or social interactions of entrepreneurs influenced BM change, and their respective internationalization journeys. A synthesis of the findings of both studies (see Figure 4.2) was beneficial in the discussions, conclusions, and reporting of the overall dissertation.

Table 3.1: Summarized Description of the Research Method and Datasets.

Publication I	Publication II	Publication III	Publication IV	Publication V
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	Business model innovation and entrepreneurial relationships in SMEs: Implications for international performance	Business model innovation in international performance: The mediating effect of network capability	Business models in context: Entrepreneurs (re)modeling their business toward an international venture	Business model innovation in the internationalization of SMEs: The role of causation and effectuation	Business model change in international opportunity recognition of SMEs
<i>Research questions</i>	<i>RSQ1</i>	<i>RSQ2</i>	<i>RSQ3</i>	<i>RSQ4</i>	
<i>Method and instruments</i>	QUANT study: Regression and confirmatory factor analysis <i>Instruments:</i> Qualtrics, SAS& SPSS		QUAL study: Case study and content-oriented analysis <i>Instruments:</i> NVivo	Conceptual Study: Single business case	QUAL study: Multiple case study <i>Instruments:</i> NVivo
<i>Data sources</i>	95 internationally operating Finnish SMEs (2014)	210 internationally operating Finnish SMEs (2017)	<i>Primary data</i> -Semi-structured interviews -Founders/managers of small international firms (2017) <i>Secondary supplementary information</i> -Archived interviews, transcripts, and webpages	<i>Primary data</i> - Semi-structured interviews - Founders/managers of small international firms (2017) <i>Secondary supplementary information</i> -Archived project interview data transcripts, webpages, and newsletters	

### 3.3 Empirical context, sampling, data collection, and analysis

#### 3.3.1 The empirical context and sampling

The empirical data for this study are drawn from internationalizing SMEs, their entrepreneurs, and the actions, behaviors, and decisions that affect the changes occurring in the firms' BMs. In this study, the BMs of internationalizing SMEs in Finland constitute the empirical context due to firm survival realities that have led to the increasing modification of internationalization in Finnish industries. Thus, to isolate the phenomenon of interest, the focal empirical context is, *internationalizing SMEs in Finland*. Finland has a small, open economy with a highly entrepreneurial society. Finnish SMEs account for approximately 28 percent of the country's exports (Kuivalainen et al., 2015). Finland has approximately 292,377 companies. Of these companies, 93%, or 271,851, employ fewer than 10 people; there are 16,630 (5.7%) small enterprises, 3,214 (1.1%) medium enterprises, and 682 (0.2%) large enterprises (Suomen Yrittäjät, 2021). SMEs account for more than half (57.5%) of the €445 billion in total turnover for companies in Finland, and their share of the GDP is slightly more than 40% (Suomen Yrittäjät, 2021).

Many small, open economies, including those in the Nordic countries, find that their size creates additional pressure for SMEs to grow. Given the small size of the Finnish domestic market, competition, and industry pressures, growth is, in most cases, sought through internationalization. Internationalization is also reflected in the natural and spontaneous growth aspirations of SMEs. Lindholm et al. (2013) report that Finnish SMEs consistently seek rapid growth, with more than one-third seeking moderate growth. In short, Finland has a track record of being an entrepreneurial society that benefits from long-standing government support to boost internationalization (Kuivalainen et al., 2015).

The empirical data aptly fit the study because internationalization has gained momentum in Finland, and because Finnish SMEs are supported by government funding, which has in turn fostered the growth of internationalization. Therefore, the rapid international growth, and specific BMs of these SMEs provide a yardstick for further exploration. Focusing on internationalizing Finnish SMEs also offers theoretical and empirical insights into the connection between entrepreneurs' internationalization decision-making, and behaviors in relation to their BMs. Thus, the dissertation contributes to two emerging research domains—IE and BM scholarship—by clarifying the micro-change- processes at play in the emergence of BMs—yet advancing the understanding of the phenomenon, within a specific context (Zahra et al., 2014).

### 3.3.2 Data collection and analysis of the quantitative studies

Different datasets were employed for Publications I and II [see Appendix A (for survey questions and items that guided each study) and Table 3.2 (for a summary of the measurements variables and tests)]. For Publication I, the empirical data were collected via a structured online survey instrument. The Qualtrics online software, was administered to a cross-industrial sample of SMEs in Finland over a six-month period (May to September 2014). The initial list of firms was collected from AMADEUS, an online database. These firms were from a wide variety of sectors—including the manufacturing and service sectors. More specifically, they included forestry, chemical, metal, and other manufacturing industries, as well as mining and quarrying, energy supply, water supply, waste management, and construction. The resulting list comprised 1,130 firms, which were contacted via phone to solicit their participation in the survey. A total of 78 firms (e.g., subsidiaries and other non-independent SME entities) were excluded from the final sample. A total of 311 firms declined to participate, with the most common reason being insufficient time to complete the questionnaire. Furthermore, 306 of the most relevant decision-makers in the contacted SMEs (most often the CEO) could not be reached during the data collection process, hence these firms were also excluded from the sample.

The survey scale items were developed and adapted from the literature by a group of IE and entrepreneurship researchers who also translated them from Finnish language into English. A professional English editing service conducted reverse translation to ensure the accuracy of the translated items, which were then pretested by two SME managers from different fields, to ensure their suitability for the target respondents. During the data

collection process, responses were tracked daily, and two rounds of reminder emails were sent to those who had not responded within two weeks of the initial contact. When the collection process concluded, 148 responses were gathered, corresponding to a 14% response rate (148/1052). Because such a response rate is acceptable in terms of rigor in entrepreneurship research (Rutherford et al., 2017), the sample was deemed adequate for analysis. From the focus sample SMEs, 64% (95) were involved in international operations. The hypothesis in Publication I, was tested with 95 internationalizing SMEs. These SMEs had 58 employees on average, the firms had been in business for an average of 33 years and had been operating internationally for an average of 20 years.

EO dimensions (proactiveness, risk-taking, and innovativeness) were measured as a single EO construct based on measurements adopted from Naldi et al. (2007), Knight (1997), and Covin and Slevin (1989). Due to the novelty of the BMI construct and the lack of suitable existing scales at the time of data collection, the measures for BMI were developed from conceptual measures. The measured items explored firm and managerial issues concerning the ability to reorganize operating processes in line with opportunities, rapid changes, and value propositions. All the considered BMI items were further validated with recent and widely accepted BMI measures from Clauss (2017). As there were no solid measurement items identified at the time of data collection, the original measures for BM were developed with adaptations from literature (McGrath, 2010; Spieth et al., 2014), and were validated using the latest measures from Claus (2017). The measures presented in Clauss (2017) were considered because they provide rigorously validated scales that reflect the central and meta-constructs or elements of BMI dimensions (value creation, proposition, and capture). They also offer an empirical understanding of linkages between organizational environmental orientation, and cognitive actions that prompt change. These measures allow for aggregated analyses of drivers and systemic aspects of the BMI and foster holistic reflections and argumentation on BM changes and how these changes influence firm performance (Clauss, 2017). International performance was measured subjectively by asking respondents what they thought about their business activities on international platforms and in foreign markets (e.g., Jantunen et al., 2005; Naude et al., 2014; Bianchi et al., 2017).

The study used seven-point Likert-type scales with answers ranging from “strongly disagree” (1) to “strongly agree” (7). It relied on the single most-informed respondent in the SME (in most cases, the CEO) to fill out the survey on behalf of the company. However, to mitigate the potential threat of common method bias, recommendations by Podsakoff et al. (2003) and Chang et al. (2010) were enacted; the scales and items used in the analysis came from different parts of the larger survey and included several negatively worded items to reveal any potential halo effects in the responses. Moreover, the hypothesized conceptual model of the study included mediation effects, which made it unlikely that the respondents were significantly influenced in their responses (Chang et al., 2010). Ex-post remedies were also adopted (e.g., by conducting Harman’s single-factor tests) to uncover any potential common method bias in the empirical data. Thus, common method bias is not expected to have had a significant effect on the results or the analysis.

For Publication II, to test the hypothesis, empirical data were collected via an online survey, targeting internationally operating SMEs with Finland as the country context. The data collection was conducted via the Qualtrics online tool between November 2017 and February 2018. The initial sample of firms to be contacted, was drawn from two primary sources: the Bisnode Selector and AMADEUS online database. The data collection procedure comprised two phases. In the first phase, a sample of 1,000 firms listed in the Bisnode Selector database was collected, and it consist of exporting companies based in Finland. This list was selected because it included a variety of firms across all sectors. In the second phase, a sample of 1,000 firms was drawn from the AMADEUS online database. The reason for having both databases was that the Bisnode database provides a random sample of exporting firms in Finland across all industry sectors, and the AMADEUS database allows the selection of two specific industry sectors (namely, the software and metal industries), thus creating an opportunity to control for industry sectors when necessary, during analyses.

The SMEs were initially contacted via phone to ascertain their fit for the study. During this initial contact, the most knowledgeable person in the company was asked to respond on behalf of the firm. Companies that were deemed eligible and were willing to participate were sent a link to the online questionnaire. To ensure linguistic accuracy, the items were transcribed and translated from Finnish, and a professional language editor translated them into English to ensure that the intended meanings were retained throughout the items. Subsequently, the questionnaire was piloted with two managers from different fields to ensure its legibility to the intended respondents. Two reminders were also sent at two-week intervals to firms that had agreed to participate but had not yet responded. The search yielded a sample of 2,029 SMEs. A total of 1,821 firms were contacted, and of these, 1,387 were found to be valid candidates according to the research criteria. Ultimately, 1,032 firms agreed to participate in the survey. After the data collection process had concluded, 365 SMEs had provided responses, resulting in a response rate of 26%; this response rate is considered sufficient for an empirical entrepreneurship study (Rutherford et al., 2017). A total of 210 responses comprised the final empirical sample used in this study. From this sample, only those SMEs that responded fully to questions pertaining to networking capability, BMI, and international performance were included. On average, the firms had started their international activities at 11 years of age. Thus, the characteristics of the sample firms were quite representative of internationally operating SMEs based in Finland (Kuivalainen et al., 2015).

The survey was developed using a questionnaire, and by adapting scales from extant studies. The study used seven-point Likert-type scales with answers ranging from “strongly disagree” (1) to “strongly agree” (7) and relied on the single most-informed respondent in the SME. To assess network capability, the measure by Chen et al. (2009) was applied and validated Ritter et al.’s (2002) measures of network competence. The measures in this study were adapted from the scale validation study to measure BMI in Clauss (2017). The Likert-item scale was useful for measuring the extent of change in firms’ BMs. The hypothesis in Publication II, was tested based on the final sample of 210 internationally operating SMEs, for international performance using a set of items to

capture success in expansion to new markets, sales growth abroad, and profitability in foreign operations. Firm age (in years) and firm size (number of total employees) were also included as control variables in the analysis, because smaller SMEs aiming to expand internationally often face resource constraints, they often seek to develop network relationships to facilitate achieving their expansion goals (e.g., Loane and Bell, 2006). Non-response bias was evaluated by comparing early and late respondents, following the recommendation of Armstrong and Overton (1977), and no significant differences between the two groups were found. The study aimed to counter common method bias in the following ways: first, by following the recommendations of Podsakoff et al. (2003) when designing the questionnaire; second, by separating predictor and criterion variables in the questionnaire itself and assuring the anonymity of the respondents; and third, by using Harman's one-factor test to check for common method bias in the data. No signs of a common factor underlying the data were found. Table 3.2 presents the variables measurements and tests for Publications I and II.

Table 3.2: Variables Measurements and tests for Publications I and II.

Publications	Main variables	Variable type	Analysis methods	Measures of reliability & validity	Hypotheses testing & significance
I	Entrepreneurial Orientation	Independent variable	Confirmatory factor analysis	Cronbach alpha	<i>H1: Significant relationship between BMI and international performance</i>
	Business Model Innovation	Independent & Mediator variable	OLS Multiple regression	Harman's single factor test.	<i>H2: Significant relationship between EO and BMI.</i>
	International Performance	Dependent variable	Sobel test of Mediation		<i>H3: Significant relationship between EO and international performance.</i>
	Firm Age	Control variable			<i>H4: BMI mediates EO and international performance.</i>
	Firm Size	Control variable			
II	Network Capability	Independent variable	Principal component factor analysis	Kaiser-Meyer-Olkin (KMO) test	<i>H1: The higher the network capability of an international SME, the higher its BMI.</i>
	Business Model Innovation	Independent & Mediator Variable	Hierarchical linear regression	Bartlett's test of sphericity	<i>H2: The higher the BMI of an international SME, the higher its international performance.</i>
	International Performance	Dependent variable			<i>H3: BMI mediates the relationship between network capability and international performance.</i>
	Firm Age	Control variable	Sobel test of Mediation	Harman's single factor test	
	Firm Size	Control variable			

### 3.3.3 Data collection and analysis of the qualitative study

The data used in Publication III relates to how entrepreneurs make sense (e.g., Rasmussen et al., 2001) of their BMs, and change them as they internationalize [see Appendix B (for the interview questions that guided each study) and Table 3.3 (For outline of case firms and participation information) and Table 3.4 (for the procedures and analysis of the study)]. Thus, the entrepreneurs' accounts functioned as sensemaking instruments (Brown et al., 2015) of their international entrepreneurial experiences. Their descriptions of their experiences include the company's current situation; their current situation in the company; their projections of the company's visions, and future chances of reaching international markets. These responses provided a means of analyzing how the entrepreneurs chose to encode information about their past experiences, and the surroundings in which they found themselves (Korhonen and Leppäaho, 2019). The study investigated these entrepreneurs and how changes in their BMs influenced their company's internationalization journeys. The respondents (founders) were also asked about changes (drastic or subtle) that they had detected in their internationalization journey. The interview questions were centered on capturing information on the background and previous experiences of entrepreneurs, their founding business idea/BM, and the processes the firm were undertaking (considering timelines and the contextual implications for the BMs).

The QUAL method informed and provided a point of reflection on how different contextual dimensions (social, temporal, spatial, sectoral, and organizational) of the firms' entrepreneurial journeys (Zahra et al., 2014), drive the sense-making behind their BMs. Drawing from a critical realist case study approach (Ragin, 2009), which aims to contextualize explanations by searching subjectively for the causes of focal phenomena (Piekkari et al., 2009; Welch et al., 2011), the primary empirical data were generated through semi-structured thematic interviews with company founders and cofounders at seven internationally operating Finnish SMEs (Welch and Piekkari, 2006). The cases were selected based on predetermined criteria. First, the selected firms fit the definition of SMEs because they had fewer than 250 employees (OECD, 2009). Second, the firms were similar, in that they were all established few years prior, and were in the early stages of internationalization, thence facilitating the observation of pre-internationalization actions and decision-making. After these criteria were implemented, four companies were deemed suitable and consequently selected for inclusion in the study. The interviews lasted for approximately one hour each, and the recorded interviews were transcribed verbatim for initial content analysis. The interview transcripts totaled to 210 minutes and constituted 67 pages of text. The interviewing of firm founders and cofounders revealed their opinions, convictions, decisions, and actions at those moments in time, and in the early phases of their internationalization journeys. The interviews generated useful data on the early phases of BM creation and the changes implemented in terms of rethinking value creation, value delivery, and value capture during the internationalization. For triangulation, secondary data from archival sources (such as webpages of founders' narrative scripts, and from an IE master's degree course in which the case companies participated) supported the generated data.

The analysis was manifold and involved an abductive process of alternating between the data and the literature (See Table 3.4). The analytical process started with the organization and structuring of the data based on interview guide. A preliminary database was created that contained overall idea of the business, and detailed activities within the BM dimensions. Other areas of keen interest included the founders' background at the time of the interview, and prior to founding the venture— and relation to the processes the ventures had been experiencing—with particular focus on the early years of the business, from inception to current internationalization activities. The latter part of the analysis revealed that, primary BM changes occur in relation to the different dimensions of the entrepreneurs' context. These dimensions sensitized the analytical process and revealed more about the multidimensional and intertwined contexts in which the business ideas and BMs had emerged, as well as about the activities that gave shape to the entrepreneurs' creativity and approaches to internationalization. The analytical process of contextualizing the individual entrepreneurs was important in this study because it highlighted the different stages of BM change in internationalization journeys, and their implications for the contextual dimensions (Zahra et al., 2014). This in turn allowed for a more nuanced understanding of the findings. This approach offered insights into the iterations of entrepreneur-level reasoning about the past, present, and imagined future of internationalizing with different BM value components, such as the individuals' relations with their partners, customers, products, or offerings for international markets. The analysis concluded by revisiting the data with a contextual and sense-making filter, to trace the accounts of the founders, while seeking alternative interpretations for their international entrepreneurial behavior (Asemokha and Korhonen, 2021) in conjunction with their desire to change their BMs. This last round of analysis led to the development of four typologies of entrepreneurs, which further support the dissertation's arguments concerning BM changes and how firms may approach change in international market contexts.

Publication IV is a conceptual study using data from one of the firms evaluated in Publication III. However, this study also includes a business case to ground the study propositions. The data used in the business case were extracted from the empirical data used in Publication III. This case explores how a single Finnish SME (anonymized as Company Alpha) expanded into international markets and how its managers approached decision-making as their firm ventured across borders. The initial findings of the business case were generated in the early stages of analysis in Publication III. The findings from the single case firm were unique and supported the theoretical propositions (Siggelkow, 2007). Previous research has cautioned that weak construct conceptualization may lead to poor theoretical rationales, which may affect the conclusions, propositions, and validity of the findings (MacKenzie, 2003). To increase the reliability and validity of the propositions developed, the conceptual arguments were supported by the business case, which clarified the argument and reinforced the conceptual depth and analytical reasoning in the dissertation. Adding a business case to the study also refined the assumptions, arguments, and interpretations of the findings in the QUAL studies concerning the role of entrepreneurial decision-making and its implications for BM change. The conceptual study provided verifiable evidence for the arguments made in both studies on the role of

founders' decision-making and influence in changing BMs, especially as SMEs internationalize. Overall, the single business case reinforced the theoretical propositions.

Publication V provides insights into matters of IOR (Reuber et al., 2018), and BM changes (Child et al., 2017; Foss and Saebi, 2017) related to the internationalizing of SMEs. The primary data were collected through theme-centered or semi-structured interviews with key informants in the companies. The interview questions focused on two main lines of questioning and additional background information. The first line of questioning focused on the company's existing BM, its changes over time (early/initial and ongoing changes), and the reasons for possible innovation or adaptation. The second part focused on the internationalization process and changes made as the company recognized new (international) opportunities. However, the interviewer remained flexible during the interview process, repeating questions, and clarifying BM concepts to the interviewees (Welch and Piekkari, 2006). This was done to ensure that meaningful data were generated, to achieve the study's research objectives of acquiring information regarding the firms' international activities and corresponding BM changes.

A purposeful sample of company founders and managers at internationalizing SMEs was obtained to yield sufficient information relevant to the firms' international activities, decisions, and processes. The sampling method used is known as elite sampling, implying that the people who are expected to know the most about a subject are chosen (Tuomi & Sarajärvi, 2003). The method enables data collection from experts with the knowledge, experience, and ability to give information specific to the researcher's interests, which also provides theoretical clarification (Patton, 1990; Tuomi & Sarajärvi, 2003). Using this sampling method was valuable because the respondents had first-hand knowledge about the decisions and actions of their company regarding their core BM activities at the times of venture formation, initial opportunity recognition, and ongoing internationalization operations. The interview questions focused on two main themes, and supportive background information. The first theme examined BM changes (past and ongoing changes or adaptations) undertaken since the firm was founded. The second theme centered on internationalization activities and IOR, with a focus on initial and early opportunities. The interviews were conducted in Finnish by the second author of Publication V via phone and Skype, between October and December 2016. The length of the interviews ranged from 30 minutes to one hour, totaling 168 minutes and generating 27 pages of text. The interviews were recorded, transcribed, and translated from Finnish to English by a professional transcription and translation service.

For the initial analysis, the content of each case was thoroughly read and summarized in MS Excel. Each summary was designed to correspond to each of the interview questions. Second, the NVivo software package was used to organize and analyze the data, and to apply thematic coding to derive meaning from them (Miles and Huberman, 1994). The NVivo tool significantly supported the process of interpreting the research outcomes, as it can cope with a large amount of data in a fast and reliable way (Roller and Lavrakas, 2015). The coding process led to the emergence of new themes and codes for validity checking. The transcripts were reread for cross-checking and ensuring that no valuable

themes or relevant data from the interviews were omitted in the coding. The final codes were structured hierarchically to identify relevant themes (BM value dimensions). The thematic coding provided clear categorization of the findings based on each case firm. This allowed for cross-case analysis and mobilizing knowledge as the case firms were contrasted and compared with each other. The interviews were complemented with secondary data from archival sources, academic material, reports, and firm websites. The secondary material was used for triangulating and checking the reliability of the statements and timelines of the firms' activities.

Table 3.3: Outline of Case firms and participant information.

Firm	Informant	Founded	Employees	Business Category	Background and Experience	Key Customers	Duration of interview
<b>Case firm and Participant Information Publication III and IV</b>							
Sunsu	(Co) Founder	2015	3	E commerce platform: -commerce solution, marketing, logistics, and consultation.	Serial entrepreneur (formed many companies) former researcher numerous with involvements in international projects and collaborations with international organizations. Previous company and international experience working in Russian internet marketing.	B2B	60 mins 16 pages
Modula solutions	(Co) Founder	2016	2	Furniture company magnetic connectors for modular sofas for customization Furniture	Serial inventor (has many inventions). No educational background, except in programming some courses in polytechnic. Prior working experience in social and health care for worker for eight years before	B2B & B2C	58Mins 19 pages
Kurros	Founder	2014	5	digital platform providing virtual solutions for social and health care	Background in health and social care work, developed a digital health and rehabilitation company to complement existing labor shortage. Master's Degree in International Marketing, and 20 years of experience in an international company exporting medical equipment.	B2B & B2C	30 mins 13 pages
Kalmar	(Co) Founder	2015	6	Data information and consulting: SaaS management system solution to help clients	Experience in the management of growth and start-up companies (e.g., international sports business) and now software business, experienced bankruptcy in family firm with 3 brothers were working, 170 employees in Finland, and one factory in Canada.	B2B	62 Mins 18 pages
<b>Case firms and participant information Publication V</b>							
Alpha	CEO	2006	5	Solar power: offering energy efficient portable solar harvesting products and component	First 20 years' experience in Nokia, since 2003 serial entrepreneur, and has a total has owned five companies (abroad and in Finland).	B2C & B2B	30 mins 5 pages
Gamma	CEO	2008	23	Power: renewable and efficiency energy	Worked in technical research firms for a few years and has over ten	B2B	40 Mins
Delta	CEO	2001	9	IoT technology: products and hardware	CEO of the company, initially started in the company as a sales director. Experience comes from the ICT and industry, sales, and product management.	B2B	52 Mins 8 pages
Epsilon	CEO	2007	5	Recycling technology	Background in automation and energy technology. Some experience and extensive involvement, international sales, and customer relationship.	B2B	46 Mins 8 pages

Table 3.4: Summary of the Quantitative (QUANT) and Qualitative (QUAL) Procedures and Analysis in the Publications.

Publication & Method	Summary of Procedures and Analysis	Interpretations and Outcomes
<b>Publication I QUANT</b>	<p><i>Data collection and preparation</i></p> <ul style="list-style-type: none"> <li>- Generating Likert-scale survey data</li> <li>- Translating items</li> <li>- Organizing and cleaning and re doing the data</li> <li>- Checking for trends and initial testing</li> </ul> <p><i>Exploring and analyzing the data</i></p> <ul style="list-style-type: none"> <li>- Descriptive statistics and reliability (e.g., AVG &amp; Cronbach <math>\alpha</math>)</li> <li>- Reliability check (CFA)</li> <li>- and validating survey items with BM scales (Claus, 2017)</li> <li>- Multiple regression (OLS)</li> <li>- Mediation evaluation (Sobel test)</li> <li>- Evaluating hypotheses and answering the research questions</li> </ul>	<p>Presenting and reporting the findings</p> <ul style="list-style-type: none"> <li>- Evaluating confirmed hypothesis (EO <math>\rightarrow</math> BMI <math>\rightarrow</math> international performance relationships), corroborating with literature and answering research question</li> <li>- Presenting the statement of results and hypothesis</li> <li>- Presenting models, figures, and tables</li> <li>- Writing the report to support the hypothesis in discussions and conclusions</li> </ul>
<b>Publication II QUANT</b>	<p><i>Data collection and preparation</i></p> <ul style="list-style-type: none"> <li>- Generating Likert-scale survey data</li> <li>- Translating items</li> <li>- Cleaning organizing and coding the data</li> <li>- Checking for trends and suitability of sample (KMO &amp; Bartlett test of sphericity)</li> </ul> <p><i>Exploring and analyzing the data</i></p> <ul style="list-style-type: none"> <li>- Descriptive statistics and reliability (e.g., AVGs &amp; Cronbach <math>\alpha</math>)</li> <li>- Reliability check (CFA)</li> <li>- Hierarchical linear regression (to test hypothesis)</li> <li>- Mediation evaluation (Sobel test)</li> </ul>	<p>Presenting and reporting the findings</p> <ul style="list-style-type: none"> <li>- Evaluating confirmed hypotheses (NC <math>\rightarrow</math> BMI <math>\rightarrow</math> International performance relationships), corroborating with literature to answer the research questions</li> <li>- Presenting the statement of results and hypothesis</li> <li>- Presenting figures, and tables</li> <li>- Writing the report to support the hypothesis in discussions and conclusions</li> </ul>
<b>Publication III QUAL</b>	<p><i>Data collection and preparation</i></p> <ul style="list-style-type: none"> <li>- Collecting textual interview data and secondary data</li> <li>- Transcribing interview data</li> <li>- Reading data and writing memos</li> <li>- Initial analysis (Mapping out cues, triggers, and processes)</li> </ul> <p><i>Exploring and analyzing the data</i></p> <ul style="list-style-type: none"> <li>- Coding the data into themes (BM dimensions and constructs) in NVivo</li> <li>- Conducting second phase of data iteration with theory</li> <li>- Analyzing the coded findings</li> <li>- Re-analyzing and validating summarized responses with codes</li> <li>- Reflective clustering of founders' internationalization activities and evident BM change</li> <li>- Mapping out accounts of entrepreneurial activities and decisions and BM changes using IE contextual dimensions.</li> </ul>	<p>Presenting and reporting the findings</p> <ul style="list-style-type: none"> <li>- Presenting a contextualized account of entrepreneurs' relevant internationalization activities related to BM change in context</li> <li>- Developing typologies on the relationship between international entrepreneurs' experiences and desire to change their BM based on the case</li> <li>- Reporting findings in discussions of managerial contributions and outlining areas for further research</li> </ul>

Publication & Method	Summary of Procedures and Analysis	Interpretations and Outcomes
<b>Publication IV QUAL</b>	<p><i>Data collection and preparation</i></p> <ul style="list-style-type: none"> <li>- Collecting textual data: interview data and secondary data</li> <li>- Literature review</li> </ul> <p><i>Exploring and analyzing the data</i></p> <ul style="list-style-type: none"> <li>- Reading data and writing memos</li> <li>- Content analysis of single case</li> <li>- Reflective clustering of the entrepreneur's international operations and decision-making leading to evident BM changes based on literature.</li> <li>- Categorizing how the different types of decision-making trigger BM change</li> </ul>	<p>Presenting and reporting the findings</p> <ul style="list-style-type: none"> <li>- Developing propositions based on business case study findings and reviewed literature.</li> <li>- Outlining tabular interpretations of entrepreneurs' capabilities and different decision logics (effectual and causal) in internationalization activities and corresponding BM changes (in value creation, delivery, and capture).</li> <li>- Reporting the findings discussions and conclusions</li> </ul>
<b>Publication V QUAL</b>	<p><i>Data collection and preparation:</i></p> <ul style="list-style-type: none"> <li>- Collecting interview data and secondary data</li> </ul> <p><i>Exploring and analyzing the data</i></p> <ul style="list-style-type: none"> <li>- Reading data and writing memos</li> <li>- Summarizing key responses</li> <li>- Reflective clustering of entrepreneurs' opportunity recognition activities and evident BM changes</li> <li>- Thematically coding the data in Nvivo and cross analysis in excel</li> <li>- Iterating the findings with theory</li> </ul>	<p>Presenting and reporting the findings</p> <ul style="list-style-type: none"> <li>- Outlining the entrepreneurs' recognized international opportunities and influences in the way they change their BMs for business case</li> <li>- Writing the business case</li> <li>- Reporting findings in discussions and managerial contributions and outlining areas for further research</li> </ul>

\* $\alpha$  Cronbach alpha; Confirmatory factor analysis: CFA; Average; AVG; KLO: Kaiser- Meyer-Olkin: KMO; Ordinary least square: OLS

### Validity and Reliability of the study

Reliability and validity are important determinants of rigor, quality assurance and the credibility of the research findings. Reliability relates to the stability and consistency of findings (Golafshani, 2003), hence it emphasizes that analysis should be consistent with the research findings, while validity involves determining that the findings satisfy the measurement criteria (Golafshani, 2003; Saunders et al., 2009). The quality or rigor in mixed methods are typically assessed by discussing the qualitative and quantitative strands separately and is contingent on the priority given to the individual methods used (Morgan, 2019). Quantitative rigor is typified by concepts like *validity*, which is associated with measurement criteria and candor of the results. In comparison, qualitative rigor is typified by concepts such as trustworthiness, and credibility (Golafshani, 2003). Some studies contend that reliability and validity are best suited for measurement-related studies and irrelevant to qualitative studies (Stenbacka, 2001). Lincoln and Guba (1985) maintain that validity and reliability can co-exist because demonstrating the validity is sufficient to establish the reliability of the study.

Equally valuable in mixed methods is to consider validity and credibility regarding the way both methodological strands (QUAL and QUANT) are integrated and interpreted (Onwubuezie and Johnson, 2007). Rigorous reporting of mixed-method studies is also a recently discussed assessment for demonstrating validity and reliability or credibility (Harrison et al., 2020). Validity and reliability checks are carried out in mixed methods (QUAL and QUANT) studies to ensure the accuracy of the findings (qualitative), and quality of measurement and instruments (quantitative research) (Lincoln and Guba, 1985). In simple terms, validity and reliability checks in mixed methods ensure that the study follows a scientific research process in generating research findings (Berghman, 2008)— minimizes bias fluctuation, random measurement errors in data collection, scale development, and data analysis of the quantitative study (Creswell, 2005; 2014). Thereby ensuring that the data used in a study is reliable and replicable, and the results are accurate (Creswell, 2014; Lincoln and Guba, 1985).

For the quantitative studies (Publication I and II) two different (cross-sectional survey) data sets were used. To enhance reliability of the data, it was essential to clean and prepare the data to ensure consistency in the database— the foundation for proper analysis (Berghman, 2008; Lee and Green, 2007). Thus, the data was cleaned (e.g., by checking missing values or responses) and transformed, and in order to ensure data integrity the items were condensed (re-coded) to reduce redundancy. Consistency in the scale items or survey questions (in Publication I&II) was ensured by validating with verified measure items or variables from the literature (see Appendix A). The operationalization and validity tests such as Cronbach alpha test and Kaiser-Meyer-Olkin (KMO) test, fostered measure reliability (Berghman, 2008; Lee and Green, 2007). The operationalization adopted appropriately satisfied research inquiry, and corroboration of the test with theory improved predictive validity, also demonstrating that the data used was credible (see Table 3.2).

To foster validity, the data collection for Publications I and II went through a multistage process to design and develop the question and select respondents who qualified for the survey. The survey designers (IE, IB & BMI researchers) employed special attention to item ambiguity, similarity, proximity as well as length when developing and verifying survey questions (See Data collection 3.2.2). It was also important that the blocks of questions with close theoretical or social proximity (e.g., questions addressing dependent variables), were placed in different sections of the questionnaire. Thus, minimizing possible responses bias based on social desirability and acquiescence (Berghman, 2008; Lee and Green, 2007). Indirect or negatively worded questions appeared alongside positively or neutrally worded questions, to minimize any halo effects. As shown in the data collection (section 3.2.2), the pilot questionnaire was also pre-tested by knowledgeable respondents (Entrepreneurs) to ensure that questions were clear and applicable to a wider audience. This means that multi-sided internal and external participation in examining and executing the survey improved the quality of the overall database (Haynes et al., 1995). Thus, content validity, which is the extent to which the survey instrument questions, or scale items, adequately represents the concept of inquiry was achieved (Creswell, 2005). Likert scale was used as the measurement method, thus providing straightforward patterns and deductions to analysis provided. Furthermore, to mitigate common method bias in the data collection, ex-ante precautions (e.g., using archival data, anonymity clause) and ex-post statistical tests (e.g., Harman's single-factor tests) were carried out based on suggestion by Podsakoff et al. (2003; 2012).

For the qualitative study, *Confirmability* and internal validity refer to the degree to which the results could be confirmed or corroborated by others (Lincoln and Guba, 1985). Confirmability was achieved from debriefing or joint analysis and evaluation of the research questions with co-authors—This also fostered accountability and ensured that data interpretation was clear, and reporting was within the confines of the research context. Findings generated from the integration process were contested and re-evaluated by co-authors and other researchers in the field, fostering confirmability— i.e., the extent in which the study is neutral and shaped by the reality of the respondent, not the researcher's own innate biases or interests (Lincoln and Guba, 1985). *Credibility* is the extent of candor meaning extent empirical data reflects truth or the lived reality perceived by my informants (Lincoln and Guba, 1985; Onwuegbuzie and Johnson, 2006). Non-disclosure agreements were signed, and the anonymity of the respondents was guaranteed to foster mutual trust between the respondents and the researcher, thus facilitating credible responses (Saunders et al., 2009). External credibility was reinforced when the publication went through different conferences' blind peer review (journals and conferences), and their feedback was incorporated. *Methodological trust worthiness* was prioritized in the handling of survey and interview databases. Trust worthiness refers to the appropriateness in the way the data is organized, stored, or archived (Saunders et al., 2009), and this was achieved in this research, by using the data organization's storage and analytical instruments.

*Transferability* refers to the extent that findings can be applied to other contexts. The core context is BM change in internationalizing SMEs (Lincoln and Guba, 1985).

Transferability is applicable to qualitative and quantitative study as this can be studied in other contexts. The study focused on Finnish SMEs and can be replicated across different populations, industry categories, or country contexts. *Dependability* is the requirement to account for the context within which research was carried out, by describing the changes in the setting, and the effect on the research approach (Lincoln and Guba, 1985; Onwuegbuzie and Johnson, 2006). This was achieved by clear reporting and outlining of the formalized steps used in data collection, analysis, and coding of the qualitative and quantitative study.

*Construct validity* is the extent to which measures behave consistently and how well instruments are indicative of the theoretical construct being measured (Fink, 2010). Items used (qualitative and quantitative) to explore business models were derived from similar measures and concepts. (e.g., BMI scales by Clauss 2017 (see section 2.3). For this reason, semi-structured interviews were carried out with the interviewees, to gain in-depth knowledge of the research phenomenon, and to understand the underlying inferences. The interview questions were also posed without unnecessary ambiguity, and verified by co-authors to ensure reliability, and to reduce the potential of bias in the survey and interview responses. Rigor was strengthened by iterating with the data throughout the analytical process. Secondary and supplementary data supported triangulation and ensured the trustworthiness, quality, and credibility of the results (Lincoln and Guba, 1985). They also served as a yardstick for generalizing the results.

Cross-cultural considerations and reflections were taken into account during the data collection, to minimize the researcher bias in the interviews, evaluation of the responses, analysis of the data, and reporting of the results. Collecting data from small firms is complicated, particularly when it is about a topic that may not be immediately clear to the interviewees. Thus, respondents may need more in-depth explanations of the questions they are being asked. It also takes time to gain the interviewees' trust, which is vital to their willingness to communicate freely, and give rich information and full descriptions of firm operations (Sinkovics et al., 2008). This approach reduced the likelihood of cultural bias, which can affect the credibility of the researcher's findings (Marschan-Piekkari and Welch, 2004). During the interviews and collection (and as a scholar with a different cultural background), I solicited help from a local (Finnish co-author) to cross-check my interview questions to ensure that they did not pose any cultural issues or confusing terminology that could have affected the responses. A Finnish-speaking colleague also accompanied me to carry out the interviews. Sinkovics et al. (2008) recommends that, at the problem definition, data collection, data handling and preparation stages, the researcher should pay attention to equivalence issues, to minimize bias, and misinterpretation, while improving the overall study validity. I also sought to be transparent and demonstrated that I was aware of my possible cultural reflexivity and possible biases. Thus, including a native scholar in the data collection and analysis processes in all five publications lent greater credibility to the research, and enhanced the generalizability and reliability of the contributions.



## 4 Review of the Publications

This chapter outlines the main findings and contributions of each of the five appended publications. The outline provides a review of all the publications that drive the arguments in the dissertation. The review provides summaries of the publications: the aim of the study and the methods adopted, and the key findings and contributions. The core focus in all publications is the BM change in IE context. The first two papers used a quantitative research approach, while the last three adopted a qualitative and conceptual approach. The quantitative and conceptual papers focused on the relationship and effect of innovative change (BMI) on the success and performance of internationalizing SMEs. The qualitative papers examine the BM change activities and roles of entrepreneurs in their internationalization journey. The qualitative investigation delved deeper going beyond the manifestation of change to contextually explore understand the underlying activities how international entrepreneurs make decisions that drive change in their BM. The findings from the qualitative and quantitative studies were mutually reinforcing. They provided a broad scope for understanding how BM changes and the iteration between BM value dimensions can facilitate a better awareness of how change takes place as firms internationalize. A synthesis of the compiled findings from the five publications is also provided. The synthesis provides a snapshot of how the different findings are integrated and how the discussions from the different publications weave together in the discussions and contributions of the dissertation. The synthesis is adapted based on the findings and concepts explored in the dissertation. It demonstrates the interwoven role of IE and BM change in explaining the internationalizing activities of entrepreneurial firms. The synthesis also depicts the interconnections between the various publications and how they contribute to answering the main research questions. A tabular summary of the publications and outcomes is found in Table 4.1, while a synthesis of the publications and findings is provided in Figure 4.2.

Table 4.1 : Summarized review of Appended Publications

Publications	Aim of the study	Method	Key Findings	Main Contribution
Business Model Innovation and Entrepreneurial Orientation Relationships in SMEs: Implications for International Performance	To examine the mediating role of BMI and EO on the international performance of SMEs.	Quantitative study: Survey data of 95 internationally operating Finnish SMEs.	The study revealed that EO has a positive and significant effect on BMI, with BMI also being positively and significantly related to the international performance of SMEs. BMI also mediates the relationship between EO and international performance. This implies that SMEs that innovate their BMs in response to unfamiliar, dynamic, and uncertain international market conditions have a better chance at enhancing their international performance.	The study identified that EO and engagement in BMI are paramount for SMEs to remain competitive and satisfy international market requirements. BMI is also considered a valuable independent or ad hoc approach for SMEs to support internationalization, strategy, and augmenting resource and capability constraints.
Business Model Innovation in International Performance: The Mediating Effect of Network Capability	To examine the roles of BMI and network capabilities in the internationalization of SMEs.	Quantitative study: Sample of 210 internationally operating Finnish SMEs.	The study revealed, First, that network capability predicts BMI in SMEs. Second, BMI predicts better international performance. Third, BMI mediates the relationship between network capability and international performance. This study contributes to the literature by establishing network capability as an antecedent of BMI in achieving and sustaining international performance.	The study identified that network capability could predict and facilitate BMI; consequently, the mediating effect of BMI has implications for the international performance of SMEs.
Business Models in Context: Entrepreneurs (Re)Modeling their Business Towards an International Venture	The study contextualizes international entrepreneurial experiences and behaviors in the early phases of creating BMs in relation to the SME internationalization journey.	Qualitative study: Case study (a content-oriented analysis of international entrepreneur' s narratives).	Four main typologies (tactical, experimental, control, inventor) of international entrepreneurs were developed, describing their international experiences and their desire to change BMs as they engage with the international market.	The study revealed that the urge to change BMs is based on the entrepreneur' s background, past contexts, which subsequently drives the company' s initial point of departure in value creation, proposition, and capture.

<b>Publications</b>	<b>Aim of the study</b>	<b>Method</b>	<b>Key Findings</b>	<b>Main Contribution</b>
Business Model Innovation in the Internationalization of SMEs: The Role of Causation and Effectuation	The study examines the role of effectuation and causation, both of which are decision-making logics, and how the combined effects of these logics influence BMI as SMEs internationalize.	Conceptual study and business case of an internationally operating SME.	The study offers four main propositions. First, SMEs that engage in BMI can internationalize more quickly and successfully than those who do not engage in BMI. Second, effectual decision-making logic in international SMEs leads to increased BMI. Third, causal decision-making logic in international SMEs leads to increased BMI. Fourth, the more SMEs combine effectuation and causation in their international decision-making activities, the greater their likelihood of engaging in BMI.	The study finds that, in dynamic environments, the combination of causation and effectuation boosts an SME's innovative capability compared with a sole focus on planning or control of events. Effectual and causal logics do not have to be oppositional or mutually exclusive. The decision-making mechanism is an essential determinant of BM change and influences how a BM can be adapted to accommodate market dynamics and uncertainties in the international market.
International Opportunity Recognition and of Business Model Change in Internationalizing SMEs	The study examines how internationalization actions in early stages influence IOR, the resulting changes, and the willingness to change the BM.	Qualitative study: A case study of four Finnish SMEs.	First, Entrepreneurs are the drivers of BM change and tend to make the most comfortable changes in situ. Second, BM change does not necessarily affect or occur in every dimension or component. Instead, entrepreneurs will pursue identified opportunities forward only if the opportunity is viable and immediately lucrative. Third, the case entrepreneurs were reluctant to change their initial BM if it required changing their core value proposition.	SMEs may not readily make significant changes in their model to accommodate international opportunities rather if the latter requires significant changes to the BM. SMEs may instead forgo that market expansion. The study revealed most SMEs made incremental BM changes. Recognized opportunities were pursued only if the profit potential was highly lucrative and if moderate or incremental changes were prioritized.

#### **4.1 Publication I: Business model innovation and entrepreneurial orientation relationships in SMEs: implications for international performance**

##### **Background and objectives**

The study examines the role of BMI and (EO) in SME internationalization by examining BMI as a mediating variable in the EO-international performance relationship. The objective was to understand better international entrepreneurial behavior and the resulting implications of firm-level BMI activities for international performance. The study examined the role of BM and BMI as potential contributors and antecedents influencing EO as a strategically oriented pathway in IE, which explains the international performance of new ventures (Child et al., 2017; Foss and Saebi, 2017; Evers et al., 2019). The study also responds to the scholarly call for more studies to incorporate additional relevant factors to strengthen the direct EO-performance relationship (e.g., Wiklund and Shepherd, 2005; Covin et al., 2006; Wang, 2008; Rauch et al., 2009). Thus, including BMI in the heavily researched EO-international performance relationship supports the proposition that EO influences entrepreneurial action and initiatives to undertake BMI and SME performance in foreign markets.

##### **Main findings and contribution**

The study contributes on multiple fronts to the literature on BMs, SME internationalization strategic orientations, and IE. It demonstrates the effects of and linkages between BMI, EO, and the international performance of internationalizing SMEs. Three central conclusions emerged. First, BMI mediates the relationship between EO and international performance; second, EO has a positive and significant effect on BMI; and third, BMI positively and significantly correlates with the international performance of SMEs. There was also a positive but non-significant direct relationship between EO and international performance, in line with the notion that the EO-international performance relationship is not necessarily immutable.

The findings also strengthen scholarly claims that proactive, innovative, and risk-takers SMEs may have a better commitment, management, and propensity to rapidly grow their operating margins in international markets (Amit and Zott, 2012). They can do so by innovatively changing their BMs, especially as they venture into uncertain and competitive international environments. This supports the view that an EO, a risk-taking mindset, and engagement in BMI are all paramount for SMEs that want to remain competitive and satisfy international market requirements (Jantunen et al., 2005; Lindgardt et al., 2009; Child et al., 2017). BMI can be used as an alternative and ad hoc approach that entrepreneurs can leverage to categorize the relevant value propositions and capture activities that support their firms' strategic growth and to augment resource and capability constraints that SMEs face as they venture into international markets (Sainio et al., 2011; Clauss, 2017).

## **4.2 Publication II: Business Model Innovation in International Performance: 101 The Mediating Effect of Network Capability**

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Overall, the study contributes to the BMI and IE discourse (Teece, 2010; Zott and Amit, 2011; Child et al., 2017, Foss and Saebi, 2017; Acosta et al., 2018; Massa et al., 2017) and elucidates the role of BMs as an essential factor in strategic orientations and the performance of internationalizing SMEs. The study further reveals that the strategic orientation, and its unique capability to change its BMs are important yardsticks that entrepreneurial firms should prioritize as they seek to grow and thrive in uncertain international markets. The research contributions are considered timely because only a few studies quantitatively combine EO, BMI, and performance. It is thus a response to the calls for studies that examine how the pathways of internationalizing ventures evolve and investigate the implications to performance (Lumpkin and Dess, 1996; Wiklund and Shepherd, 2003; Evers et al., 2019).

## **4.2 Publication II: Business Model Innovation in International Performance: The Mediating Effect of Network Capability**

### **Background and Objective**

Both networks and BMs contribute to the internationalization of SMEs. However, though they have been investigated independently, they have not been studied simultaneously. Publication II aimed to empirically enumerate the relationship between BMI and networking as a DC (Teece et al., 1997, 2010) in the internationalization of SMEs by drawing on a sample of 210 internationally operating Finnish SMEs. Regression and mediation analyses were adopted to investigate the implication of network capability as a driver or antecedent of BMI and achieving international performance.

### **Main Findings and Contribution**

This study contributes to the literature by establishing network capability as an antecedent of BMI in achieving and sustaining SMEs' international performance. The study produced three key conclusions: first, network capability predicts BMI in SMEs; second, BMI predicts better international performance; and third, BMI mediates the relationship between network capability and international performance. The results showed that the relationships between BMs and network capability are particularly fruitful and facilitate BMI in international SMEs. While network capability may predict BMI, the latter can have a mediating effect on firms' international performance.

The study found that, although BMI is a crucial firm-level activity that underlies the successful international expansion of SMEs as identified in Publication I (Sainio et al., 2011; Asemokha et al., 2019). By integrating networking capability, managers improved their internationalization performance. Therefore, we found that SMEs should develop new and leverage existing networking capabilities to implement valuable BM changes and facilitate coordination of international operations across borders if they want to transition into new markets to compete and thrive internationally. The study is pertinent to IE and BM research and partly to the strategic management literature because it draws

on the DC perspective (Teece et al., 1997, 2010) and argues for networks as a DC that is an important enabler of BMI, especially for the internationalization of SMEs.

### **4.3 Publication III: Business Models in Context: Entrepreneurs (Re)Modelling Their Business Towards an International Venture**

#### **Background and Objective**

The study explores individual entrepreneurs as sense-makers and their role in the core firm-level processes that shape the early phases of international ventures. This area is under-researched in the BM discourse. This study helps fill the gap in the literature between BMs as ‘isolated’ and ‘de-contextualized’ constructs in IE. It examined entrepreneurs as focal sense-makers of their businesses and how their decisions influence BM changes as they internationalize. Using a qualitative approach, the study investigated how entrepreneurs make sense of different events and conditions that influence the emergence and exploitation of international opportunities to create, capture, and deliver value as they seek new international markets. The study reflects how different contextual dimensions (social, temporal, spatial, industry, and organizational) of their entrepreneurial journeys drive sensemaking behind the BMs of internationalizing firms (Zahra et al., 2014). The study emphasizes how the individual entrepreneur creates value in context by examining how the entrepreneur’s background, experience, and social context combine to drive the company’s initial point of departure in value creation and proposition. The study concurrently explores how the individual-level and entrepreneur-based processes, and the contextual mechanisms of the initial business idea can be found in the entrepreneur’s close connections, expertise, and competence.

#### **Main Findings and Contributions**

The key contribution lies at the intersection of the BM and IE literature. It demonstrates that an entrepreneur’s contextual experiences and capabilities influence the creation and iteration of BMs in relation to a firm’s internationalization journey. The study finds that BMs are functional boundary objects and potentially boundary-breaking tools that entrepreneurs can leverage as they transition or monitor some or all of their operations or move into new markets, including international markets.

The study contributes to the BM literature by bringing the individual perspective to the exploration of firm-level BM change. Most studies explore the BM as an isolated construct (Stampfl and Prögl, 2011) without considering the individual-level analysis of the entrepreneur. The study also extends the understanding in both research and practice on the relevance of individual-level reasoning and the implications of their choices for the changes in their BMs as they internationalize. This approach transcends individual occurrences and provides a gestalt view of the activities of different international entrepreneurs and how their actions concurrently influence the BM and determine their internationalization processes (e.g., Acedo and Jones, 2007; Di Gregorio et al., 2008).

### 4.3 Publication III: Business Models in Context: Entrepreneurs (Re)Modelling 103 Their Business Towards an International Venture

The study provides a contextualized viewpoint on how entrepreneurs made sense of the relationships, events, and situations of which they have been part (Rasmussen et al., 2001) and how that context has played a role in the creation and exploitation of international opportunities (Mainela and Puhakka, 2009; Mainela et al., 2014). Four main typologies (the experimental entrepreneur, inventor entrepreneur, tactical entrepreneur, and control entrepreneur) of international entrepreneurs were developed using a two-by-two table that further categorized the main findings. As to the case, there was a relationship between the international experiences of entrepreneurs (e.g., general work experiences and education) and their urge to change their BMs.

High	Experimental Entrepreneur	Tactical Entrepreneur
Urge to change the business model	Inventor Entrepreneur (Novice)	Control Entrepreneur
Low	Low	High
	International experience and knowledge	

Figure 4.1: A typology for the case entrepreneurs in relation to their international experiences, knowledge and urge to change the BM.

The *experimental entrepreneur* describes an entrepreneur whose prior business ownership and applicable background may include limited international experience. Yet, this entrepreneur is flexible enough to change the BM with a view toward the international market that accommodates decision-making, especially in uncertain times. This entrepreneur experiments with different value mechanisms independently or synchronously to find the optimal operational BM before going international. The *inventor entrepreneur* or *novice entrepreneur* has little or no international experience and is mainly fixated on improving product performance and development. They tend to be more focused on the initial business idea, making it hard to move toward a scalable BM. No well-defined approach to and understanding of their BM development processes, both domestically and internationally, emerged. The *tactical entrepreneur* has business ownership that makes them capable of tactically iterating with dimensions of their BM and holistically prioritizing international experience. This entrepreneur has extensive international experience in both product and process development and relevant internationalization activities. The *control entrepreneur* has relevant education and some

international experience. However, this did not necessarily influence this entrepreneur's willingness to change or internationalize the existing BM. Some degree of rigidity and caution in decision-making can be seen as the firm's internationalization, as with targeting predictable or familiar market segments—'psychically or culturally safe niches.'

Overall, the study contributes by providing an iterative and contextualized view of the actions and interactions of entrepreneurs as they (re)model their business into an international venture. Contextualizing the data also showed how individuals' experiences and contextual BM creation and iteration grounded their approaches as they internationalized their ventures.

#### **4.4 Publication IV: Business Model Innovation in the Internationalization of SMEs: The Role of Causation and Effectuation**

##### **Background and Objective**

The study explored two different streams of literature: BMI and decision-making logic. It examined decision-making logic and BM change and the implications for internationalization success. Decision-making logic is a key concept in entrepreneurship research that explains the behaviors and actions of firms (Sarasvathy, 2001) as they internationalize (Child et al., 2017; Fütterer et al., 2018). Decision-making logic and its corresponding influence on BMI illuminate entrepreneurial behavior, managerial choices, and implications for BM change as firms internationalize. The limited understanding of BM change in firms and how the various decision-making logics influence this change was the motive for this study (Aspara et al., 2011; Torkkeli et al., 2015; Child et al., 2017). It thus helps to fill the theoretical gap regarding the dynamics of effectuation and causation, potentially uncovering how successful international entrepreneurs discover and capture value. The goal of the study was to contribute theoretically to the discourse in research that decision-making and BM change are expected to be interlinked. The study sought to determine whether managerial choice can explicate how and why changing the BM can make internationalizing SMEs successful (Nummela et al., 2014; Sitoh et al., 2014). The findings also provided evidence that most decision-making logics have implications for the BM change of internationalizing ventures and vice versa.

##### **Main Findings and Contribution**

This conceptual study examined the independent and combined effects of effectuation and causation as entrepreneurial decision-making logics in the BMI of internationalizing SMEs. The study offers four main propositions. The first states that SMEs that engage in BMI can internationalize better and quicker than those who do not. The study identified that firms were able to leverage innovation and change their BMs and related international activities and routines more quickly and effectively than firms that did not engage in BMI. Therefore, international entrepreneurs who can undertake BMI can leverage them as tools for communicating, managing, and organizing their value proposition delivery and

#### **4.4 Publication IV: Business Model Innovation in the Internationalization of SMEs: The Role of Causation and Effectuation** 105

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capture activities (Osterwalder and Pigneur, 2010; Foss and Saebi, 2017). Based on this proposition, the study proposed that managers prioritize their BMs and seek new avenues to innovate and adopt activities that speed up the internationalization process.

Second, the study accords with recent considerations (e.g., Harms and Schiele, 2012; Futterer et al., 2018) regarding the value of effectual decision-making logic as an enabler of BMI, especially for small internationalizing firms with limited resources and capabilities. This reinforces the dominant notion that effectuation fosters proper use and orchestration of firm resources and supports strategic decision formulations that favor future competitive advantage as SMEs internationalize. However, some SMEs make decisions regarding product or technology innovation, partners, and customers (Sitoh et al., 2014; Harms and Schiele, 2012) intuitively to control future circumstances rather than to predict them. Therefore, managers that adopt effectual decision-making tend to take initiatives proactively and innovatively within their means to allow them to control market situations and trends, especially when it comes to capitalizing on international opportunities. Nonetheless, SMEs may adopt effectuation in their BMs as a coping mechanism or a strategy for thriving in and surviving market complexities. Thus, managers may adopt effectuation in their decision-making to support the creation and discovery of international opportunities.

Third, causal decision-making logic may lead to an increase in BMI among internationalizing SMEs. This may be because decision-makers can adopt causation as a decision approach in developing their BMs to actively address the uncertainty they may encounter as they venture into international markets with their requirements and standards (Sarasvathy, 2001; Torkkeli et al., 2012). Thus, there is a need for predictive rather than control-based planning. This may appear, for example, in managers making business plans or calculating market and competitive analyses to maintain and increase their knowledge of the status quo and ensure that the expected returns are achieved. Therefore, entrepreneurs with predictive capabilities, alertness, and knowledge about adapting their repeatable core processes are valuable in BMI. However, in early internationalizing firms that lack experience, some predictive approaches may be used as coping mechanisms and adapted by entrepreneurs to stay ahead of market trends and identify latent customer needs. Fourth, effectuation and causation can co-exist. Therefore, internationalizing SMEs can leverage effectuation and causation simultaneously as they innovate their BMs to obtain a nuanced and holistic understanding of their environment (e.g., Sitoh et al., 2014; Nummela et al., 2014; Futterer et al., 2018). This is so because decision-making is a cognitive process centered around varying degrees of uncertainty, knowledge gaps, and bounded rationality. Thus, the study argues that it is simply not an option for firms or business owners to remain redundant in continual anticipation of successful market outcomes (Schneider and Spieth, 2013).

## 4.5 Publication V: International Opportunity Recognition and of Business Model Change in Internationalizing SMEs

### Background and objective of the study

BMs and IOR have been explored in the IE literature largely as independent or separate areas of study. This paper connects these two research streams to gain more insight into BM change in the internationalization of SMEs. The objective is to understand how internationalizing SMEs recognize international opportunities and how they change their BMs. The empirical part of the research is based on multiple case studies of four internationalizing Finnish SMEs in the cleantech sector. The study offers research insights into the relationship between BM change and the IOR of internationalizing firms. The study takes into consideration entrepreneurial action in the early phases of internationalization; it provides reflections that stimulate even more extensive deliberations on the way companies sought out new opportunities and how they changed their business activities in seeking them.

### Main findings and contributions

The findings showed that entrepreneurs recognized, and prioritized opportunities based on their perceived value and made moderate to incremental BM changes. Most of which were in the 'value proposition and capture' sub-component, especially the 'key offerings' and 'key customers' elements; minimal changes were observed in the 'value creation' component. Furthermore, the initial BMs of the firms remained relatively consistent. The findings showed that internationalizing firms may be critical about their value propositions (core technology) due to the cost implications and technological advantages, by which they operate their initial BMs and make incremental changes in response to identified opportunities (Cavalcante et al., 2011). This is because the firms have limited resources and capabilities and thus have paced themselves to make radical BM changes. The firms engaged in deliberate searches for new market opportunities through value marketing, exhibition, and trade activities, either via agents or with sales partners, in a cost-effective way to create visibility and market awareness and ultimately gain new markets. Identified market opportunities involved obtaining information from contacts, networks, and relationships, especially when seeking new customers abroad. This finding contributes to scholarship by showing that IE firms may exploit their networks and other management capabilities to foster the identification of opportunities (Onetti et al., 2010; Child et al., 2017; Guo et al., 2017; Zucchella et al., 2018). These BM changes in the early phases appeared to be targeted toward the firms leveraging their prior experience and networks to speed up internationalization. BM changes are also made to achieve balance in daily operations and foster IB growth rather than seeking to disrupt the international market. While firms appear to seize international opportunities suitable for their BMs, the opportunities that did not match the resources and capabilities of the firm or were too cost-intensive to be pursued. A barrier to BM change was the novelty of the industry and the novelty of its technology. As a result, the entrepreneurs also did not readily change their value propositions. They temporarily switched their value

propositions in response to international customers with the aim of reverting to their initial value propositions when they identified the right customers.

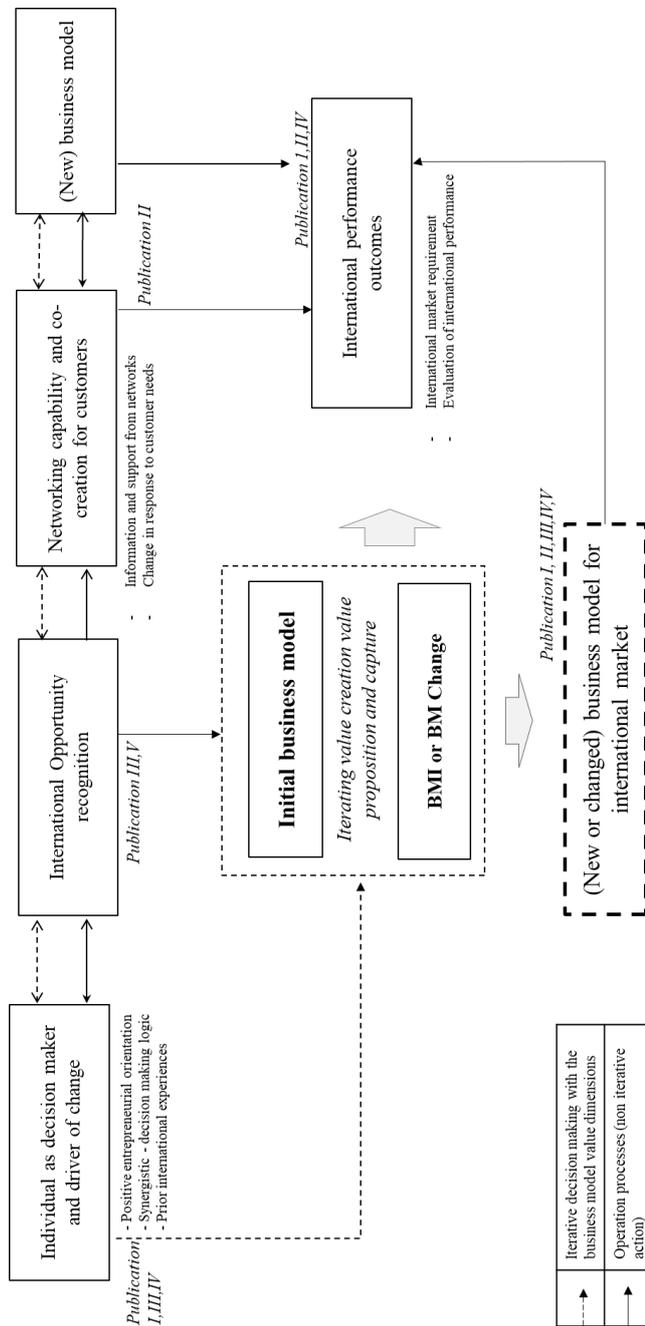


Figure 4.2: Synthesis of the findings: the role of BM change in internationalizing SMEs. The findings show the relationship of BM and BM changes from different IE lenses: the entrepreneur as a sense-maker and manager of the organization; EO (proactive, innovative, and risk-taking in BM modification); decision-making logics (effectuation and causation); and the role of networks as a DC and implications for performance.



## 5 Discussion and Conclusions

This chapter discusses the main research findings from the five publications appended to this dissertation. It begins by revisiting and linking the research questions to the various results and findings presented in the dissertation. Subsequently, it draws from the empirical findings of the appended publications, and then, theoretical and management practice implications are outlined. Finally, the chapter concludes by outlining the limitations of the study and providing suggestions for future research.

### 5.1 Answering the research questions

The synthesis of the results and findings in Publications I–V answers the main research question: *What is the role of business model (BM) change in international entrepreneurial firms?*

This study provides insights into the role of BM change in IE, by conceptualizing and revealing the viability and functions of BMs in relation to prominent IE constructs, such as entrepreneurs (drivers of change), the role of their decision-making processes, and the actors with whom they collaborate when creating their international ventures. The role of BM change is to help firms map and analyze their core business activities. BM change can be employed as an instrument to innovate and adapt a firm's business process. By the same token, it can facilitate internationalization.

The findings reveal that, the role of BM change in the internationalization activities of firms is pertinent and can holistically explain international entrepreneurial actions. This contribution lies at the intersection of BM and IE research. First, the study identified that BM change can illuminate and explain the activities and behaviors of entrepreneurial ventures, and the environments (internal and external) in which they operate. Second, “*opportunity*” is at the nexus of BM and IE relationship. It enables the exploitation of opportunities after recognizing the opportunities. However, recognizing international opportunity is a precondition and stimulus for BM change, and its exploitation can explain the motives for BM change. Recognizing opportunities can be seen as a conduit for orchestrating BM change in response to internal or external stimuli for the organization.

Third, the study also identifies that BM (change) is relevant as a concept in itself and can be considered a complementary concept toward discussing the contexts of IE. Firms can identify and monitor areas of organizational, technological, or strategic lapse or progress by monitoring their BM changes. These changes are evident in performance or mapping, and in reflections on past, present, and future actions or intentions. Thus, BM changes can be customized to support firm-specific performance or even country-specific requirements as firms internationalize. Furthermore, managers spearhead decisions and outline the actions that lead to the creation or modification of their *initial or existing BM*. Hence, the decision-making is a vital precursor at the crux of (BM) change.

BM change underpins entrepreneurial action and managerial decision-making and gives meaning to the behavioral patterns of internationalizing firms. Thereby revealing and providing meaning into the logic driving organizational management, strategic decisions, and experiences, which otherwise would not be identified through direct inquiry. By the same token the findings show that entrepreneurs who hone their capabilities to innovate their BM, develop their proficiency (e.g., network capability) to minimize external uncertainties, thereby facilitating internationalization. Managers with the orientation to deduce strategic areas for BM change are more likely to align with their internationalization goals more efficiently.

This study demonstrated that BMs provide the central advantage of explaining how a focal firm creates and captures value for itself and stakeholders, and ensure BM coherence (Zott et al., 2010; Gassmann et al., 2016). BMs serve as a boundary object through which managers and stakeholders can holistically review the core activities that drive the functioning and performance of their business. This interplay of BM (change) and actions of stakeholders reveals stakeholders' needs or requirements, thereby providing beneficial information for managers to analyze and make decisions in response to such needs (Aspara et al., 2013; Nummela et al., 2014; Abrahamsson, 2016). Practitioners can leverage their BM to trace and evaluate their own core activities in relation with stakeholders' requirements, towards providing custom solutions for the delivery and capture of value.

The capability to modify a BM is what makes the business model change important, as it allows a firm to revise an existing model. BM and business model change are relevant to both new and established international entrepreneurial firms, because changing the BM helps firms navigate different internal and external market contexts. The role of the BM is to enable firms, develop or reengineer the core routines or activities that can help them compete in the home and international market. Thus, the BM is an all-encompassing mechanism through which firms fulfill their business obligations.

Overall, the discussions on *BM change* in literature remain broad. There is a need for more understanding on the concept of BM and BM change. This is easier said than done, as academics typically discuss the orchestration of BM change without outlining clear steps. The empirical findings showed that mapping BMs may not be an easy task, as labelling different concepts without construct clarity, and parameters for BM change, makes it challenging to understand change dynamics in the BM literature.

RSQ1 (Publication I) explored: ***What effect do entrepreneurial orientation (EO) and business model innovation (BMI) have on the international performance of small and medium-sized enterprises (SMEs)?*** This finding reveals the positive role of BMI and its implications for EO and international performance relationships. Illustrating that strategic orientations have enormous potential to explain the different dynamics of BMs, which are evident in a firm's behavior. Specifically, BMI and EO are important antecedents in the internationalization and performance of SMEs. The study also shows that the combined aptitude for innovativeness, proactiveness, and risk-taking, especially in

uncertain and competitive international environments, is vital for performance. This in turn reinforced the argument that a firm's EO and a proactive mindset determine the extent to which it is willing to change—its BM to compete or satisfy international market requirements. The study also tentatively establishes that BMI is a valuable ad hoc approach for SMEs, especially in supporting internationalization strategies and augmenting resource and capability constraints. It was also illustrated that while SMEs modify their BMs to satisfy international market contexts and requirements, the concurrent possession of a positive EO allows SMEs to thrive and perform better in foreign markets. As a result, the combined effect of EO and systematic changes in the core processes, that foster innovation and change, also influence the proclivity of firms to internationalize or adapt their BMs.

RQ2 (Publication II) addressed: *What is the role of BMI and network capabilities in the internationalization and performance of SMEs?* This study finds that changes to BMs may require entrepreneurs to develop and nurture dynamic capabilities to sense, and seize opportunities and exercise their capacity to create, develop, and transform those opportunities into value. Otherwise, the development of their BM could become constrained (von den Eichen et al., 2015). The study found that both internal and external networks enable firms' transition from merely identifying international opportunities into executing them. However, networks are a source of information, knowledge, and resources that small firms may not possess. By leveraging their networking capabilities, these firms can strategically tap into new or existing relationships that compensate for their inadequacies, mitigate risks, strengthen performance, and augment limited resources and capability constraints. The study also showed that network capability fosters BMI and change in the firm's international operational processes—to exploit potential value, and supplement limited resources and capabilities for capitalizing on new opportunities, thereby mitigating risks by strengthening performance. Although the capabilities that support international growth are numerous. Exploring networking as one of those capabilities in the context of BMI has been scarcely researched. This study adds to the body of knowledge (in BMI, DC, and IE), by verifying the role of networks as a dynamic capability, and conduit for facilitating the internationalization of entrepreneurial firms.

RQ3 (Publications III and IV) examined: *How are the experiences and decision-making of international entrepreneurs manifested in how they change their BM?* This finding illustrates how entrepreneurial action affects the present situations, and how future scenarios affect business contexts (i.e., economic situation, market trends, networks) in the creation and capture of value. This result was achieved by tracing the context of the entrepreneurs' accounts (Publication III), and by exploring the decisions that framed their changes (Publication IV). Therefore, without relegating the findings to the individual papers, the study juxtaposed the context in which the phenomenon was situated, providing useful insights to the research question. Publication III examined the activities of SMEs and their entrepreneurs as focal actors who make sense of how they approach international opportunities at their firms. The study finds that entrepreneurs are the sense-makers of events and situations, that shape the configuration of their BMs as they seek international opportunities. Given that the entrepreneurs are forerunners and responsible decision-

makers of their ventures, their mental schemas inform the dynamics of interrelated activities that shape the (re) modeling of their ventures into international market contexts. This study identified that entrepreneurs with more international experience, previous business ownership, education, and professional knowledge contribute to changes in the BMs as their firms internationalize. However, prior experience alone does not entirely determine that founders will embrace internationalization or international opportunities. Four main typologies of international entrepreneurs were also developed based on the findings: *the tactical entrepreneur*, *the experimental entrepreneur*, *the control entrepreneur*, and *the inventor (novice) entrepreneur*. These typologies helped to categorize the different choices that drive entrepreneurial action in relation to international experience or the lack thereof and the willingness to change BMs, as entrepreneurs engage with or attempt to enter international markets.

Publication IV illuminated on the connection between BMI and decision-making logic (effectuation and causation), and how it influences the success of internationalization. The assertions and propositions made in this publication were supported by a single business case, to provide more extensive insights into the effectual and causal decision-making of an actively an internationalizing SME (Siggelkow, 2007) that could be further tested with the empirical data. The findings showed that decision-making and BMI are linked, which is relevant to understanding entrepreneurial behaviors and actions and changes occurring in a BM. This may be because SMEs that engage in BMI can internationalize better and quicker than those that do not engage in BMI. The propositions in this work illuminated that SMEs may adopt effectuation to spur creativity or the discovery or enactment of international opportunities. Conversely, effectuation and BMI can be used as coping mechanisms or strategies for thriving and surviving market complexities.

Causal decision-making logic in international SMEs leads to increased BMI as the predictive capabilities, alertness, and knowledge of causal decision-making support innovation and adapt repeatable core processes of a firm's value structures. However, in some internationalizing firms, predictive approaches may be utilized as coping mechanisms, and adapted by entrepreneurs to stay ahead of market trends and identify latent customer needs. Combining effectual and causal logics can potentially lead to wider array of choices, enabling firms to choose the best option, and then take actions in their best interest, thereby facilitating the appropriate BM change to enhance their competitive position in international markets. The study finds that due to resource constraints, firms may be unprepared for the changes needed to enter the international market. However, instead of solely focusing on a single option, leveraging the duality of decision-making (e.g., looping, alternating between choices) fosters BM change and a better propensity to prosper and grow.

RQ5 (Publication V) addressed: ***How are BM changes manifested as SMEs recognize international opportunities?*** This study explored how international entrepreneurial firms employ BM change as they recognize new opportunities, especially in the early stages of internationalization. It reveals that early international entrepreneurial actions may initially

commence with moderate BM changes. The changes may be tactical and geared toward minimizing risks. Therefore, they may be compelled to change their BMs only when the recognized opportunity shows the promise of guaranteed returns. The study also showed that firms may choose to retain their existing BMs and adopt alternative model to execute on an opportunity. Thus, the BM could set boundaries on the extent of to which international opportunities can be pursued or exploited

Early internationalizing firms tend to change their BMs incrementally by extending their existing value activities, not necessarily making radical BM changes, except for when an opportunity is guaranteed. However, threats from the environment or external stimuli may lead to reactive BM changes, which may also be encountered as a potential opportunity if the firm deems the implications of change to be profitable (Saebi et al., 2016). Additionally, having relatively limited resources and having already invested much in the existing value proposition early on may affect these firms' willingness to internationalize early and to change course. This may be an underlying reason for minimal BM changes. The study concludes that though opportunity recognition is an important trajectory in the early stages of venture creation, interrelated routines, resources, and capabilities of small firms are often inadequate to satisfy market-specific requirements limiting the initiatives for changing the BM. Thus, attempts to shift the BM to an international setting may be challenging to implement. International entrepreneurial firms may however use their BM to set boundaries or permit actions (e.g., interactions with actors in the routines) that lead to BM change. They thereby use the BM as a boundary object to test the feasibility or scalability of an international opportunity.

## 5.2 Theoretical contributions

This dissertation and the appended publications used the IE literature as a theoretical lens and foundation to examine BM change among internationalizing SMEs. The dissertation makes several theoretical and conceptual contributions to the BM, IE, and SME internationalization literature and partly to the strategic management research. The relationship between BM change and IE was the central research focus.

### 5.2.1 Contributions of the individual papers

#### *Entrepreneurial orientation (EO) as a strategic orientation in explaining business model (BM) change*

The study contributes to the understanding of the complementary effect of EO in BMI and performance (Publication I), by demonstrating that EO as a strategic orientation, accelerates the internationalization of SMEs, and improves their performance (Lumpkin and Dess, 1996; Jantunen et al., 2005). It also reveals that the combination of EO attributes (proactive, innovative, and risk-taking) positively influences performance, and is further enhanced by the firm's capability to innovate their BMs (Publication I). This finding is backed by the notion that BMI is a disruptive activity, which requires all the attributes of EO, in order to effectively take on the task of change—in response to internal

stimuli (e.g., Lumpkin and Dess, 1996; Jantunen et al., 2005; Jones and Coviello, 2005, Child et al., 2017), and the need to improve performance in the dominant logic of the firm. Thus, the demonstration of positive entrepreneurial orientation reinforces strategic change which has implications on actions and decisions, that facilitate BM innovation and improvement of performance (Aspara et al., 2010; Laufs and Schwens, 2014).

The adds to the body of knowledge that BMI has the potential to co-exist as an integrative concept and strategic orientation to reveal the latent growth curve models or potential of an internationalizing firm (Wirtz and Daiser 2017; Amit and Zott 2011). Subsequently, borrowing from the transparency of the EO–performance relationship (Hakala, 2011; Simon et al., 2011), the hypothesis in (Publication I) makes the contribution that firms that can strategically change their BMs in accordance with the particularities of their venture type, and are likely to perform better. This empirical finding also responds to calls for additional variables to explore the influence of other strategic orientations and performance relationships because they have the potential to advance research on BMs (Jantunen et al., 2005; Aspara et al., 2010; Acosta et al., 2017).

*Network capability as a facilitator for business model (BM) change and internationalization*

The findings in Publication II examined how SMEs create and leverage existing networks to support value creation, delivery, and capture in new international markets. The findings confirm that networking capability positively influences BM development and fosters the execution of realized opportunities at various phases of internationalization. In other words, leveraging past experiences and recalling previous relationships evoke changes that accelerate the internationalization of small firms with limited resources. This accords with other studies that have established that SMEs leverage their networks and alliances with suppliers and investors to access external market knowledge and align their BMs to satisfy foreign market requirements and demands (Oviatt and McDougall, 1994; George and Bock, 2012; Child et al., 2017; Reuber et al., 2018). Thus, reinforcing the notion that firms may collaborate with previous alliances (home and abroad) even while seeking new ones to have a greater possibility of overcoming trepidation and widen their international opportunity horizons (George and Bock, 2012). The contribution also aligns with the notion, that BMs link decision-makers and network partners, and their relationship is valuable for fostering credibility and legitimacy (Child et al., 2017; Mort and Weerawardena, 2006). Entrepreneurs need to harness the dynamic capability to network, because it requires unique and persuasive skills to convince stakeholders to co-create and deliver value (Mort and Weerawardena, 2006). Developing network capability provides managers with the expertise *to learn* how resources embedded in the network enter a firm, and how the firm organize (its activities, resources, and processes) internally to create and capture value (Oviatt and McDougall, 2004; Lubik and Garnsey, 2016). As such, networking capability gives managers the credence to espouse a suitable BM or change their existing BM to ensure that it supports the firm’s internationalization process (Amit and Zott, 2001; Brettel et al., 2011).

*Individuals as drivers presiding at the crux of business model (BM) change*

This study contributes to scholarship by investigating entrepreneurs and their unique role as sense-makers of their ventures (Doganaova and Eyquem-Renault, 2009; Baden-Fuller and Morgan, 2010; Massa et al., 2017), integrating the researcher (in this study) as an interpreter of the retrospective and ongoing entrepreneurs' accounts of the focal phenomenon (Rasmussen et al., 2001; Piekkari et al., 2009; Welch et al., 2011; Zahra et al., 2014). This contribution is at the intersection of the BM and IE literature; as it focuses on entrepreneurs navigating both the individual- and firm-level contexts to understand the dynamics of their BMs (Michailova, 2011; Child et al., 2017, Foss and Saebi, 2017) Zahra et al., 2014; Baker and Welter, 2018).

The study points that mental schema, or interpretations of the past, shapes knowledge, and present experiences, that underlie expectations of desirable and plausible futures (Wadhvani et al., 2020; Shepherd et al 2021). Thus, influencing how individuals view international opportunities from different perspectives and contexts Foss and Saebi, 2017) Zahra et al., 2014; Baker and Welter, 2018). The findings contribute by demonstrating that individuals construct their decisions and oversee a combination of key activities, that spur BM changes their international performance of SMEs. They do so by drawing on their previous experiences to give structure to a business idea or opportunity by deploying resources and mapping out new combinations of important risks, competitive actions, and decisions that can translate into changes in the venture's BM (Ginsberg, 1988; Aspara et al., 2011; Simon et al., 2011).

The data (Publication III) also suggest that entrepreneurs' previous (international) experiences influence their frame of reference, which manifests as a filter through which the synthesis of internationalization decisions taking place. This confirms that a venture's BM does not exist in isolation from its *context*, because managers need to change their value activities to satisfy the environment in which their firms operate, or desire to operate (Child et al., 2017; Foss and Saebi, 2017). However, despite the role of the entrepreneur is pioneering and implementing BM change (Publication I&III) the ways in which entrepreneurs engage in BM change are constrained by, or predicated on international experiences, personalities, values, prior business ownership, and other individual traits (Hambrick and Mason, 1984; Ucbasaran, 2001; Hambrick, 2007).

Four typologies (Publication III) were developed based on the mapping of entrepreneurs' (schematic) accounts across contexts, which led to interesting observations. The study identified that entrepreneurs (e.g., inventor and control entrepreneurs) who were still on the brink of scaling their business (e.g., value proposition) did not necessarily prioritize or standardize all value mechanisms (e.g., value capture and delivery) needed to scale the BM. Rather, founders prioritized continuous innovation to their value propositions by showing a strong intent to satisfy customer needs. They were also keen to know what their customers wanted, and to make related changes based on that knowledge. They also seemed to control and pace their internationalization efforts, making only seemingly convenient BM changes (to value propositions) in response to customer feedback and

requests from partners and network alliances. In this case, such acts (if not strategic) constrain BM changes (despite obvious opportunities for BM change).

Entrepreneurs who proactively change their BMs are keen on evaluating and iterating with their value dimensions, to decipher the critical combination of activities needed to survive, and to orchestrate change to compete and achieve functional excellence more effortlessly (Guth and Ginsberg, 1990; Sapienza et al., 2005; Mainela et al., 2014). These entrepreneurs (e.g., *tactical, and experimental*) demonstrate the capability to change their BM by adapting rapidly, continuously innovating, and unrelentingly improving their BM with great speed—this notion echoes the notion of organizational plasticity, which should be further studied from the BM perspective to understand change (see Richards, 2020; Herath and Secci, 2021).

These findings elucidate that entrepreneurs' experiences, orientations, and mental frames could substantially limit their perceived opportunities, and concurrent responses to them. Lack of international experience or knowledge could lead to less restraint in BM change and internationalization. On the other hand, too much international experience or knowledge may lead to more restraint, caution in changing the BM. This led to the interesting finding that, a lack of, or excessive experience could have polarizing effects on how firms approach internationalization. Entrepreneurs should instead seek to master *BM coherence* (Shepherd et al., 2021) to balance their experiences and BM change decisions. This study contributes by empirically illustrating that entrepreneurs' thinking patterns are reflected in their decisions and written into the blueprints of their present and future BMs. Thus, the cognitive framing of entrepreneurs' previous experiences affects how international entrepreneurial firms make sense of their IB decisions and corresponding BM changes (Teece, 2007; Johnson et al., 2008; Massa et al., 2017).

Publication IV provided evidence that both effectual and causal decision-making support innovative BM changes. This was a significant contribution because the question of how internationalizing SMEs innovate their BMs over time, remains a proverbial black box in business management and IE literature (Onetti et al., 2011; Sainio et al., 2011; Child et al., 2017; Abatecola and Cristofaro, 2018). These findings suggest that entrepreneurs might leverage the combination of effectuation and causation to initiate changes in the BM, and according to the market situation or the opportunity they wish to exploit. Furthermore, in dynamic international environments, the combination of causation and effectuation, augments and boosts the capability to BMI over a singular focus on either control or planning. By extension, entrepreneurs are consistently at the crossroads of decision-making (Kets de Vries, 1977) and devising the appropriate pathways and operations, to ensure that the firm succeeds in its internationalization efforts. Thus, SME decision-making and initiatives toward changing the BM (i.e., through BMI) are linked. However, there is a need for more empirical studies to confirm specific incidents that are manifested in entrepreneurs' behavioral choices and actions as they change their BMs (as seen in Publication III).

The study elucidates that, international entrepreneurs who master the combination of effectual and causal decision-making (Sitoh et al., 2014) could gain the advantage of making the optimizing the choice for themselves, especially in unpredictable international markets (Sapienza et al., 2005; Child et al., 2017). Overall, establishing that managers can pivot their existing business operations through BMI while proactively seeking new opportunities, and taking significant risks for a more competitive future. This is because BMs serve the interlinked objectives of providing stability for developing firm activities and providing sufficient flexibility to allow for growth and change (Cavalcante et al., 2011).

*Recognition of international opportunities as a precondition and stimulus for business model (BM) change*

This study contributes to scholarship by revealing that early international entrepreneurial actions as SMEs internationalize may initially commence with moderate BM changes. The reason for this is that, upon becoming aware of new opportunities, SMEs first make incremental changes to collect further information about technology, political forces, regulations, macroeconomic factors, and social trends that support their decision-making about whether to pursue an opportunity. Subsequently, the company considers new combinations of value activities (such as relevant partners or alliances) needed to be a fully functional international BM (Shane and Venkataraman, 2000). Thus, the disposition toward BM development, and the pursuit of opportunity is dependent on cognitive knowledge (Publications III and IV), and access to external market knowledge through networks (e.g., Ardichvili et al., 2003; Chandra et al., 2009; Kontinen and Ojala, 2011). Besides, opportunity recognition is an initial step in internationalization, thus opportunity recognition and BM change interact when the firms seek *the opportunity*, and when entrepreneurial efforts and innovation are enacted (Ardichvili et al., 2003; Zahra et al., 2005).

The findings (Publication V) yielded the interesting discoveries that in the early stages of internationalization, some entrepreneurial firms may be averse to change if it requires changing their core value propositions (Publication III and V) which may be their primary competitive advantage, or the epicenter of the formation of their venture (Ahokangas and Myllykoski, 2014; Juntunen et al., 2018). Alternatively, companies are likely to change their BMs for specific markets, or based on stakeholder demands and requirements, only if doing so is a lucrative move and could boost their revenue streams considerably. Therefore, firms may not consider new opportunities if they do not fully match their available resources and capabilities or are cost intensive. This study therefore contributes that some international entrepreneurs may not necessarily be eager to seek for novel ideas or international opportunities. Instead, may seek solutions that satisfy their profit interest. Thus, in line with the findings from (Publications III, IV and V). The study also shows that for early internationalizing firms not all opportunities identified are implemented, and not all opportunities are pursued, or lead to superior performance (Ireland et al., 2003; Ketchen et al., 2007; Guo et al., 2017). In fact, internationalizing SMEs may opt to neglect potential opportunities if they do not adequately align with their existing BM, and if

seeking to exploit these new opportunities would require a substantial use of the firm's limited resources and capabilities.

As seen in from the case findings in (Publication V) the barrier to BM change may emanate from the switching cost of the value proposition (Leavy, 2012). This study shows that, due to their heavy investments in the value proposition (e.g., the core technology), entrepreneurs might not easily change their entire BM; rather, they may temporarily change parts of their value proposition in response to international customers' demands, eventually reverting to their original value proposition when they identify the right customers (Schwartz et al., 2017; Agandal and Chetty, 2007). This finding corroborates with studies which suggest that SMEs may switch between models (specifically their value propositions) to *value capture* and remain profitable (Hacklin et al., 2018; Bouwman et al., 2019), while continuing to search for new opportunities as the firm grows. This can also be considered a reactive response to change, and the desire to preserve the firm's value offering (Agandal and Chetty, 2007; Saebi et al 2017).

The findings further evoke that, changes to value propositions could also occur in response to latent customer needs, direct requests, or external competitive threats (Publication V). Meaning entrepreneurs may respond to opportunities and change their business models reactively behavior, especially if the company would not have naturally innovated or changed the BM if one of these situations did not arise. Thus, firms may change their BM so that customers do not seek alternative solutions elsewhere. This finding solidifies the link between IE and BM changes because entrepreneurial firms tend to be more triggered to reactively effect changes in response to recognized threats (Agandal and Chetty, 2007). Early internationalizing firms may be prone to prioritizing incremental changes, instead of radical changes by modifying some of the value components, or incrementally adapting key activities to seize international opportunities that are already suitable for their BM (Linder and Cantrell, 2001; Cavalcante et al., 2011). Conversely, identifying unresolved or latent customer needs in the early stages of internationalization may trigger changes to the BM if the opportunity recognized could lead to the capture of new market segments. Thus, in line with studies that have argued that entrepreneurs usually sense opportunities based on customer demands (Al-Aali and Teece, 2014; Zucchella et al., 2018), these firms are likely to change their BMs to facilitate lock-in (Zott and Amit, 2011).

The findings in (Publications III & IV) also substantiate that while recognizing international opportunity is an essential first step to developing a BM, opportunities are cultivated by entrepreneurial creativity and action. Thus, early internationalization requires the ability to create scalable value propositions, that effectively solve customers' immediate or latent needs, and the appropriate orchestration of resources and capabilities to exploit that opportunity hinges on the BM (Ardichvili et al., 2003; Reuber et al., 2018). The BM embodies how the iteration of value components and international opportunity transforms a value proposition to meet customer needs and guarantee returns.

### 5.2.2 Contributions to business model and BM change discourse

#### *Business models (BMs) as an instrument for change in internationalizing firms*

The dissertation provides insights to our understanding that BM change goes beyond the creation, delivery, and capture of value. It establishes that BM and BM changes provides us with layered understanding of the firm's interaction with its management, core process, resources, and capabilities (Cavalcante, 2014; Saebi, 2014). The understanding of this interactions and BM changes allows us to decipher how firms navigate the exploration and exploitation of opportunities, learning, and develop new managerial capabilities and strategy to support competitive strategy development and long-term performance (Saebi, 2014; Teece, 2010; Saebi et al., 2014; George and Bock, 2011). The findings elucidate that BMs are useful instrument of change, in (re)modeling business ideas, recognizing opportunity, and testing its scalability. Thus, the BM could be employed as a framework through which entrepreneurs can map the possibilities and activities that lead to the exploitation of feasible opportunities (Publications III and V).

The study also brings novel contribution which suggest that to evaluate BM, firms need to first unbundle their value mechanisms to vet the viability of an opportunity. This unbundling helps to determine what needs to be changed and how these changes could be implemented. Thirdly, the BM can assist in re-bundling (the narrative) by implementing and coordinating (new or change) activities toward a specified goal (e.g., exploring international opportunities). This *unbundling – changing – (re)bundling process* matters because there are numerous BM sub-constructs. According to Foss and Saebi (2017, p. 212), “it would be unrealistic to expect BMI research to empirically account for all such complicated mechanisms given the present state of development of the field.” Thus, the unbundling of the value dimensions allows managers to deconstruct and iterate their value mechanisms to determine the parameters (*what to change* and *if change is imminent*) of change (Osterwalder and Pigneur, 2010, 2015).

More so, considering the broad scope of firms' historical activities and future trajectories, especially in international contexts, BMs may act as a boundary object (Doganaova and Eyquem-Renault, 2009; Massa et al., 2017; Shepherd et al., 2021). The present study adds to the body of work and future research (BM and IE) that as boundary objects, BMs serve as the means to explain the actions and coordination of the various actors interested in value creation and capture (Doganaova and Eyquem-Renault, 2009; Cavalcante et al., 2011). The findings in Publication II and V, interpret with caution that BMs (as applied in research or practice) as boundary-objects or boundary-crossing objects may not necessarily be the same for every entrepreneur. This is due to lack of know-how on how to wield the BMs. Thus, fully comprehending the mechanism of BMs could construct deeper understanding of the parameters and impetus that drive change activities and routines (Doganaova and Eyquem-Renault, 2009; Massa et al., 2017; Shepherd et al., 2021).

The study (Publication III) contributes by substantiating that BMs serve as a mental or practical framework that establish boundaries on an otherwise boundaryless global business landscape. BMs as boundary or boundary-crossing objects bridge and facilitate change in the internationalization process of firms. In other words, regardless of the myriad of business processes, social values, and other factors that can interfere with a firm and its stakeholders' relationships, the firm can leverage its BM as a boundary object to canvas all its objectives and goals (Osterwalder et al 2010). Using BMs as "boundary objects" can also foster the curation of routines and strategies within the confines of a common model (Shepherd et al 2021; Doganova and Eyquem-Renault, 2009). Moreover, BMs can ensure that all actors within and outside an organization can co-operate with less tension and make unanimous decisions (Pohle and Chapman 2006; Torkkeli et al., 2012). It can therefore be assumed that the BMs bridge the gap between different internal and external stimuli, and actors in the grand scheme by acting as curative and confining tools through which entrepreneurs can incrementally or radically visualize the extent of their firms' internal and external operations in the context of optimizing business success, even in this era of radical change (Publication I, III, VI).

*Can business model (BM) change exist as an independent construct?*

This study contributes to BM research by attempting to define BM change (see pg.45) and suggesting that BM change could be considered an independent or complementary construct to describe the degree of change in a company's activities. However, this argument may not be entirely confirmed by one study. Thus, the question raised in this study to practitioners, BM scholars, and partly to other management scholars is: *Can BM change exist as an independent construct?*

This open question is fueled by the researcher's curiosity (expressed in the research gaps) on the topic and scholarly motivations to make substantial contributions to the field. However, the findings of the study are constrained due to the heterogeneity in research efforts in the field, and the empirical context and data available in this present study. Going forward, scholars should minimize excessive use of neologisms or coined terms, which is hampering theoretical development in the field. Cumulative research efforts should be made towards establishing and sustaining BM *change* as a base construct. Doing this will minimize conceptual attrition and improve the efficacy of the BM concept. It will also clarify the theoretical ambiguity and set precedence for reaching cumulative agreement towards establishing *BM change* as an independent construct that can elucidate and set parameters on other semantically related concepts.

In this study the term "BM change" was used as an independent construct to explain the vicissitudes, in the internationalization journey of the firms. This provided the permission to discuss whether BM change can be used as a central concept to explain how and why firms alter their BMs. This argument fits with Foss and Saebi's (2017, p. 212) view that a starting point is to collect cross-sectional data on BM changes and regress those data against the business or corporate performance. Building on Foss and Saebi's suggestion, this study proposes that BM change can be adopted as a construct, or unit of analysis, to

enrich our understanding on the activities and performance of entrepreneurial firms (Teece, 2010; Zott and Amit, 2011; Pohle and Chapman, 2006).

This research recognizes that BMs remains truly *a slippery construct* to understand (Casadesus-Masanell and Zhu, 2013, p. 480), in the sense that changes in a BM can occur without being noticed without precise parameters for determining change. The lack of parameters in research and practice makes it difficult to trace the changes going on in the firm. For example, the empirical investigations showed that BM change can occur either be directly or indirectly. Internal and incremental changes may not be immediately visible; however, they have equal efficacy as external change. Therefore, parameters needed to capture BM change in the activities (e.g., internationalization) of firms so that that the dynamic of a BM can be less elusive and become more predictable.

This study contributes by proposing that BM change can be an independent construct. BM change as a construct can facilitate collating and explaining different points of significant changes in the lifecycle of an (international) entrepreneurial firm. The propositions are made based on the conception that every BM has its own peculiarities. Although studies highlight that firms with similar archetypes may act alike due to their shared characteristics (Oviatt and McDougal 1994; Rialp et al., Kuivalainen et al., 2012). Based on BM logic, this is not necessarily so (Publication III). This is because BMs are not necessarily the same among firms, even if they are of similar archetypes and operate in the same industry. In analogical terms just as no two people are entirely similar, no two BMs are entirely identical. A BM is unique to an organization. In short, we can say it is the organization's unique identity. Thus BM change, should reflect changes in the ideas, decisions, and activities of the organization, the individuals (cognitive structures) who run the firms, and their interactions with their (international) environment (Guth and Ginsberg, 1990; Massa et al., 2017).

The overarching findings of the dissertation (Publication I-V) contribute by demonstrating that BM changes transform old ways of doing business into newer approaches or intricate manageable approaches with executable ideas. Moreover, as firms make increasing number of changes, they begin to accumulate knowledge and generate new ideas, leading to better outcomes in their performance (Publications II, IV, V). Thus, reinforcing strategic renewal, which in turn culminates in profitable corporate venture models and (Guth and Ginsberg, 1990 Doz and Kosonen 2010; Shepherd et al., 2021). Thus, while the dissertation makes the arguments about heterogeneity, the study finds that these peculiarities and the interdependencies of the various terms could be leveraged as a convergent construct to argue for BM change, and to explain the different internal and external transitions that firms undergo in their lifecycle.

Recalibrating internal value (e.g., by evaluating routines, activities, and resources) fosters innovation and helps firms launch into the international market (Publications I-V). External value is created in reaction to market and competitive forces. This study agrees that most obvious external BM changes occur as the firms interact with external international actors (Child et al., 2017). Internal BM changes prepare firms with

innovative solutions to tackle an external market. Therefore, developing the capability to re-engineer internal change matters and reinforcing business plasticity can assist a firm in reacting quickly and adapting to the international environment or ecosystem (Saebi et al., 2016, 2014). Thus, a BM that is appropriately changed to satisfy internal or external environment is sure to organically morph, by innovation and/or adaption and in equilibrium with their environment or ecosystem.

Firms that can navigate the external and internal environment eventually develop into hybrid models for survival and sustenance across borders. Overall, the findings contribute that change is essential, what remains unclear is the parameters and the extent to which entrepreneurs should engage in BM change as well as the implications and resulting outcomes. Successive changes in BMs lead to the accumulation of knowledge and create a reservoir of new ideas and strategies that support decision-making (In Publications II and V), thereby company growth and performance (Massa et al., 2017). It is therefore essential for firms to know when to resist or accommodate change. The findings demonstrate that entrepreneurs could leverage market knowledge from networks and tactically engage BM changes to predict and control actions toward suitable outcomes. However, this requires internal knowledge of a firm's micro-level processes; in this respect, external knowledge can be valuable for developing new or modified models.

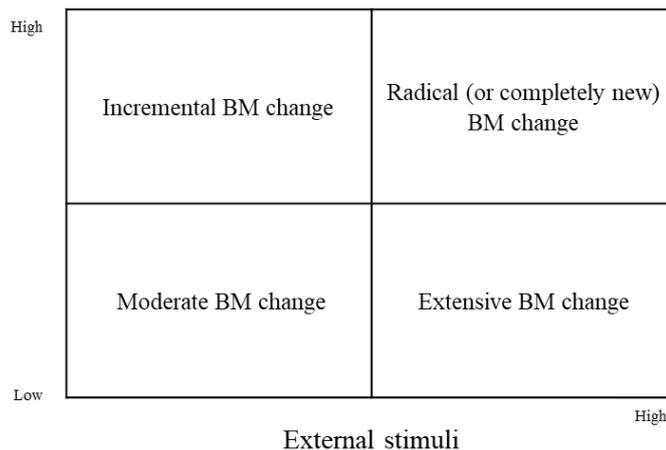


Figure 5.1: Proposed typology on degree of BM change in internationalizing SMEs.

The proposed typology in (Fig 5.1) is derived from the literature and findings. It demonstrates that firms tend to make BM changes internally based on their core activities and processes or externally driven by changes in the environment. The degree of change varies and can depend on the firm's situation or available resources and capabilities:

- Moderate BM change: static or very minimal changes to value dimension or components

- Incremental BM change: sequential changes made to more than the value dimension and or components but not to all components.
- Extensive BM change: wide range of changes in most of the value dimension or components.
- Radical BM change: drastic changes to all value dimensions or value components

In furtherance of the proposed typology, when there are low external environmental stimuli and low internal environment stimuli, BM changes tend to be *Moderate BM changes*. When there are high external environmental stimuli and relatively low internal environment stimuli, the BM change is *Incremental*. When the influence of external environmental stimuli is high, and the influence of internal environment stimuli is also relatively high, the observable BM change business model change noticeable is *Radical*. In a case where the impact of the internal environment is highest, and the influence of the external environment is relatively low, then the BM change noticeable is *Extensive*.

While the recommendation to use BM change as a sole construct may not be fully sufficient to explain BM change, it could also be viewed as merely a piecemeal solution. More empirical research is needed to develop and establish clearer parameters and measurement clarity for BM change as an independent construct. Moreover, this recommendation is to take stock of where we are now as we sensibly discuss research avenues to reach convergent generalizations in the BM literature (Foss and Saebi, 2017).

### 5.2.3 Contributions to business model, BM change and IE literature

The current study emphasizes that the potential research contributions between BM change and IE are effectively boundless. There have been few attempts to explore this linkage, which is a vital gap in IE research. This dissertation sought to bridge this gap by establishing that examining BM change can provide insights on antecedents and outcomes of international entrepreneurial activities, especially when BMs mediate or are integrated with other IE theoretical perspectives (Zott and Amit, 2008; George and Bock, 2011; Schneider and Spieth, 2013). As noticed in Publications I-V, linking the theoretical perspectives of IE (whether EO, decision-making logic, or the international entrepreneur) demonstrates that IE is a fruitful and underexplored research area that has the potential to reveal even more underlying antecedents of BM change in internationalizing enterprises.

The findings thus legitimize “business models” as an instrument of change in the internationalization journey of entrepreneurial firms. The adds to IE and BM discourse by demonstrating that both firm and managerial perspectives are fundamental for exploring BMs and understanding international entrepreneurial firms (Magretta, 2002).The study provides empirical evidence that a synergy between IE and BM theoretical perspective exists and can inform our understanding on entrepreneurial firms— by unpacking management reactions, delving into the role of context, and

examining the implications of BM changes in a firm's operations, and strategy (Osterwalder et al., 2005; Torkkeli et al., 2015).

The study also demonstrated that, on the one hand, BM change could lead to innovation, growth, and performance (Publication I, II, and IV). On the other, it may cause firms to fail and may even lead to business loss (Publication III and V) if not properly executed (Linder and Cantrell, 2000; Cavalcante et al., 2011). Thus, BMs are contingent on entrepreneurs' decision loops, the value they create, and the actors (customers, suppliers, alliances) who participate in creating and delivering value (Publication IV). Therefore, it is essential to reverse-engineer by reverting to the initial idea or story from which the BM was established to understand its retrospective change dynamics (Publication III). However, the idea is not to dwell on the idea per se but rather to peruse the details of what happened at different intervals and phases. This would further establish the connections between the international entrepreneurs or founders, their activities, and the context in which these activities occur.

The evidence from the study shows that beyond identifying opportunities to prosper and grow, entrepreneurs *tactically and experimentally* need to change their BMs, to exploit market opportunities and sell their products and services across national borders if they want to be profitable and improve performance (Publication III, IV, & V). Entrepreneurs however need to be familiar with their international BM, especially in the initial stages of venture creation. In line with (Perry et al., 2012; Sitoh et al., 2014; Torkkeli et al., 2015) BM can be leverage as an instrument of change to predict or control their core routines that will suit their international requirements. Although studies suggest that international market requirements may predict BM design, and resources, and capabilities, a firm may not have to radically change its entire BM for the international market all at once. Drawing from the finding of the dissertation, entrepreneurs may carefully alternate between predictive and controlled decision-making to identify the specific BM components that need to be changed (e.g., tactically, or experimentally as in Publication III) before eventually settling for a BM that will be suitable for the target market over the long term (Nummela et al., 2014; Evers and Andersen, 2021).

The current study identified the commencement of the internationalization process may be daunting. Market and country specific requirements overwhelm firms with fragile fungibility. Firms leverage reputational network support, (III, IV), which is valuable and beneficial in early internationalization, especially as SMEs may need market information to ensure the legitimacy necessary for foreign market entry (Mort and Weerawardena, 2006; Johansson and Vahlne, 2009; Gulati 1998). By the same token the study finds that international entrepreneurs may leverage the upsides of internationalization (such as, international experience, innovativeness to overcome the perils of international market challenges (such as industry factors or limited market knowledge, resources, and capabilities) to creatively modify their business models and new devise strategies to compete one an international level. The empirical findings also provide new insights that BMs serves as a boundary object through which international entrepreneurial vet the value mechanisms, of their international activities as they engage or plan to engage with

new international markets (Publication III). More so, international entrepreneurs may knowingly or unknowingly iterate with their BMs to create an optimal operation model contingent on firm resources and capabilities to internationalize or exploit new international opportunities. Moreover, the findings also pointed that the necessity or prerequisite that drives BM change transcends recognition of international opportunities. The study (Publication V) illuminates that early internationalizing firms, despite the requests from of stakeholders (e.g., customers through ideas, or feedback) may not always yield towards making drastic BM change without a precise understanding of the viability of a *recognized* opportunity. Thus, the study adds to the body of knowledge that international entrepreneurs resist the urge to respond quickly to an international opportunity (Agandal and Chetty, 2007), rather they may opt to alternate between BMs as a precautionary measure to scale their ventures (Velu and stiles 2013; McGrath 2010; Sosna et al., 2010).

Furthermore, as SMEs internationalize, some initial and obvious BM changes occur in their value proposition dimensions. These changes focus more on customers' needs, gains, and satisfaction (Osterwalder et al., 2015). However, this study contributes by revealing that contextual and iterative changes may be occurring behind the scenes. Thus, it becomes difficult to capture change without linking BMs to other disciplines, such as the IE domain, because BM change takes its root in the inner workings of firm operations in different contexts. Re-affirming BMs as an interdisciplinary construct (Ritter and Lettl, 2018).

The findings in Publication III explored individuals' their unique identity, overlapping mental schemata international experiences, as well as firm's- and environmental-level stimuli. The findings contribute by demonstrating that the interaction between BM change and IE, is valuable in understanding different contextual business and industry dynamics (Ritter and Lettl, 2018; Zahra et al., 2014). The subsequently empirically findings establishes that BMs and corresponding changes comprise valuable raw material or data because the characteristics of BMs to provide a paradigmatic explanation in both theory and practice of how firms operate. Thus, exploring the iteration of the value dimensions in the internationalization of firms can significantly inform the IE discourse. Therefore, instead of resisting or bemoaning the change attributes of BMs, academics and practitioners should lean towards the pragmatic characteristics of BMs to provide a paradigmatic explanation in both theory and practice of how firms operate. Overall, building on these arguments, this dissertation enunciates that BM is valuable in explaining *change* in IE discourse.

A complementarity between BMs and international dimensions of entrepreneurship exists in value capture and/or the competitive dimension. This is the case because as SMEs internationalize, their BMs reveal the implications of their strategic orientation choices (Asemokha et al., 2019; Evers et al., 2019). As such, a novel or modified BM can arise because of testing, validating, and analyzing strategic choices; the converse is also true (Shafer et al., 2005; Zott and Amit, 2008). The findings empirically demonstrate that BMI could be viewed as a strategic orientation (Tollin, 2008) and a preferred tactic to

support the internationalization of entrepreneurial ventures (Linder and Cantrell, 2001; Child et al., 2017). BMI was consequently identified as an antecedent that fosters strategic design, operational excellence in terms of product and process innovation, and economic and financial returns (Morris et al., 2005; Onetti et al., 2012). Thus, this dissertation reaffirms that BMI fosters competitive advantage, optimization of costs, and long-term performance for internationalizing firms (Morris et al., 2005; Zott et al., 2011). Thus, findings reinforce the positioning of BMs at the intersection of strategy and IE research (Demil et al., 2015; Child et al., 2017). Thus, this study dealt with a topic of interest to scholars in IE and BM disciplines because it allows for further exploration of entrepreneurial activities and can add value to society by bringing about significant, sustainable, and long-lasting change in both research and practice.

#### 5.2.4 Contributions of the qualitative and quantitative study

The qualitative studies described in this dissertation (Publications III, IV, and V) contribute to scholarship through the notion that context matters, thereby bringing the “international” into “business model and entrepreneurship research.” The qualitative method fostered sense-making and a holistic iteration of BM activities in the firms’ internationalization processes. Consequently, it provides a deeper understanding and compelling arguments for why international entrepreneurs change their BMs. The analytical approach of Publication III provided the possibility of diving deeply into the entrepreneurial-level reasoning in its context, which determines the internationalization of new ventures.

The study contributes to the notion that “*contextualization allows researchers to map out these various micro-processes to understand better the mechanisms by which they work [...] changes in these elements and micro-processes and link them to changes in different outcomes, such as the variety of opportunities that companies have, the speed of internationalization by new ventures, or the change in the domain of activities by a small business owner*” (Zahra et al., 2014, p. 481). The iterative analysis allowed for the identification of retrospective and salient cues and valuable frameworks leading to interesting insights that otherwise would not have been generated. This confirms that contextualization offers alternative and deeper explanations of the BM phenomenon. Moreover, aligning BM with the internationalization context is valuable because the process dynamics of organizational activities and their occasionally cyclical nature vary by company and may not necessarily be replicable (Rissanen et al., 2019). Thus, the process of changing a BM could be regarded as context-specific and can expound on the internationalization of firms. The empirical attempt (Publication III) contributes to BM and IE by responding to the call for more in-depth research by identifying key contingencies that influence cause and effect (Zahra et al., 2014; Welter and Baker; 2020) among variables of interest and clarifies the functional relationships among the studied variables (Rousseau and Fried, 2001; Johns, 2006).

The quantitative studies revealed the significant relationships that exist between BMI and internationalization and performance outcomes. This finding contributes by illuminating

that iterative BM change can lead to mastery and improve performance. Publications I and II demonstrated a link between concepts in the IE and strategic management literature that can help explain BM change. For example, the quantitative findings reveal that a firm's EO and DC to leverage the right networks, could also facilitate adaptation in international environments, which may be challenging to achieve independently. These findings also reinforced the tangibility of networks and DC as a single construct for explaining BMI activities. The mediation of BMI on the EO–performance relationship also responds to scholarly claims that EO–performance relationships are immutable. Thus, the dissertation verified that EO improves firm performance, although this may also depend on additional factors (Wiklund and Shepherd, 2005; Covin et al., 2006; Rauch et al., 2009). Overall, the mediating role of BMI in both Publications I and II reveals that SMEs that possess the capability to innovate their BMs under dynamic and uncertain international market conditions, are more likely to grow and enhance their international performance. This dissertation thereby increases the impetus for replicative studies to verify the nexus between BM and IE.

### 5.3 Summary of the contributions (Publication I-V)

The findings from Publications (I, II, III, IV, V) contribute by establishing that, international entrepreneurial firms based on their fungibility (e.g., available resources and inherent capabilities), can proactively engage internally and externally with stakeholders to change their BM in order to satisfy their customer needs (Sainio et al., 2011; Child et al., 2017; Zucchella et al., 2018). However, for early internationalizing firms, the obligation to transit from recognizing opportunity, to exploiting opportunity, stems from the need to be scalable. Thus, firms leverage their dynamic capabilities to amass information and foreign market knowledge from network alliances to facilitate their internationalization efforts (Ardichvili et al., 2003; Chandra et al., 2009; Kontinen and Ojala, 2011; Reuber et al., 2018). These findings accentuate the nexus between network capability, IOR, and BM (Publication II and V). Thus, validating that internationalizing firms initiate actions to commercialize their products or services activities abroad through collaboration with network partners (Knight and Cavusgil, 2004; D'Angelo et al., 2013). Thus, the synergy between BMs and opportunity can potentially reveal alternative ways through which internationalizing enterprises can recognize opportunities across national borders and then change their BMs (Mainela et al., 2014).

As firms internationalize, they are required to change to satisfy international market (stakeholders, suppliers, customers, macro-environment) requirements (Afuah and Tucci, 2003; Nummela, 2004; Child et al., 2017). The study contributes by establishing that BM literature can enrich our understanding of the mechanisms that drive these changes (Tece, 2010; Zott and Amit, 2011). Unpacking and deconstructing BMs reveal the value creation, proposition, capture, and delivery activities of IE firms, meaning that we can uncover how firms cope and consequently develop capabilities to thrive in international markets (Shepherd et al., 2021; Zucchella Magnani, 2016). Changing the BM is a vital task, which requires entrepreneurial firms to have unique capabilities to clarify their value

logic structure and governance of transactions between themselves and stakeholders (Zott and Amit, 2008; Teece, 2010; Casadesus-Masanell and Ricart, 2010).

This study conceptually and theoretically identified that, scholars are yet to reach a consensus on the definition of the term *business model* despite advances in BM and BMI research. BM change has also not been explicitly clarified as a homogeneous construct. Rather, authors have generally used different conceptualizations to discuss underlying change. These various reflections and interpretations of what constitutes a BM change across research fields, have led to mixed theoretical and contextual conclusions. These fragmented viewpoints and lack of consensus about BMs and how they change in relation to firms' internationalization call for more in-depth studies to provide insights into the dynamics of BMs, the changes they undergo, and how they help in the creation, delivery, and capture of value (Zott and Amit, 2008; Teece, 2010; Foss and Saebi, 2017).

Furthermore, in this study, the IE perspective gave prominence to internationalizing firms at the nerve center of the internationalization journey rather than prioritizing research on established multinationals (Onetti et al., 2012; Child et al., 2017). The study focused on *entrepreneurs, firms, and their international business environment* to understand BM change in their entrepreneurial internationalization journey. Entrepreneurial traits, such as proactiveness, innovativeness, risk-taking propensity (Covin and Selvin, 1991; Lumpkin and Dess, 1996), tolerance for ambiguity, locus of control (Zucchella et al., 2018), and even decision-making approaches (Saravathy, 2001), influence the orientation of organizations and how they cope with uncertainties as they internationalize. These lenses provide a basis and boundaries for analyzing BM change within the internationalization context and its performance implications.

Overall, the study reflects the heterogeneity of research topics in BM and IE literature, and that makes it difficult to establish a convergent research agenda. Thus, given the relative novelty and ongoing developments in BM and IE as independent fields of study, it is hardly surprising that there is limited research on the intersection between both research streams (McDougall and Oviatt, 2000; Hennart, 2014; Dabic et al., 2020). However, both BMs and IE are nonetheless relatively rich areas for development in business and management research. This study also presents valuable conceptual contributions by discussing how the IE and BM literature can complement each other.

## 5.4 Managerial implications

*Change the boundaries of business —Bill Gates*

As established in the introduction, change is ongoing and inevitable. Although some firms may be hard-wired to do things habitually (which may be strategic), this may not be sustainable, especially in today's "new normal" and global economy. Changing the BM for global or international contexts requires getting out of mental ruts and becoming familiar with unknown territory (Kets de Vries, 1977). To do so requires a proactive orientation for growth and success, a risk-taking orientation to break out of familiar,

monotonous routines, and the willingness to engage in continuous improvement and innovative change. However, BM change might not be an easy task for small firms constrained in terms of resources and capabilities or that have few or no alliances. The rigidity or flexibility of a venture will determine the extent or propensity to which a BM can accommodate change. Thus, because *entrepreneurship is not for the faint-hearted* (Kuemmerle, 2014), international entrepreneurs should be assertive and demonstrate flexibility and capability to (re)engineer change to foster the growth and positive performance of their ventures (Asemokha and Korhonen, 2021).

In the same vein, internationalizing and curating a BM for international markets require effective decision-making, leadership and commitment, and the ability to experiment with a BM by leveraging the feedback loops it provides for value creation and capture. Therefore, entrepreneurs should critically evaluate the way in which they approach international opportunities to determine whether they are feasible and within the boundaries of their BMs. Doing so can exercise BM muscle to be more resilient to change without the crippling fear of uncertainty. Entrepreneurs should also persistently question their own *motives* by asking questions like “*What motivates me to continue and dig deeper into exploring this opportunity?*”; “*What does this require from me; do I have the interest, abilities, and resources I need to put into this?*”; and “*Are my potential performance outcomes scalable and do they improve our firm’s performance?*”. These reflections can guide entrepreneurial action by identifying key activities and routines (Cavalcante et al., 2011, 2014), including whether an idea, or initiative should grow beyond a particular stage.

The organizational capability to change the BM allows firms to develop the skillset needed to fulfill the formal and informal institutions and market requirements prevailing in the foreign market(s) they seek to enter. Likewise, managers must develop the dexterity to iterate the value activities that facilitate international market entry and the effective transition of business functions from one BM (in the home market) to another (in the host or local market). Developing the capability to change the BM minimizes waste or avoids squandering scarce resources as managers can quickly identify whether they can respond to international market demands and requirements without completely changing the existing BM. Alternatively, they would be able to discern the type of change needed to adapt, tweak, and transform the sum or part of their BM, what is needed to be known, and the extent of change necessary. For example, studies have claimed that entrepreneurs may develop and re-engineer their IB models accidentally (Hennart, 2014), by experimentation, by trial and error (Sosna et al., 2010; McGrath, 2010), or even by using dual or parallel BMs as they internationalize (Velu and Stiles 2013). Thus, by introducing an additional BM to their existing model (instead of completely replacing it), the firm can test the market and minimize the risk of jeopardizing the current BM (Velu and Stiles, 2013; Massa et al., 2017), especially for early internationalizing firms. Knowing when to change is also important. Though change is said to drive growth, and adversity to change may impair progress. changing too fast may lead to a lack of stability and disorder, leading to dysregulation of the BM and the ineffective flow of key activities within a firm.

Managers can strengthen their grip on their firm's activities tactically or experimentally via BM change, as seen in Publication III.

Networks and networking capabilities are also solid drivers for the internationalization of SMEs. Network ties and capabilities can facilitate early internationalization, identifying and executing recognized opportunities, thereby leveraging existing alliances and constantly developing new and agile (strategic) relationships to foster internationalization. Entrepreneurs should also leverage partners' knowledge to deconstruct institutional barriers by co-creating through the reconfiguration of stakeholders and customers, thereby lowering bureaucracy and regulations (e.g., financial systems, payments, or channels). SMEs with the capability to cooperate and form strategic network alliances gain the benefits of BM optimization (Osterwalder and Pigneur, 2010) and facilitate their business operations via partnerships as they internationalize (Onetti et al., 2012; Child et al., 2017). Mastering networking allows entrepreneurs to delegate or outsource resource-intensive tasks while concentrating on their core competencies, leading to improved performance. However, because relationships may be hard to maintain over time, entrepreneurial firms risk falling into predatory alliances (Oviatt and McDougal, 1994). Thus, firms that clarify what is needed can prioritize what support they require to facilitate internationalization, thereby nurturing relationships that also serve mutual benefits for long-term gains. Learning is also important, especially when resources are limited, to develop their own capabilities to manage their international business activities (in the long run) independently.

Entrepreneurs should increasingly re-orient themselves and their BMs to grow and survive. They can do so by engaging in the type of change that best suits their venture type. Traditional change management is becoming obsolete (Michels, 2019); thus, innovating and disrupting existing brick-and-mortar approaches is crucial for SMEs to compete on an international level. Changing BMs is a practical alternative to strategy. Entrepreneurs can examine their existing operations to determine whether they require changing, discontinuing, or completely innovating to new ways of doing things. In addition, entrepreneurs should be more alert to market changes and trends to keep up with changing times and remain relevant in business. Managers can utilize their BMs in several ways: as a tool for recognizing international opportunities; as a supportive instrument for scanning the activities of competitors to stay ahead of the competition; in response to latent customer needs and feedback, and as a means by which to develop their competitive competencies and innovation activities.

The decision-making mechanism of firms determines the extent to which a BM can be adapted to accommodate market dynamics and/or uncertainties in the international market. It also determines the routines that are implemented in the exploitation and exploration of international opportunities. SMEs will be successful if they embrace flexibility and experiment with their BMs, which can be fostered by making executive decisions that seek to control and predict the BM design that a firm adopts to ensure long-lasting competitive advantages in international markets. Developing a nexus between managerial decision-making, integrating customer needs, capitalizing on resources and

capabilities, and leveraging alliances and partnerships allows firms to develop a nonreplicable and successful BM. Managers could also juxtapose the rare capability of causal and effectual thinking and apply pre-emptive and predictive strategies in their implementation activities (e.g., R&D, technological innovation, BMI, and experimentation) to ameliorate competitive and international performances (Sitoh et al., 2014).

The COVID-19 pandemic is a vivid example of disruptive change. The pandemic in addition to digitization and technology have led to a drastic shift in ways we understand business, work (e.g., hybrid or remote) and social interaction. This situation shows that conventional ways of thinking or doing business is changing. The flexibility and plasticity of BMs can provide managers with a safety net to cope with such uncertainty, not just from an unforeseen event like a pandemic but also from uncertain international or market situations in general. Entrepreneurs and managers should become more conversant with their BMs. Understanding the applicability and iterations of the value dimensions of their BMs can give enterprises the option to leverage BMs as a tool and enabler for innovation, initiation, or the development of strategy and the coordination of internationalization activities. Moreover, through innovation activities, BMs can complement traditional approaches (Massa et al., 2017), facilitate internationalization, and lower barriers to foreign market entry. In other words, innovation in conjunction with BMs may compel entrepreneurs to learn, rethink, and experiment with their business and capitalize on new opportunities (Massa and Tucci, 2013).

By iteratively *unbundling – changing – re-bundling* the value mechanisms of their BMs, entrepreneurs can analyze and evaluate the immediate and future needs of their ventures or the skills and resources needed to facilitate internationalization activities. Thus, understanding the relevance of BM change in internationalization activities fosters judicious resources and the orchestration of capabilities while developing new ways to survive and cope with market competition (Osterwalder and Pigneur, 2010). Being familiar with BMs allows entrepreneurs to forecast what is needed, to seek out new skills, and/or to discern suitable ways to orchestrate and use existing resources and capabilities for appropriating value or developing or even completely innovating new value offerings.

Managers equally need to plan by making calculated decisions and taking actions that work in favor of their firm. They can do this by re-evaluating the adequacy of their BM to accommodate minimal or lofty changes in specific periods. Innovating the BM is also highly beneficial for creating and delivering value to customers. Firms can use their BM to determine implicitly or explicitly evaluated and identified opportunities. Doing this can help managers make the best choices for their firm and minimize the liabilities that accompany internationalizing to new markets; it may also avoid dramatic changes that may be cost-intensive and not immediately needed. Moreover, internationalizing firms may also capitalize on knowledge from their mutual alliances, making BM change best suited for their commercial activities and for the contextual setting in which they operate.

Conclusively, it is essential to note that a good idea or an identified international opportunity for a new product or service is optimal—however, ideas are almost worthless without a road map for effective execution. Metaphorically, a BM breathes life into an identified opportunity and determines whether the business has enough capabilities to transform the opportunity into a tangible product or a successful venture. Therefore, a pliable BM is a vanguard for a successful company to facilitate a firm's business operations. Thus, entrepreneurs should strive for a suitable BM by engaging with their customers to better understand industry and market complexities. To succeed in international markets, entrepreneurs must master BM change to facilitate their growth and improve their competitive performance in both domestic and international markets

*Author's additional remarks derived from the findings and research journey*

This section provides a synthesis and reflection of my learnings, as I engaged with theory and data, the results and findings from the dissertation, and the publications. Figure 5.2., is the conceptual illustration showing BM change in the internationalization journey of entrepreneurial firms. For clarity I have divided into three parts: Ideation → BM changes → outcomes. While the three parts are by no means consecutive processes from start to finish, they demonstrate the iterative process of the evolution of firms' BMs based on the findings in the dissertation. The illustration focuses on the iterative changes that occur in the micro-level processes (value dimensions) of a firm which is a fiction of the BM.

*Part one:* depicts that the formation of a business starts with an idea (Cavalcante et al., 2011, 2014) or recognition of an opportunity. BM changes are best observed from where they begin: ideation (See Cavalcante et al., 2011), business idea, or opportunity. At this point a manager can vet and investigate piece by piece to make sense of the opportunity and the relevant activities in a firm's core processes (Margaretta, 2002). Once the recognized opportunities are harnessed, the (international) BM begins to take shape (Linder and Cantrell, 2005; Cavalcante et al., 2011). The initiative to explore or exploit the recognized opportunity results in the creation of a new BM (if the firm is a start-up) or modified model (if it is an existing firm).

If the opportunity is pursued, the *second part* continues, with exploring or exploiting the opportunities, which should include decision-making leading to, action that drives iterative changes to the core operations of the firm. BM changes are evident in the processes, and efforts that lead to creation or modification an existing element or value mechanism of the model. At this point, firms can map of BM changes can ensue. BM changes are noticeable in the micro process of the firm, e.g., the transition from value creation (e.g., transformation of a viable idea or opportunity into a tangible and product or service) and the delivery and capture of value (e.g., responding to customer needs and generating profits). Firms may solicit support from networks to facilitate their internationalization journey. This part is completed once transformed opportunity begins to yield viable leads and returns (Mainela et al., 2014). *The third part* is the phase where the firm to explores and map out ways to measure the performance implications of the

opportunity with a set criterion. Examples of outcomes are international performance, a new BM, or competitive advantage, sales, product image failure, or revenue loss. Overall, each stage is as important as the other. It is also important to note that iterative changes could be subtle, incremental, radical, but most importantly, it is a continuous phase designed to deliver long-term results.

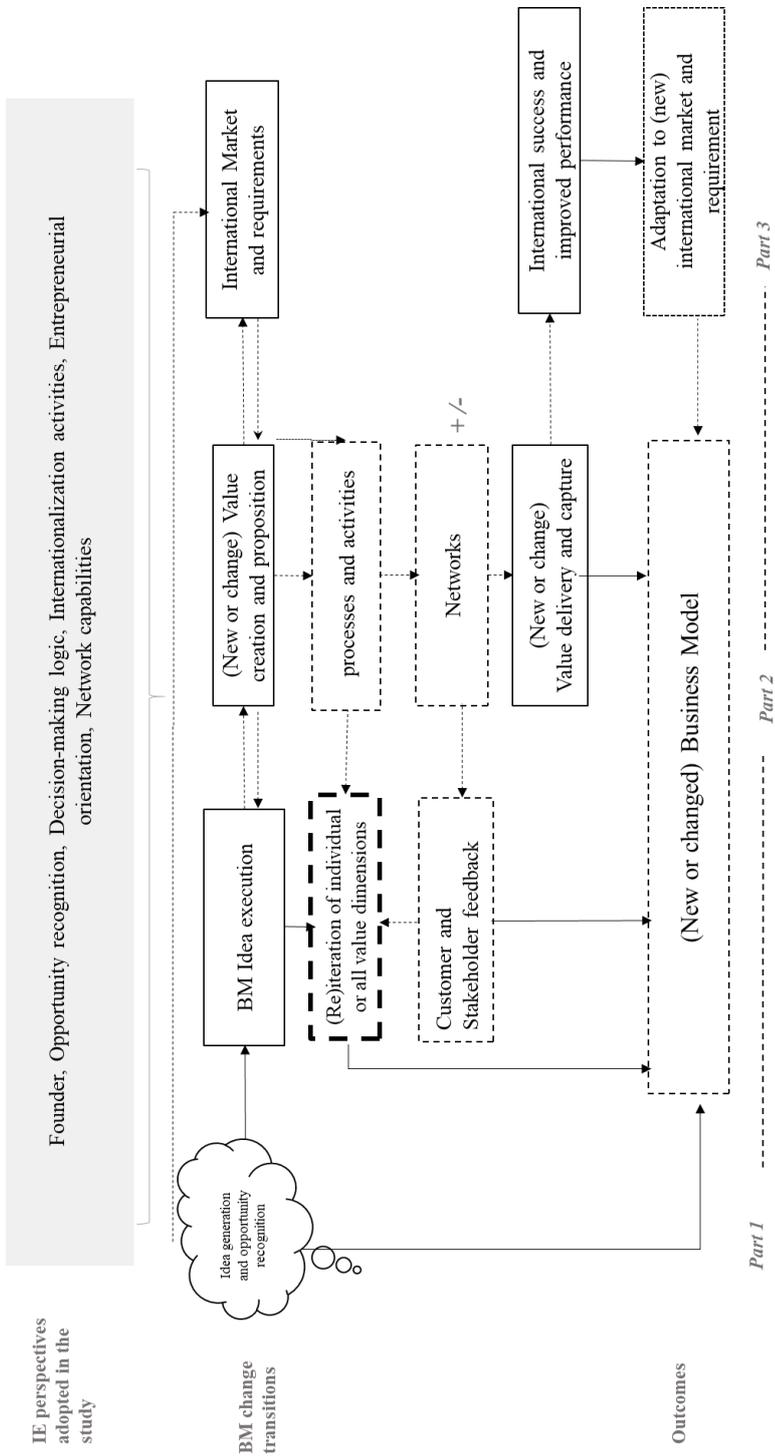


Figure 5.2: *Author's reflection on BM change in the internationalizing firms.*

Note: "New" or radical BM changes may completely transform most or all the value dimensions of the BM; Other changes could be "moderate" incremental or extensive changes (e.g. minimal sequential relatively extensive changes in value dimension). See Fig. 5.1.

In a nutshell, BM change and transition begins from an idea (creation) to a functioning (ongoing development and maturation or even termination) of BM occurs through entrepreneur's efforts to deliver and capture value to customers by creating functional operating routines to generate revenue and foster profitability (Cavalcante et al., 2011; Linder and Cantrell, 2001). By the same token, the entrepreneurial journey of an international company truly begins when nascent or experienced entrepreneurs concretize an idea into monetizable products or services. Thus, relevant processes must be put in place for creating, capturing, and delivering value through the business solution rendered (Teece, 2010). Although this is simplification of how business models truly work, it is worth noting that it is by unbundling the mechanisms of a firm's (internationalization) activities that we can understand interconnected activity systems of firms (Osterwalder and Pigneur, 2010; Zott and Amit, 2010, 2011), as they transition into new markets. Moreover, the support of networks may facilitate development of strategies to exploit new opportunities or respond to threats, while satisfying customers' demands, or dealing with external stimuli (Saebi et al., 2016). Using both processual and retrospective information (data) would be appropriate and valuable to capture BM changes in the internationalization of firms.

## 5.5 Limitations and future research

Although BMs are prominent in the contemporary business and management literature, this literature developed in silos. There are still disagreements over conceptualizations and definitions of BMs in both theory and practice (Zott et al., 2010; Massa et al., 2017; Hennart, 2014). Semantics (in related BM concepts) in the field do not make it any easier. Different terms and concepts (see Table 2.1) all argue for change in the BM literature (Zott et al., 2011; Saebi 2014). Thus, without wading into endless theoretical debates about BM frameworks or applications, the focal context of this study was on understanding the role of BM changes from an IE perspective. Thus, this dissertation (and appended publications) approached *BM change* as a comprehensive concept that holistically examines the modifications (e.g., innovation and adaptations of BMs) implemented in the core value mechanisms of a firm. This helped to minimize protracted attention and unclear conceptualizations in the literature.

Different schools of thought have contributed to the BM discourse and have thereby provided different perspectives (Ritter and Lettl, 2018). This dissertation did not necessarily choose a side; instead, it reflectively drew from the complementarity of these perspectives to understand the dynamics of change (Wirtz et al., 2016). Moreover, Ritter and Lettl (2018) claim that combining these perspectives will create a solid foundation for further advances in research. Thus, this limitation can also be an advantage given that the core aim of the dissertation was to find a convergence in the different concepts used in BM research. Therefore, elevating one BM perspective over another would have defeated this purpose. Furthermore, this study examined the internationalization of SMEs but did so by thoroughly understanding BMs and their impact on business operations and activities internally and externally (Onetti et al., 2012; Child et al., 2020; Hennart, 2021). This study also shows that the theoretical backing and consideration of an integrative or

theoretical advancement are necessary for BM scholars. So far, the BM concept still suffers from incomplete descriptions with some critics attributing this to faulty patterns of thinking and unrealistic ideas (Porter, 2001). Future empirical studies should integrate BMs as a dynamic and interdisciplinary concept to demonstrate their relevance. In addition, scholars should develop measures to reinforce the constructs used to describe BM change (Foss and Saebi, 2017).

BM and IE research are relatively new, therefore, connecting both theoretically evolving research streams may be challenging. However, while different IE theoretical lenses were used to examine the under-represented discourse conceptually, contextually, and empirically in the BMs in this dissertation, more progress can be made in more streamlined research. For example, using a single theoretical construct (e.g., the resource-based view) could provide deeper insights into how BMs explain the internationalization of entrepreneurial ventures. Furthermore, different definitions of internationalization and process models exist; however, these were excluded due to the limited scope of the dissertation and the multi-layered arguments that may have emerged by combining both domains. The dissertation approached IE based on the internationalization activities of small firms and the role of their entrepreneurs, and it additionally describes their behavior in accordance with their decisions, behavior, and actions that foster the internationalization process. Further research can examine different international entrepreneurial venture types (e.g., born globals, micro-multinationals, etc.) independently or comparatively based on their path dependencies. Adding the BM variable to internationalization studies can illuminate the different combinations or ways in which a firm internationalizes over time, though BMs have been established to provide better explanatory power to explain the speed of internationalization (Hennart, 2014; Ritter and Lettl, 2018; Hennart, 2021) even more so than its strategy.

*This dissertation makes the following future research suggestions.* First, the study examined BM change in internationalizing SMEs, and different IE theoretical lenses were also adopted to explore how BMs change. Some scholars may argue that they have specific characteristics that make them distinctive, and that IE research encompasses several types of venture types (e.g., INVs, born globals, micro-multinationals). Therefore, further research could explore BMs in the contexts of these other venture types and, beyond that, integrate diverse IE theoretical concepts to provide more evidence that reveals the relevance of BMs to IE research. Second, BM research would benefit from more contextualization, especially from the individual perspective. This dissertation showed that entrepreneurs' cognition and experiences influence the creation and development of organizational processes critical to a BM. However, the entrepreneurial context has been under-represented in both the BM and IE discourses. Contextualization in IE research is believed to reinforce familiarity with the studied phenomena rather than reporting on distant events and issues in a presiding environment (Michailova, 2011; Welter, 2011; Zahra et al., 2014). However, understanding manifest BM changes only from the individual's perspective, may lead to discarding relevant information and generating a narrative based on the ideals of what the entrepreneur may want to portray in their business. Future research should account for contextual variables in explaining

BM change as they become part of the story being told by linking them with theory building and testing (Zahra, 2007; Welter, 2011; Zahra and Wright, 2011). Research explorations should also include different actors (e.g., partners, customers, suppliers) to gain more varied explanations on how BMs change. This could involve more in-depth qualitative explorations, e.g., grounded theory, case studies, or even a single case that makes persuasive arguments based on the contextual dimensions that affect BM changes (Siggelkow, 2007). Longitudinal studies can also provide a processual exploration of the patterns and contextual causal effects of BM changes as founders engage in internationalization over time.

Fourth, the empirical and theoretical findings of this study demonstrate that the topic of BMs is as important for academics (e.g., Chesbrough, 2010; Teece, 2010; Zott and Amit, 2011; Massa et al., 2017) as it is for entrepreneurs (Lindgart et al., 2009; Pohle and Chapman, 2010). Thus, a BM is analogous to a fulcrum that integrates theory and practice and brings balance to understanding the inner workings of BMs. Furthermore, there is agreement between practitioners and academics that BMs tell a firm's story and demonstrate the logic of how firms remain profitable (Drucker, 1989; Magretta, 2002; Lindgart et al., 2009; Pohle and Chapman, 2010). Thus, it makes sense for both researchers and practitioners to fully engage in describing their models and how they work so that a fusion of thoughts can be achieved, and ideas can be generated through which BMs can be better understood by academics and practitioners (Wällnofer and Hacklin, 2013). Researchers could iterate data and analysis with the entrepreneur at more frequent intervals, to gather observational and even processual data to capture change activities and initiatives in these micro-processes—providing a richer understanding of BM change. Entrepreneurs should also be conversant with their BMs. At the same time, they should provide precise details about the implications for managers of the success or failures of their activities and make relevant changes that lead to long-term growth and sustainable competitive advantage.

Fifth, alongside financial incentives, valuable network alliances, employee enthusiasm, and effective leadership support the evolution of BMs and long-term international success (Aspara et al., 2011). However, the role of networks and employees remains largely under-represented in BM research. Scholars (e.g., Child and Hsieh, 2014; Bankvall et al., 2017; Child et al., 2017) suggest that the influence of business network relationships and the extent of their involvement in SME internationalization are expected to be of relevance in the emergence of BMs. Network ties and the capability of networks surface as common approaches that influence changes to the BMs of SMEs as they internationalize. There is a need for greater scrutiny of the role played by network configurations to understand how firms interact with their partners to co-create value and cope with changes occurring in their BMs (Torkelli et al., 2012, 2015; Bankvall et al., 2017). Future research could examine the creation, formation, and management of networks and how the interrelationship between different stakeholders (customers, competitors, partners, suppliers, investors, legislators) stimulates the internationalization of firms and the capacity to change BMs. Additionally, considering that diversity in culture, social, legislative, or even ethical concerns in practice sway the decisions, actions,

and interactions of entrepreneurial firms, future research could also examine how networking capability shapes the actions and decision-making processes of entrepreneurs, and how they encounter and engage with different international market contexts.

Although conceptually discussed in this dissertation, the topic of decision-making logic used a business case to offer relevant propositions. Empirical (qualitative and quantitative) data would be needed to examine the relationships between decision-making logic and internationalization to further test and verify the propositions in a contextual setting. In future studies, BM changes and the integrative loop between effectual and causal decision-making could be examined in the longitudinal development process of internationalizing firms. Future studies should also investigate effectuation and causation as an organizational ambidexterity, as well as how firms change and develop their BMs over time, or even in unique industrial contexts. Such studies could lead to valuable insights into entrepreneurial cognition, and how entrepreneurs respond to international opportunities.

To conclude, the BM change concept can be viewed as a common denominator that can explain the activities of firms and the mechanisms (e.g., decisions or actions), through which they navigate the international context. However, given the drastic changes being witnessed in these unpredictable times (Casadesus-Masanell and Zhu, 2013), it would be myopic for researchers and practitioners to ignore the relevance of BM change. In fact, contrary to the popular belief that *change comes to make the existing obsolete*, as researchers, we can honor the newer ways of doing things while not becoming mired in the past. In other words, by reflecting on both the old and the new, we are better able to forecast and offer helpful, practical implications for firms in these dynamic times. More research on BM and BM change and IE as synergistic constructs would make fruitful contributions towards this era of global business change (Zahra 2021; Etemad, 2021; Hennart et al., 2021).

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## Appendix A: Survey questionnaire items

Outline of survey questionnaire items for quantitative study (1 = disagree strongly, 7 = agree strongly).

Publication I: Survey Questionnaire Items	
<b>Business model innovation</b> <i>McGrath, 2010;</i> <i>Spieth et al. 2014;</i> <i>Markides, 2006.</i> <i>(Validated with Clauss 2017)</i>	<ul style="list-style-type: none"> <li>- When necessary, we are able to carry out massive internal reconfigurations to enhance our overall value proposition to our customers</li> <li>- When we sense an opportunity, we are quick at re-organizing our operating processes</li> <li>- When necessary, we are able to reorganize our partner network to improve our value proposition to our customers.</li> <li>- New opportunities to serve our customers are quickly understood.</li> <li>- We regularly consider innovative opportunities for changing our existing pricing models.</li> </ul>
<b>Entrepreneurial Orientation</b> <i>Naldi et al. 2007;</i> <i>Knight 1997; Covin and Slevin 1989;</i> <i>Jantunen et al 2005;</i> <i>Wiklund and Shepherd 2005; Naman and Slevin 1993</i>	<ul style="list-style-type: none"> <li>- In dealing with its competitors, my firm typically initiates actions, to which competitors then respond.</li> <li>- In dealing with its competitors, my firm is very often the first business to introduce new products/services, administrative techniques, operating technologies, etc.</li> <li>- In general, the top managers of my firm have a strong tendency to be ahead of others in introducing novel ideas or products.</li> <li>- We have very many new lines of products/services (marketed in the past 5 years)</li> <li>- In general, the top managers of my firm favor a strong emphasis on R&amp;D, technological leadership, and innovations.</li> <li>- Changes in product or service lines have usually been quite dramatic</li> <li>- In general, the top managers of my firm have a strong tendency to be ahead of others in introducing novel ideas or products.</li> <li>- Our company has a strong proclivity for high-risk projects (with chances of very high returns).</li> <li>- When confronted with decisions involving uncertainty, my firm typically adopts a bold posture in order to maximize the probability of exploiting opportunities.</li> <li>- Owing to the nature of the operational environment, bold and wide-ranging acts are necessary to achieve the firm's objectives.</li> </ul>
<b>International Performance (Subjective)</b> <i>Protcko and Dornberger, 2014;</i> <i>Bianchi et al., 2017</i>	<ul style="list-style-type: none"> <li>- Return on Investments</li> <li>- Profitability</li> <li>- Image building</li> <li>- Competence and capability development</li> </ul>
Publication II: Survey Questionnaire Items	
<b>Network capabilities</b> <i>Chen et al., 2009</i> <i>(validated with Ritter et al., 2002)</i>	<ul style="list-style-type: none"> <li>- we analyze what we would like to achieve with which collaborators.</li> <li>- we rely on close individual relationships to secure personnel and financial resources.</li> <li>- we judge in advance which possible partners to talk to about building relationships.</li> <li>- we appoint coordinators who are responsible for the relationships with our collaborators.</li> <li>- we discuss with collaborators regularly on how to support each other to achieve success.</li> <li>- we can deal flexibly without collaborators.</li> <li>- we almost always solve problems constructively with our collaborators.</li> </ul>

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<p><b>BMI</b> <i>Clauss, 2017</i></p>	<ul style="list-style-type: none"> <li>- we consistently adopt new ways to make transaction activities easier with stakeholders</li> <li>- we frequently monitor our innovative operational processes, routines, and norms and adapt them to our business model</li> <li>- we often evaluate our existing processes and significantly change them if needed</li> <li>- we constantly re-evaluate our internal human resource requirements and provide the necessary training for employees</li> <li>- we always reinvent our business model by enhancing our interaction with our customers and partners in novel ways</li> <li>- our employees' opinions contribute to major changes in our company's core activities.</li> </ul>
<p><b>International Performance</b> <i>Protcko and Dornberger, 2014; Bianchi et al., 2017</i></p>	<ul style="list-style-type: none"> <li>- expansion to new markets</li> <li>- achievement of goals set for internationalization</li> <li>- overall foreign sales growth</li> <li>- foreign sales growth in major markets</li> <li>- profitability of foreign operations</li> <li>- overall performance in foreign markets</li> <li>- performance compared to main competitors</li> <li>- overall market shares abroad.</li> </ul>

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## **Appendix B: Interview questions**

Outline of semi-structured interview questions for qualitative study.

### **Publication III & IV**

#### ***General***

- Tell about yourself
- How many employees do you have and what are your main departments?
- What is your main product or services?
- Who are your main customers?
- Describe the main channels you reach your customers?
- Who are your main competitors?
- What are the key strengths of your company and how are you better than competitors?
- Describe your main competitive advantage

#### **Internationalization**

- What markets does your company operate in internationally?
- What was your main motivation for internationalization?
- How did you identify the international market opportunity?
- What kind of opportunities trigger your interest when you internationalize?
- What kind of international business experience prior to founding or joining the company?
- How have you applied your international experience to your firm operations now?
- Challenges faced in managing your clients internationally
- How do you adapt your products/services to foreign markets? (Is this something you think will happen every time you enter a new market)
- How do your partners influence your operations abroad?

#### **Business model Change**

##### ***Before the company launch of company***

- How did you get the initial idea to start this company before registration? (Business opportunity)
- Has the initial idea you had before starting the company is still the same as the idea you had before the official registration of the company?
- In general, how do you improve or innovate the existing ideas within your company?

##### ***After the starting/launching your company***

- Did you modify your business idea after the launch of your company?
- Why did it change?

#### **Products and services**

- Are there issues that cause changes in your BM and products?
- For what reason have you had to modify your existing product and services

#### **Customers**

- What value do you deliver to your customers?
- How have you had to modify any of your product or service due to your customer needs?

#### **Partners and networks**

- Who are your key partners that you collaborate with in your business process?

- How do you collaborate with your partners in improving your business?
- How do you manage your relationships?
- What ways do you influence your partner relationships?

***Key business process and operations (Changes on BM due to internal or external events)***

- How can you describe your major operations (Core processes)?
- Have you had to close down or re-organize some of your operations?
- Describe or give examples of challenges or events that might force you to change the way your business operates in the future?
- How have you changed or improved some of your operational/business processes changing in general?
- Have you had to hire people for that reason? (Did this lead to major changes like re-organizing employees or changing your operation or products?)
- What departments in your organization is mostly affected by such changes?
- Do you have any legislations or regulatory issues that influence your business activities?

***Firm level (Employee capabilities)***

- How often do you train employees?
- What kind of trainings are suitable for them?
- How have your employees supported in seeking and identifying new opportunities/ ideas within your company?

***Channels***

- How do you deliver your product the customers?
- How do you sell your products?
- What entities are responsible or help you deliver your products to your customers

***Earning logic***

- What is the main way you earn (logic) money for the company?
- What measures do you take to manage or optimize your costs?

***Funding***

- Has your company incorporated or used any venture capitalist services or funding agencies?
- What kind of project is it?
  - o Can you describe it and your level of involvement?
  - o If its project how long did it take?
  - o Is it useful and how have they helped?
- What kind of support do you think you need to help move your business process forward?

***Future view of the firm***

- As an entrepreneur, here do you see yourself in next 5 years?
- Where do you see your company in next 5 years?

## **Publication V**

### ***Background information***

Company:

- Foundation:
- No. of employees:
- Other relevant info:

Interviewee:

- Name
- Position
- Education and Experience
- What Cleantech means for the company

### **Business Model**

*Value propositions*

- What products/services company offers? Changes?
- Who are company's customers? Changes?
- What channels are used to reach the customers? Changes?
- What benefits customer gets of using company's service/product? Changes?
- What is company's competitive advantage/ What makes the company better than competitors? Changes?

*Value creation*

- Technology
- Specific partners/networks
- Process
- Competences

*Value capture*

- What is the company's earning logic? Changes?
- In general, how has the overall BM changed after its foundation? Which components and why?
- Have these changes in BM brought up new opportunities, especially in the international context?

### **Internationalization**

- Tell about your current international operations/markets
- What was the initial reason/motivation to internationalize?
- How did you recognize your very first international opportunity?
- Where the more opportunities available? How did you decide which one to implement?
- How the recognizing of international opportunities have evolved/ do you have now different ways to recognize international opportunities?
- When your company has found new international opportunities, have their implementation required some BM changes?
  - o Which components and what kind of changes?
- Do you act more based on your BM and recognize opportunities that fit into that BM, or another way around; seeing what opportunities are coming your way and then making the necessary changes to your BM?



## **Publication I**

Asemokha, A., Musona, J., Torkkeli, L. and Saarenketo, S.  
**Business model innovation and entrepreneurial orientation relationships in SMEs:  
Implications for international performance**

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## Business model innovation and entrepreneurial orientation relationships in SMEs: Implications for international performance



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### Abstract

Academic research is increasingly emphasizing the critical role of business models (BMs) and business model innovation (BMI) in the international entrepreneurship (IE) domain, yet empirical studies on the topic are quite limited. This study demonstrates the role of BMI and entrepreneurial orientation (EO) in the internationalization of small- and medium-sized enterprises (SMEs). Specifically, we explored the mediating role of BMI in the relationship between EO and international performance among internationalizing SMEs. Drawing on a cross-industrial sample of 95 international Finnish SMEs, we empirically test the hypothesized relationships by developing a confirmatory factor analysis measurement model with subsequent application of ordinary least squares multiple regression. The results suggest that BMI positively and significantly mediates the relationship between EO and international performance. In addition, EO has a positive and significant effect on SMEs' BMI. Thus, the findings of the study imply that both BMI and EO are important drivers of international performance for internationalizing SMEs. The study contributes to the IE literature by illustrating the dynamics of BMI and providing evidence of the linkages between strategic orientations and BMI in the international performance of SMEs.

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## Résumé

La investigación académica enfatiza cada vez más el carácter crítico del modelos de negocio y la innovación de modelos de negocio en el ámbito del emprendimiento internacional, sin embargo los estudios empíricos acerca del tema son bastante limitados. Este estudio demuestra el papel que juega la innovación de los modelos de negocio y la orientación emprendedora en la internacionalización de las pequeñas y medianas empresas. Específicamente, exploramos el carácter mediador de la innovación de los modelos de negocio en las relaciones entre la orientación emprendedora y el desempeño internacional de las PYMEs que se internacionalizan. En base a una muestra interindustrial de 95 PYMES finlandesas internacionales, se contrastan empíricamente las hipótesis mediante el desarrollo de un modelo de medición de análisis factorial confirmatorio con la posterior aplicación de regresión múltiple de mínimos cuadrados ordinarios. Los resultados muestran que la innovación de los modelos de negocio media de manera positiva y significativa la relación entre la orientación emprendedora y el desempeño internacional. Asimismo, la orientación emprendedora tiene un efecto positivo y significativo en la innovación del modelo de negocio de las PYMES. Así pues, los resultados del estudio implican que tanto la innovación de los modelos de negocio como la orientación empresarial son importantes impulsores del desempeño internacional en la internacionalización de las PYMES. El estudio contribuye a la literatura sobre emprendimiento internacional ilustrando la dinámica de la innovación de modelos de negocio y aportando evidencia sobre los vínculos existentes entre las orientaciones estratégicas y la innovación de los modelos de negocio en el desempeño internacional de las pequeñas y medianas empresas.

**Keywords** Business models · Business model innovation · International entrepreneurship · Entrepreneurial orientation · International performance · SMEs

**Palabras clave** Modelos de Negocio · Innovación de Modelos de Negocio · Emprendimiento Internacional · Orientación Emprendedora · Desempeño Internacional · PYMEs

## Summary highlights

*Contributions:* The study contributes to the emerging discussion on the dynamics of business models, business model innovation (BMI), and international performance in international entrepreneurship and strategic orientation literature. It does so by jointly analyzing the effect and linkages between BMI, entrepreneurial orientation (EO), and international performance of internationalizing SMEs. Practical and managerial implications are also provided as a result.

*Purpose:* There are limited studies examining the combined effect of EO and BMI on international performance in IE research. We explore internationalizing SMEs, by examining BMI as a mediating variable in the EO–international performance relationship. Thus, by linking EO and international performance through the lens of BMI, we elucidate the role of BMI in SME internationalization as well as strategic orientations in the IE domain. The study responds to the question: What effect do BMI and EO have in the international performance of SMEs?

*Data:* Data were collected from a cross-industrial sample of SMEs in Finland through a structured online survey instrument based on a 7-point Likert scale. A total of 95 internationalizing SMEs comprised the final sample used in the analysis.

*Finding/Results:* The results demonstrate that EO has a positive and significant effect on BMI, with BMI also being positively and significantly related to the international performance of internationalizing SMEs. The results show that BMI mediates the relationship between EO and international performance. This implies that SMEs that innovate their BMs in response to the unfamiliar, dynamic, and uncertain international market conditions are able to enhance their international performance. The model suggests that the direct relationship between EO and international performance is positive but non-significant.

*Theoretical implications and recommendations:* The study links together the literature on business models and strategic orientations in illustrating international entrepreneurial behavior. More specifically, it indicates that internationalizing SMEs modify their BMs to satisfy the international market contexts and requirements. Therefore, having the ability to make modifications to the business model and possessing entrepreneurial mindsets allows SMEs to thrive and perform better in foreign markets. By examining EO and the BMI activities, that influence systematic changes in a firm's core processes, we can gain more insights on SME business models and their implications to international performance.

*Practical implications and recommendations:* The study highlights that a firm's ardent approach to innovativeness, proactiveness, and risk-taking fosters the proper management of SME internationalization activities especially in an uncertain and competitive market environment. Thus, an entrepreneurial mindset and engagement in BMI are paramount for SMEs to remain competitive and to satisfy international market requirements. BMI is also considered a valuable ad hoc approach for SMEs especially for supporting internationalization strategies and augmenting for resource and capability constraints.

*Limitations and future research:* The single-country context and cross-sectional nature of the data used in this study may limit generalizability across contexts. Multi-country data would provide an opportunity for more variation, and future research should analyze specific industry sectors in multiple country contexts to develop the range of within-industry and contextual generalizations. Future studies could consider in-depth qualitative inquiry to gain more insights into business model changes and the mechanisms through which they affect international performance. In the same vein, further research will also benefit from clarifying the inconsistencies that exist in both EO and BMI measurement scales and constructs, thereby improving the robustness of IE research. Thus, it will be fruitful to conduct more studies that explore and foster theoretical grounding in the synergies between BMI dynamics and other strategic orientations variables as this will benefit the emerging field of BM and BMI and push research on entrepreneurial firms forward.

## Introduction

International entrepreneurship (IE) research is increasingly reflecting on the strategic issues and challenges that entrepreneurial firms face as they recognize and seize opportunities in foreign markets (Shane and Venkataraman 2000; Zahra et al. 2005). Similarly, in corporate practice, small- and medium-sized enterprises (SMEs) strive to gain a foothold in markets across national borders, in a bid to remain profitable and grow (Schneider and Spieth 2013). They do so by modifying their products, services, and BMs to satisfy the requirements of these markets (Nummela et al. 2004; Onetti et al. 2012; Child et al. 2017). SMEs, therefore, deliberately carve out strategies to establish continuous and ongoing value to prosper (Aspara et al. 2010). This study explores the relationship between business model innovation (BMI) and entrepreneurial orientation (EO) and the implications of BMI and EO for the international performance of SMEs. Although prior studies on this topic have investigated EO and BMI separately or examined only their direct effects (Lumpkin and Dess 1996; Wiklund and Shepherd 2005; Zott and Amit 2008; Aspara et al. 2010), studies on the combined effect of BMI and EO on international performance outcomes remain scarce. Indeed, there is a limited extant IE literature examining the combined role of strategic orientations and firm activities such as BMI, in the SME internationalization process (See Schneider and Spieth 2013; Hagen et al. 2017; Acosta et al. 2018). More so, there are few studies which explore the response of entrepreneurial SMEs—in terms of reconfiguring their value proposition, appropriation, and capture mechanisms, and how these affect their international performance (Knight and Cavusgil 2005; Aspara et al. 2010; Jantunen et al. 2005; Coviello 2015; Foss and Saebi 2017; Acosta et al. 2018). Thus, examining the dynamics of business model activities and the role of EO in internationalizing enterprises are vital (Aspara et al. 2010; Jantunen et al. 2005; Foss and Saebi 2017, 2018). This study was aimed at answering the research question: *What effect do BMI and EO have in the international performance of SMEs?*

In exploring IE, EO is relevant (Miller 1983; Lumpkin and Dess 1996, 2001) because the phenomenon explores a combination of entrepreneurial activities such as opportunity seeking and exploitation, innovation, proactiveness, and risk-seeking behavior of entrepreneurs across national borders (McDougall and Oviatt 2000; Zucchella et al. 2018). Thus, studies focusing on the influence of EO on internationalization activities can be valuable for understanding the peculiarities of SME internationalization in general (Laufs and Schwens 2014; Wiklund and Shepherd 2005; Jantunen et al. 2005; Acosta et al. 2018). Similarly, investigating entrepreneurial actions and the effects of their internationalization activities in foreign markets alongside other variables, such as organizational changes, BMI and performance would be valuable towards advancing IE research (Jantunen et al. 2005; Zucchella et al. 2018). Business model, and IE research, in general, would achieve milestones by including other strategic orientation constructs, such as EO (Aspara et al. 2010; Jantunen et al. 2005; Foss and Saebi 2017, 2018).

In this study, we considered BMI as a lens for viewing internationalizing SME activities (Foss and Saebi 2017, 2018; Acosta et al. 2018). Prior studies on the emerging concept of BMs drew our attention to the theoretical importance of including the strategic angle of the dynamics of BMs and SMEs' international activities (Aspara et al. 2010; Wirtz et al. 2016; Child et al. 2017; Foss and Saebi 2017, 2018). Some

studies attest that the key activities defining entrepreneurial firms and actions are closely associated with EO, BMI, and improved firm performance (Hamel 2000; Wiklund and Shepherd 2005; Wang 2008; Chesbrough 2010; Zott et al. 2011; Clauss 2017; Foss and Saebi 2017). However, due to ambiguities in the definition and conceptualization of BMs and BMI, the concepts have not been extensively researched (Mitchell et al. 2002; Morris et al. 2005; Malmström et al. 2015; Clauss 2017; Foss and Saebi 2017). Moreover, researchers have highlighted the need for more SME-focused empirical studies on the effects of EO and the international performance implications of firms with an emphasis on BMI (Aspara et al. 2010; Acosta et al. 2018).

As earlier elucidated, the concept of BMI as a mediating variable in the EO–international performance relationship has not been extensively explored in the IE literature (Aspara et al. 2010; Günzel and Holm 2013; Clauss 2017; Foss and Saebi 2017); hence, the study makes the following contributions. First, we introduce the concept of BMI to the relationship between EO and the international performance of internationalizing SMEs. We do so by exploring the dynamics of internationally operating entrepreneurial firms and the consequences of their BMI activities for their international performance, thereby contributing to IE domain, business model innovation, and strategic orientation literature, which is currently limited. Next, we build our argumentation on BMI and EO by examining the perspectives of EO and the dynamics of BMI, which influence some systematic changes in a firm’s core processes (Hwang and Christensen 2008; Cavalcante et al. 2011; Mezger 2014). Furthermore, although managerial practice and academic research have continually shown interest in the concepts of BMI and the entrepreneurial orientation of SMEs (Jantunen et al. 2005; Zucchella et al. 2018; Foss and Saebi 2017), few studies have examined these two streams of research together. Through the lens of BMI mediation, we contribute theoretically and provide managerial implications regarding the EO–international performance relationship.

The paper proceeds as follows. First, it outlines the literature from which we draw our arguments for the hypothesis development. Subsequently, it describes the research methodology and empirical data used to test the hypotheses, followed by the empirical analysis and discussion of the results. The paper concludes with a discussion of the key findings and contribution, the research limitations, and areas for future research.

## Literature and hypothesis development

### Business model innovation and international performance

As most businesses constantly face market uncertainties, it is crucial that they make intermittent changes, reinvent their business processes, and devise new ways and opportunities to grow and remain profitable (Covin and Slevin 1989; Wiklund and Shepherd 2003, 2005; Amit and Zott 2012; Clauss 2017). IE studies have noted that varying transitions and changes in today’s international business environment largely influence BM lifecycles (Hamel 2000; Cavalcante et al. 2011). Thus, exploring BMs and BMI provide an avenue to study change because they accommodate the flexibility required for firms to change, to meet the demands of a turbulent and uncertain business

environment (Osterwalder and Pigneur 2010; Cavalcante et al. 2011; Amit and Zott 2012; Hennart 2014). BMs are abstracted as a firm's core repeated and standard processes, which are necessary for business performance (Cavalcante et al. 2011, Cavalcante 2014). Similarly, with a specific focus on large firms, Sosna et al. (2010) suggest that BMI is a key driver of success, citing examples such as Apple iTunes, Amazon, and Dell.

Pioneers of BM research have varying definitions of the concept. A business model is described as a logic for value creation, delivery, and capture (Osterwalder and Pigneur 2010) or as a system of independent and interdependent activities that determine how a firm organizes the business with its stakeholders (Amit and Zott 2012). However, despite the extensive research conceptualizing and defining BMs, most studies abstract their definition of BMs merely at a conceptual (and less operational) level (Cavalcante et al. 2011; Foss and Saebi 2017, 2018). BMs are dynamic and unique, and they have been linked to different fields and theoretical perspectives, such as innovation (Hwang and Christensen 2008), strategic management (Miles et al. 2006; Johnson et al. 2008), high-tech SMEs (Mets 2009), and innovation management (Chesbrough 2010; Bucherer et al. 2012). Some studies link BMI to financial performance (Aspara et al. 2010) while other studies relate BMs and BMI to SME internationalization (Child et al. 2017). BMs are therefore an effective tool which can be used to increase a firms' stability and robustness as they navigate their day-to-day activities (e.g., Zott and Amit 2008; Foss and Saebi 2017).

Pivotal studies suggest that BMI involves carrying out novel activities with important functions of creating, capturing, and delivering value as well as capitalizing on opportunities (Casadesus-Masanell and Ricart 2010; Günzel and Holm 2013). According to Amit and Zott (2012), BMI allows managers to create and explore novel and existing market opportunities through three main activity systems: content innovation (the process of adding new activities to a system), structure innovation (linking activities in new ways), and governance innovation (aimed at changing the individuals in performing an activity). Largely, we surmise that BMI is a process of creating and developing new and unique value chain architectures, such as new products or services, market delivery patterns, and even organizational processes to improve firm performance (Chesbrough 2010). However, business models may transition a firm to a completely new competitive landscape or lead to radical modifications of the firms existing business processes (Nadler et al. 1997; Günzel and Holm 2013). Thus, management initiatives and capabilities are fundamental to a company's competitive performance and differentiation strategy (Amit and Zott 2012). In other words, the capability to incorporate BMI is important for competitive performance and customer value delivery, as well for successful domestic and international operations (Morris 2009; Chesbrough 2010; Child et al. 2017).

Entrepreneurial actions and processes may trigger BM and process changes, which can have either positive or negative implications for redefining the BM, thereby affecting a firm's international performance (Cavalcante et al. 2011). The literature on BMI illustrates that the main ideas and motives of BMI are twofold. First, BMI aims to fulfill the previously unmet needs of current customers by creating value for them. Second, BMI is motivated by the desire to attract a new customer base, resulting in the development of new value creation and capture mechanisms and activities (e.g., Markides 2006; Chesbrough 2007; Frankenberger

et al. 2013). As such, entrepreneurially oriented SMEs have the propensity to create new value for both new and existing customers in international markets. However, the mechanisms put in place are integral because they foster the subsequent value creation and capture activities thereby leading to improved international performance (Lumpkin and Dess 1996; Zahra and Garvis 2000; Child et al. 2017). Furthermore, small firms tend to have the needed ability to effectively and flexibly create value and compete in new international market niches because of their rapid decision-making, structural simplicity, and entrepreneurial mindset (Dean et al. 1998). Aspara et al. (2010) concluded that small northern European firms that put more emphasis on BMI and less emphasis on BM replication showed a higher average value of profitable growth. Therefore, it could be argued that small entrepreneurial firms with a focus on BMI in international markets have higher average international performance rates.

A firm can improve its international performance by using turnaround strategies and initiating processes and activities that allow for developing BM change capabilities (Barker and Duhaime 1997; Bruton and Ahlstrom 2003; Amit and Zott 2012). Using the same logic, firms may improve their performance if they are willing to change, alter, or reinvent their business operations to devise suitable BMs; or develop their BMs by hypothesizing, testing, and revising them (Magretta 2002; Chesbrough 2010; McGrath 2010). Internationalizing SMEs undergo several transitions and changes in their BM lifecycles; therefore, the systematic changes that occur in a firm's core processes affect a business model and BMI process (Cavalcante et al. 2011; Child et al. 2017). BMI is considered dynamic and requires specific managerial competencies to address change and innovation in an organization (Demil and Lecocq 2010). In line with strategic interpretations of BMs, a firm's performance could be improved by aligning ideologies and strategies with changes in the business environment and reducing organizational inertia (Doz and Kosonen 2010). The conceptual work of Kim and Mauborgne (2005) supports that firms that creatively adopt BMI as a strategy tend to be more competitive and yield superior performance. Extending this reasoning to performance at the international level, we argue herein that internationalizing firms with a high emphasis on BMI exhibit improved competitive advantage and international growth. Therefore, we hypothesize that:

H1) There is a positive relationship between BMI and SMEs' international performance

### **Entrepreneurial orientation and business model innovation**

Entrepreneurship and EO are different but related concepts that have been used interchangeably in some streams of literature (Lumpkin and Dess 1996, 2001). Lumpkin and Dess (2001) distinguished EO from entrepreneurship by referring to entrepreneurial activities as what individuals or businesses do, and EO as how the activities are conducted. EO refers to the practices, processes, and activities in which firms or entrepreneurial entities become involved in making decisions that lead to innovation and market entry decisions (Lumpkin and Dess 1996, 2001; Wang 2008). Hakala (2013) also describes EO as a strategic orientation that captures the entrepreneurial aspects of a firm's strategies. Other studies describe EO as an independent

posture that involves a firm's commitment to innovativeness, proactiveness, and risk-taking to develop and implement the firm's strategies (Miller 1983; Covin and Lumpkin 2011; José Ruiz-Ortega et al. 2013). Proactiveness is a posture of preempting and acting on future needs of the firm (Wiklund and Shepherd 2005). Proactivity reflects the determination of a firm to pursue promising opportunities (Miller 1983). Thus, proactive firms are pace setters or first movers in the competitive market rather than followers (Lumpkin and Dess 1996). Innovativeness is closely linked with the firm's pursuit of new opportunities, new ideas, and involvement in creative processes, which result in the production of new products, services, and technological processes (Lumpkin and Dess 1996). Risk-taking is the extent and willingness of managers to commit firm resources to activities or projects where the outcomes are unknown, and the cost of failure is high in uncertain market environments (Wiklund and Shepherd 2005; Lumpkin and Dess 1996; Miller 1983).

The issue of BM change is crucial in providing depth to BM and BMI discussion. This is because the objective of the BM change is aimed at identifying and exploring growth opportunities, with the aim of creating sustainable competitive advantages (Müller 2014). However, not all changes in an organization lead to BM changes (Müller 2014; Cavalcante et al. 2011). Rather, only the changes that influence the core standard repeated process of a BM constitutes a change in the business model (Cavalcante et al. 2011 pp.49). BM changes are initiated to fit business operations within specific prevailing business environments (Covin et al. 2006). Firms may correspondingly possess distinct capabilities for implementing and initiating BM changes in distinct market environments (Cavalcante et al. 2011; Cavalcante 2014). However, the extent of change or improvement relating to the development of BMs may vary (Müller 2014) and depends on the target market context and requirements (Child et al. 2017). More so, competitor firms tend to develop business methods or processes that threaten the survival of rival firms. For that reason, managers may respond to such threats by developing unique capabilities that would allow them to change or adjust key standard repeated processes, leading to BMI (e.g., customer loyalty programs, value-added services) as a competitive strategy (Morris et al. 2005; Miles et al. 2006; Johnson et al. 2008).

Achtenhagen et al. (2013) highlighted that strategic actions and capabilities of managers are essential to a BM especially in dynamic and competitive environments. Therefore, resource management, leadership styles, and organizational commitment are critical and can strengthen SME business models over time (Casadesus-Masanell and Ricart 2010; Smith et al. 2010; Achtenhagen et al. 2013). An entrepreneurial mindset is a valuable enabler and driver for innovating BMs especially for internationalizing SMEs (Cavalcante et al. 2011; Amit and Zott 2012; Schneider and Spieth 2013; Child et al. 2017; Foss and Saebi 2017, 2018). For that reason, most entrepreneurial firms consider BMI as a better alternative and/or complementary to a new product or process innovation, especially in resource constraint and uncertain market environments (Amit and Zott 2012; Foss and Saebi 2018).

Furthermore, key organizational processes interact to generate revenue and keep the organization going. These processes are designed to keep the organization competitive in turbulent and dynamic environments, and they are affected by managerial approaches and decisions (Cavalcante et al. 2011; Cavalcante 2014). BMI could be considered a part of a firm's corporate culture and/or capability (Tellis et al. 2009),

with the view that the more innovative a firm is, the better its international performance will be (Aspara et al. 2010; Child et al. 2017). Alternatively, placing emphasis on BMI could be considered a firm's continuous second-order strategic choice, subject to the choice of preserving or exploiting the firm's existing resources and procedures versus exploring new ones (Tollin 2008), to provide a clear demarcation between innovativeness in EO and innovation in BMI perspective. We adopted the viewpoint that allows us to consider BMI as a continuous strategic orientation and the conscious renewing of a firm's core business logic and processes, as opposed to limiting the scope of a firm's innovative activities to a single product, service, or innovation project (Aspara et al. 2010; Schneider and Spieth 2013).

As earlier highlighted, international entrepreneurs operate in ever-changing business environments. Business continuity and performance in such environments is determined by the entrepreneurs' ability to interpret the activities of these dynamic environments and, subsequently, develop abilities and implement changes to navigate through turbulent times (Zott 2003; Zahra et al. 2005, 2006). The BM of a firm serves the interlinked purpose of providing stability for the development of the firm activities as well as the flexibility to accommodate changes (Müller 2014; Cavalcante et al. 2011). Lindgardt et al. (2009) suggest that adopting BMI is a valued approach that can be proactively adopted by managers to explore new ways to tackle competitive environments to prosper and grow. Therefore, the adjustment of a firm's key processes, which foster growth, innovation activities, proactiveness, and the ability to make risky decisions, determines the extent of creating new and unique processes and are important drivers of BMI (Lumpkin and Dess 1996; Aspara et al. 2010; Cavalcante et al. 2011; Hakala 2011). If a manager is unable to identify appropriate change initiatives and/or decisions appropriate for exploiting valuable opportunities, poor performance can follow (Cavalcante et al. 2011).

For internationalizing SMEs, the introduction of new goods and services, as well as the utilization of opportunities, may require modifying the BM in line with target foreign market expectations (Vithessonthi and Thourmrunroje 2011; Child et al. 2017). Although some SME studies highlight that recognizing and utilization of market opportunity may not always lead to superior performance (Guo et al. 2017). An entrepreneur's ability to change an existing BM or adopt a completely new BM to suit the foreign market is linked with positive international performance (Doz and Kosonen 2010; Onetti et al. 2012; Michea 2016; Child et al. 2017). Hence, the decisions of the manager are pivotal in dealing with changes that occur in the business model and a firm's organizational processes (Covin and Slevin 1989; Wiklund and Shepherd 2005). Vithessonthi and Thourmrunroje (2011) also note that firms may occasionally benefit from being not first movers but followers, emphasizing the need to proceed with slow and infrequent BM changes—although according to the same study, engaging in rapid and dramatic BM changes could negatively influence the survival of firms. Amit and Zott (2012) argue that in the face of resource scarcity and uncertain future returns, managers need to adopt BMI as an alternative or complement to product and process innovations. This is because even minor BM changes can result in increased performance.

Studies from academics and practice highlight that firms may design and initiate activities and processes aimed at providing stability to their business in line with the changing international business environment (Zott 2003; Pohle and Chapman 2006; Cavalcante

et al. 2011). Hennart (2014) argues that a firm's ability to succeed in the international market is a result of the effectiveness of its BM. Thus, a firm's ability to be proactive and develop its dynamic capabilities is stimulated by preparatory strategic adjustments, and change initiatives, which lead to BM change and allows the firm to stay ahead of their competition (Jantunen et al. 2005; Teece 2010, 2012). This is particularly true of firms grappling with high costs for research and development (R&D), human resources, product development, and technological innovation (Markides 2006; Jantunen 2005; Wirtz et al. 2016). Zhao et al. (2016) emphasize the need for firms across industries to be able to reconfigure the value offered to customers to reflect changes in technologies, institutions, infrastructure, and stakeholders. BMI is essential because an innovative and well-executed BM has the potential to outperform new technology or even a business idea (Chesbrough 2007). Therefore, to enhance products, services, and process innovation; achieve cost efficiency; promote organizational learning as well as timely execution of resource configurations, firms will benefit by complementing BMI with their core processes and activities (Zott 2003; Chesbrough 2007).

Managers should also consider adopting a risk-taking attitude to recognize, explore, seize, and exploit both technological and market opportunities (Chesbrough 2007; Child et al. 2017; Guo et al. 2017). In other words, firms should make audacious decisions that lead to an improvement in firm processes, as well as capitalize on new opportunities, thereby enhancing the BMI capability of the firm. Therefore, in line with these perspectives, we posit that EO would foster managerial decisions that lead to BMI as well as the development of capabilities that ultimately lead to modifications in the core processes and activities of the firm's value creation, delivery, and appropriation system. Thus, we hypothesize that:

- H2) There is a positive relationship between the EO of internationalizing SMEs and their BMI.

### **Entrepreneurial orientation and international performance**

As noted above, EO is a willingness to be proactive towards market opportunity, competition, and the ability to be innovative, as well as the commitment to make risky business decisions under uncertainty to gain competitive advantage (Wiklund and Shepherd 2005). Rauch et al. (2009) suggest that EO drives better firm performance, and several other studies (e.g., Bhuian et al. 2005; Rauch et al. 2009; Hakala 2013) find that EO can foster the development of new opportunities, products, services, and business ideas. The positive relationship between EO and organizational performance is also well established (e.g., Acosta et al. 2018). In other words, EO supports the firm's ability to continuously identify and generate new business opportunities with the aim of achieving a long-lasting competitive advantage (José Ruiz-Ortega et al. 2013; Wiklund and Shepherd 2003, 2005). In exploring the concept of EO and its link to SMEs' international performance, we examined EO as a single construct by combining innovation, proactiveness, and risk-taking (Jantunen et al. 2005; Covin et al. 2006). Following Miller's (1983) definition, entrepreneurially oriented firms are those engaged in product–market innovation by taking risks in their ventures and proactively utilizing product and

market opportunities that are inherent in the business environment. This definition suggests that innovativeness, proactiveness, and risk-taking are the core characteristics of entrepreneurial firms. Further studies extend the construct of EO to self-governance and competitive aggressiveness as dimensions of EO (Lumpkin and Dess 1996, 2001). The extension of the construct of EO illuminates that firms continually aim to outperform competitors and they do so to follow their vision and to be successful (Lumpkin and Dess 2001). The fundamental objective of EO is closely associated with business strategy (Zhao et al. 2016), organizational change (Wang 2008), and new venture creation. As such in competitive and unpredictable environments, managers who augment their strategies by including BMI and redesigning programs aimed at developing organizational capabilities and processes foster competitive advantage (Morris 2009).

Multiple studies support that EO improves performance (Wiklund and Shepherd 2005; Jantunen et al. 2005); however, a few studies emphasize that non-significant relationships exist between direct observations of EO and performance (Hart 1992; Smart and Conant 1994; Slater and Narver 2000). Empirical observations have viewed such non-significant results as a possible methodological lapse in the research design (Wiklund and Shepherd 2005). Other studies mention that the context specificity and characteristic complexity of the external environment and internal firm may affect the conceptualizations of the relationship between EO and performance outcomes (Covin and Slevin 1989, 1991; Lumpkin and Dess 1996; Wiklund and Shepherd 2005). Thus, the higher the EO, the higher the propensity for discovering and recognizing opportunity, differentiation, and competitive advantage (Wiklund and Shepherd 2005), leading to positive performance outcomes.

A firm's performance can be either long or short term and international performance evaluations can be conducted on either an objective or subjective basis (Protcko and Dornberger 2014). Subjective methods include evaluating firms' international performance relative to international expectations or the competitive environment, while objective measures involve international financial measurements, such as return on investment, return on equity, profit margins, sales, or other indicators from international business activities (Protcko and Dornberger 2014). International performance could also be measured using either financial (e.g., international sales growth, international market share growth, and international profitability) or non-financial measures and in a multi-dimensional context (Protcko and Dornberger (2014). Although various financial assessments can be adapted to examine performance, essentially, entrepreneurial activities are vital to performance and affect profitability and growth in the international market (Zahra and Garvis 2000; Jantunen et al. 2005).

Thus, this study supports that SMEs' international performance is dependent on the capability to be innovative and creative and the ability to adapt to new developments, structures, and processes to have superior international performance in uncertain market environments (Zahra and George 2002; Jantunen et al. 2005; Bianchi et al. 2017) Therefore, in line with these views, we hypothesize that:

- H3) There is a positive relationship between the EO of internationalizing SMEs and their international performance.

### **The mediating effect of business model innovation on the entrepreneurial orientation–international performance relationship**

The reason for introducing BMI as a mediating variable in the EO–international performance relationship arises from the allusion that as firms advance in operational processes, their BMs often undergo several modifications before they are put into practice. Therefore, changes made to the BM are based on entrepreneurial activities and decisions in response to dynamic business environments and international market requirement (Zahra and Garvis 2000; Cavalcante 2014; Cavalcante et al. 2011; Achtenhagen et al. 2013). Thus, the role and decisions of an entrepreneurial firm are central to the changes that occur in its BM (Achtenhagen et al. 2013). Empirical findings also highlight that the mediating effect between EO and performance can be based on factors that are internal or external to the firm (Lumpkin and Dess 1996), which may vary according to the environment and the firm's access to resources. International performance in competitive and dynamic environments is also strengthened by effective decision-making, fostering innovation activities, creating new opportunities, and capturing new markets. (Covin and Slevin 1990, Covin et al. 2006; Hamel 2000; Amit and Zott 2012; Clauss 2017). These factors that strengthen international performance also form part of the firm's value proposition and value capture mechanisms that define BMs (Amit and Zott 2012). Hence, a firm's international performance is closely linked to entrepreneurial risk-taking, proactiveness, innovativeness, and organizational processes that constitute a change in a BM (Lumpkin and Dess 1996; Wiklund and Shepherd 2005; Cavalcante et al. 2011; Onetti et al. 2012). Internationalizing SMEs that prioritize both EO and BMI have a higher propensity for discovering and recognizing opportunity, differentiation, and sustainable competitive advantage (Wiklund and Shepherd 2005; Hennart 2014; Child et al. 2017).

Internationalizing SMEs undergo several transitions and changes in BM lifecycles to tackle competition and catch up with market trends (Lindgardt et al. 2009; Cavalcante et al. 2011; Child et al. 2017). BMI is adopted by SMEs for reformulation or creation of new strategies for sustained competitive advantage in foreign markets (Wirtz et al. 2016). Hence, the BM a firm adopts, is a consequence of the firm's strategy (Casadesus-Masanell and Ricart 2010). Although, scholars maintain that in the face of uncertainty, firm growth and positive performance is a function of deliberate managerial choices and the ability to effectively adapt the BM to market dynamics (Wiklund and Shepherd 2005; Doz and Kosonen 2010; Cavalcante et al. 2011; Achtenhagen et al. 2013). There is lack of clarity concerning the concept and measurement of BM and BMI, which may lead to inconsistencies and mixed results in evaluating BMI and performance relationships (Zott and Amit 2008; Schneider and Spieth 2013; Patzelt et al. 2008). As such, studies aimed at exploring and clarifying the role of BM and BMI are valuable towards advancing business model research (Clauss 2017; Foss and Saebi 2017).

Overall, using the logic of mediation enabled us conclude that BM changes are closely linked to EO and organizational processes that may influence SME international performance (Hamel 2000; Wang 2008). Thus, the firm's choice of BM

determines its international performance (Hennart 2014; Child et al. 2017). We surmise that although EO does not fully provide sufficient conditions and explanation on rapid SME internationalization, adopting the “right” BM fosters international expansion and success (Hennart 2014). BMI encourages managers to navigate dynamic environments, identify underutilized resources and capabilities for future value, and gain sustainable performance advantage (Amit and Zott 2012; Hennart 2014). Thus, the following hypothesis on the mediation between EO and international performance is posited.

H4) BMI mediates the relationship between EO and SMEs’ international performance.

The conceptual model developed based on the literature review is represented in Fig. 1.

## Methodology

### Data collection and sample characteristics

The empirical data were collected via a structured online survey instrument from a cross-industrial sample of SMEs in Finland over a 6-month span. Specifically, we collected the data during May–September 2014 via a cross-sectional web-based survey instrument using Qualtrics online software. We compiled the initial list of firms to be contacted from the Amadeus online database and made sure to include a large variety of industry sectors to ensure that both manufacturing- and service-oriented companies were included in the sample. The industry sectors included in the initial draw were forest industry, chemical industry, metal industry, other manufacturing activities, mining and quarrying, energy supply, water supply, waste management, and construction industry. The resulting list had a total of 1130 firms, which we contacted via phone to solicit their participation in the survey. A total of 78 invalid firms (e.g., subsidiaries and other non-independent SME entities) were excluded from the final data collection. Ultimately, 311 firms declined to participate, with the most common reason being lack

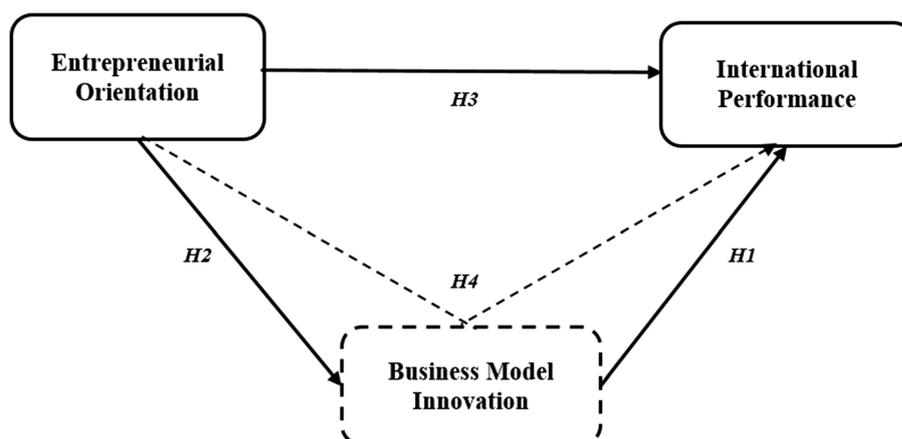


Fig. 1 The conceptual model developed based on the literature review

of time to do so. Furthermore, since 306 of the most relevant decision-makers in the contacted SMEs (most often the CEO) were not reached throughout the data collection process, they were excluded from the data collection process.

The survey scale items were developed and adapted from literature by a group of IE and entrepreneurship researchers who also translated the scale items from the Finnish to English. A professional English language editor service conducted back translation to ensure the accuracy of the translated items. We subsequently pre-tested the resulting survey with two SME managers from different fields to ensure its legibility to the target respondents. During the data collection process, we tracked the responses daily and sent two rounds of reminder emails to those who had not responded within 2 weeks of the initial contact. With the collection process concluded, we had a total of 148 responses at our disposal, for a 14% response rate (148/1052). Since such a response rate is acceptable in terms of rigor in entrepreneurship research (see Rutherford et al. 2017), we deemed the sample adequate for analysis. Of the final respondents, 64% (95) had international operations; thus, they constituted the final sample. The SMEs had, 58 employees on average, and an average age of 33 years, which had been operating internationally for an average of 20 years.

### Measure development

Firms' international performance may be either long or short term and international performance evaluations can be conducted on either an objective or subjective basis (Protcko and Dornberger 2014). Subjective methods include evaluating international performance relative to international expectations or the competitive environment, while objective measures involve international financial measurements, such as return on investment, return on equity, profit margins, sales, or other indicators from international business activities (Protcko and Dornberger 2014). Bianchi et al. (2017) suggest that the international performance of SMEs in international markets is heavily dependent on their ability to adapt to new developments, structures, and processes. This is in line with the findings of Protcko and Dornberger (2014) who suggest that international performance should be measured using either financial or non-financial measures and in a multi-dimensional context. Financial measures include international sales growth, international market share growth, and international profitability.

Therefore, we developed our dependent and independent variables through multi-item scales adopted from previous studies (e.g., Naman and Slevin 1993; Jantunen et al. 2005; Wiklund and Shepherd 2005). The dependent variable international performance was measured subjectively by asking respondents what they thought about their business activities on international platforms and markets (Jantunen et al. 2005; Naude et al. 2014; Bianchi et al. 2017). Using a 7-point Likert scale ranging from strongly disagree (1) to strongly agree (7), respondents were asked to subjectively rate their firm's international activities on such measures as return on investment in international markets, effect of internationalization on firm competence and capability development, profitability of international activities, and firm image building through internationalization. According to Wiklund and Shepherd (2005), most studies use growth to proxy business performance, which could take the form of profitability, sales growth, number of employees, or market share. Furthermore, we developed a subjective measure that was based on Dawes' (1999) proposition that a firm's subjective

performance measures relative to its competitors are highly correlated with its objective performance measures, such as net profit margin, return on assets, return on investment, and return on earnings.

Overall, to measure EO, proactiveness, risk-taking, and innovativeness were taken as a single EO variable. Hence, the three EO dimensions were assessed as a single EO construct, in line with the measurements adopted by Naldi et al. (2007), Knight (1997), and Covin and Slevin (1989). These measures were also in line with other studies (see Jantunen et al.'s (2005), Wiklund and Shepherd's (2005), and Naman and Slevin's (1993)) which explore EO. On the other hand, due to the novelty of the concept of BMI, no existing scales at the time of data collection were considered suitable; hence, the measures for BMI used in this study were drawn from conceptual measures (see McGrath 2010 and Spieth et al. 2014). Similarly, other items for measuring BMI were developed following Markides' (2006) BMI perspective. The items explored firm and managerial issues concerning the ability to reorganize operating processes in line with opportunities, rapid changes, and value proposition. The items exploring reconfiguration of operations of the firm were considered in developing the BMI construct, which we validated with recent and widely accepted measures from Clauss (2017).

### **Descriptive statistics and measure reliability**

The average age of the SMEs was 33 years (SD = 24.9, range = 2 to 144 years). The number of employees ranged from 6 to 240, with an average of 58 (SD = 52.4, range = 6 to 240). Cronbach's alpha values for individual variables ranged from 0.79 to 0.85. BMI varied from scores of 2 to the maximum score of 7, with an average score of 4.6. Since the study used subjective measures of both the manifest variables and their constructs, we needed to assess the validity of these measures. The use of multiple-item scales requires the computation of Cronbach's coefficient alpha ( $\alpha$ ) values to estimate scale reliability (Cronbach 1951). It turned out that the scales used were reliable, as shown by a standardized Cronbach's coefficient alpha value of 0.907. We also conducted measure reliability checks for the confirmatory factor analysis (CFA) model to assess the model's internal consistency. These reliability checks included indicator reliability and common method variance. Harman's single-factor test showed a one-factor variance of 35 (7%).

### **Common method bias**

We recognized that applying Likert-scale items from extant literature and relying on the single most informed respondent in the SMEs (in most cases, the CEO) to fill out the survey on behalf of the company necessitated taking steps to mitigate the potential threat of common method bias influencing the results. Consequently, we followed the recommendations of Podsakoff et al. (2003) and Chang et al. (2010) and placed the scales and items used in the analysis in different parts of the larger survey and included several negatively worded items to observe any potential halo effects in the responses. We also considered that since we had hypothesized a non-trivial conceptual model including mediation effects, it was unlikely that the respondents would have been aware of the model relationships at a cognitive level to the point of them having a significant influence on their responses (cf. Chang et al. 2010, 179). In addition to these

measures, during the analysis, we conducted Harman's single-factor tests (7% single-factor variance) to uncover any potential common method bias in the empirical data. The results indicated that there were no single factors underlying the data. For these reasons, common method bias was not expected to have a significant effect on the results of the analysis.

## Results and analysis

As suggested, by Anderson and Gerbing (1988) in assessing the hypothesized model, we followed a two-step approach. The first step involved generating a measurement model through CFA and analyzing its fit to the data. Subsequently, we developed an ordinary least squares (OLS), multiple regression model. The CFA results suggest that all manifest variables loaded significantly on their respective latent factors with factor loadings ranging from 0.61 to 0.92 and individual variable measures of sampling adequacy (MSA) ranging from 0.74 to 0.94. Table 1 presents the descriptive statistics, reliabilities, and correlation matrix, and Table 2 shows the regression results. As the correlation matrix reveals, on the one hand, an SME's age is negatively correlated with EO and BMI, but positively correlated with international performance; also, firm size is positively correlated with international performance, BMI, and EO.

The ordinary least squares (OLS) regression results show that the hypothesized relationship between BMI and international performance (H1) is positive and significant with a regression coefficient ( $\beta_1$ ) of 0.321 ( $t = 2.15$ ,  $p = 0.035$ ). A further assessment of the relationship between BMI and various aspects of international performance (as shown in Table 2—not hypothesized) shows that BMI is positively and significantly

**Table 1** Descriptive statistics, reliabilities, and correlation matrix

Variables	1	2	3	4	5	6	7	8	9
1. Profitability		0.77 <sup>a</sup>	0.74 <sup>a</sup>	0.90 <sup>a</sup>	0.20	0.17	0.93 <sup>a</sup>	0.15	0.09
2. Image build			0.85 <sup>a</sup>	0.77 <sup>a</sup>	0.16	0.25 <sup>a</sup>	0.92 <sup>a</sup>	0.25 <sup>a</sup>	0.17
3. Compet. and cap. dvlpmnt				0.73 <sup>a</sup>	0.23 <sup>a</sup>	0.24 <sup>a</sup>	0.90 <sup>a</sup>	0.20 <sup>a</sup>	0.16
4. Return on investment					0.29 <sup>a</sup>	0.22 <sup>a</sup>	0.92 <sup>a</sup>	0.19	0.12
5. Age						0.25 <sup>a</sup>	0.24 <sup>a</sup>	-0.05	-0.04
6. Size							0.24 <sup>a</sup>	0.07	0.05
7. Intl.performance								0.21 <sup>a</sup>	0.14
8. Bus.Model. Innov									0.58 <sup>a</sup>
9. Entr. orientation									
Minimum	1	1	1	1	2	6	1	2	1.33
Maximum	7	7	7	7	144	240	7	7	6.77
Mean	4.32	4.91	4.91	4.02	33.05	57.51	4.54	4.60	4.15
Std. Deviation	1.96	1.73	1.89	1.79	24.89	52.37	1.69	1.11	1.14
Cronbach $\alpha$	0.79	0.79	0.79	0.79	0.85	0.85	0.78	0.84	0.85
Number of firms (N)	95	95	95	95	95	95	95	95	95

<sup>a</sup> $p < .05$

**Table 2** Regression results

Dependent variables	Std. regression coefficients of independent variables			Model fit and ANOVA		Std. regression coefficients of mediating variable		Model fit and ANOVA	
	Size	Age	EO	Adj. $R^2$	$F$ value	BMI	Adj. $R^2$	$F$ value	
International perfor.*	0.006	0.014	0.213	0.082 <sup>a</sup>	3.80 <sup>a</sup>	0.321 <sup>a</sup>	0.106 <sup>a</sup>	4.71 <sup>a</sup>	
Return on investment	0.005	.018 <sup>a</sup>	0.187	0.092 <sup>a</sup>	4.19 <sup>a</sup>	0.303	0.114 <sup>a</sup>	5.02 <sup>a</sup>	
Profitability	0.004	0.013	0.15	0.032	2.05	0.265	0.048	2.56	
Image building	0.007 <sup>c</sup>	0.008	0.257	0.070 <sup>a</sup>	3.35 <sup>a</sup>	0.372 <sup>a</sup>	0.098 <sup>a</sup>	4.41 <sup>a</sup>	
Competence and capability development	0.007	0.014	0.258	0.081 <sup>a</sup>	3.75 <sup>a</sup>	0.342 <sup>a</sup>	0.097 <sup>a</sup>	4.36 <sup>a</sup>	
Mediating variable									
BMI	0.001	-0.002	.561 <sup>a</sup>	.322 <sup>a</sup>	15.97 <sup>a</sup>				

<sup>a</sup>  $p < .05$ , <sup>b</sup>  $p < .01$ , <sup>c</sup>  $p < .10$

related to firm image building, competence, and capability development. A positive but non-significant relationship exists between BMI and profitability, as well as BMI and returns on investment. Hypothesis 2, on the relationship between EO and BMI, is supported by our model, with a regression coefficient ( $\beta_2$ ) of 0.561 ( $t = 6.82$ ,  $p < 0.0001$ ). The direct relationship between EO and international performance (H3) is not supported by our model as it is positive but non-significant ( $\beta_3 = 0.213$ ,  $t = 1.46$ ,  $p < 0.149$ ). Moreover, EO is positively related to the managers' satisfaction with international performance (see [Appendix](#), not hypothesized), but the relationship is non-significant. The results further support the hypothesis that BMI positively and significantly mediates the EO–international performance relationship. The mediation effect of BMI on the EO–international performance relationship (H4) was tested using the Sobel's test, which shows a reduced value of the regression coefficient of the explanatory variable on the dependent variable upon adding the mediator variable. This then provides support for the hypothesis that BMI mediates the EO–international performance relationship.

Our control variables of firm age and size reveal positive but non-significant relationships via EO and BMI as well as via BMI and international performance.

## Discussion and conclusion

The role of entrepreneurial firm characteristics, strategies, and activities as influencers and predictors of SME internationalization and international performance outcomes is increasingly taking center stage in business research (Knight and Cavusgil 2005; Child et al. 2017; Acosta et al. 2018). As previously noted, studies have adopted relevant strategic orientation variables, such as market orientation, learning orientation, and EO (Sinkula et al. 1997; Hakala 2011; Evers 2011; Martin and Javalgi 2016; Acosta et al.

2018) to explore performance. The aim of this study was to understand the role of BMI and EO in SMEs' international performance. Our finding that EO positively but non-significantly predicts international performance contradicts the conclusions of other studies examining the EO–performance relationship. For example, Wang (2008) highlights that risk-taking behavior has a direct, positive, and significant impact on performance. We argue that even though EO is important for firms' positive international performance, the positive effect could be mediated or moderated by some other mechanism, such as (in this case) SMEs' capability to innovate their BMs, to be of significance.

Several studies have identified a positive relationship between EO and international performance and have noted that this relationship is enhanced by various factors, such as access to finance (Wiklund and Shepherd 2005), firm size, organizational culture (Rauch et al. 2009), and strategic organizational processes (Covin et al. 2006). The hypothesis that the relationship between BMI and international performance is positive and significant illuminates that internationalizing entrepreneurial firms with a high propensity to change their BM through BMI to address internal and external factors are more successful on international platforms. Thus, firms that are entrepreneurially oriented and have the capability to adjust their business activities and processes in response to dynamic business environments are likely to perform well internationally, as they are quick to respond to various changing business needs and requirements by incorporating them into their dominant logic. Our study is in line with Knight's (2001) proposed causal chain, *orientation–strategies–performance*, and confirms that BMI is part of the strategic processes that are important for the EO–international performance relationship (Covin et al. 2006). BMI is also considered a continuous strategic orientation of a firm because (Siguaw et al. 2006); it becomes part of the firm's corporate culture and capabilities (Tellis et al. 2009; Pohle and Chapman 2006). In the same vein, the more innovative a firm is in terms of its BM, the better (Tellis et al. 2009). This perspective is supported by our findings that positive and significant relationships exist between EO and BMI and between BMI and international performance.

Due to the dominance of SMEs in Europe and their drive for internationalization, strategic positioning and BMI capabilities are becoming increasingly critical (Salavou and Avlonitis 2008). Literature suggests that positive outcomes from seizing and utilizing opportunities can lead to an increase in firm performance (Jantunen et al. 2005). Lumpkin and Dess (2001) state that firms that are proactive in the early stages of the industrial lifecycle are high performers, while competitively aggressive and mature firms perform much better than their counterparts and competitors. Thus, analyzing how SMEs adapt to changing business landscapes is of paramount importance, as BMI capability is a rare, unique, and non-imitable source of competitive advantage, on which internationalizing entrepreneurial firms can leverage with positive international performance spillover effects (Lu et al. 2010). This study complements other studies (e.g., Jantunen et al. 2005; Bianchi et al. 2017) by empirically contributing to the IE and strategy research through illuminating the relationships between EO, BMI capabilities, and international performance.

Through this study, we established that EO positively and significantly affects BMI. Congruent with this finding, Hamel (2000) notes the important links between different EO dimensions and organizational strategic processes. Davis et al. (2010) highlighted that proactive, innovative, and risk-taking firms have the potential to thrive in uncertain and

highly competitive market environments. We also identified that the positive effect of being proactive, innovative, and risk-taker on SME international performance is enhanced by the firm's ability to innovate their BMs and aim to satisfy dynamic international market requirements. Thus, we surmise that positive proactiveness increases the firms' ability to manage, identify, and efficiently utilize opportunities well ahead of competitors. Likewise, innovation fosters the development of new ideas, products, and services, and risk-taking allows for executing and implementing required changes to the BM and other firm processes, especially in uncertain and ever-changing business environments (Lumpkin and Dess 1996; Jantunen et al. 2005; Cavalcante 2014).

According to Schneider and Spieth (2013), BMI requires timely and effective identification and anticipation of dynamic changes in the environment. Extant studies also support that to be profitable and grow, internationalizing firms are confronted with the challenge of effectively managing various reconfiguration and innovation activities, and these activities would be better understood by exploring such firms and the initiative to innovate the existing BMs especially in competitive environments (Zahra and Garvis 2000; Jantunen et al. 2005; Aspara et al. 2010). Hence, the inclusion of BMI exemplifies that EO is a significant BMI enabler because it allows managers to strategically anticipate and handle volatile and competitive markets (Schneider and Spieth 2013). Our findings reinforce studies that suggest that managers who are more strategically oriented and agile are more capable of innovating their BMs (Davis et al. 2010; Doz and Kosonen 2010; Cavalcante et al. 2011; Schneider and Spieth 2013; Clauss 2017). Thus, SMEs that have the strategic perceptions and sensitivity to renew BMs are more likely to thrive in the international market than SMEs that do not consider BM modifications (Wiklund and Shepherd 2005; Davis et al. 2010; Doz and Kosonen 2010; Hennart 2014). Jantunen et al. (2010) illuminate that to continually satisfy the requirements of dynamic market environments and achieve sustainable competitive advantage, a firm should be able to reconfigure its processes and recognize the need for BM modifications as well as their consequences.

More so, in line with studies on SME internationalization (Edmondson et al. 2001; Jantunen et al. 2005), we agree that the requirements, criteria, and conditions for conducting business across various national frontiers, such as culture, export channels, and competitive and institutional conditions, may vary. Therefore, the BM adopted for (an) international market(s) may not be applicable to the domestic market (Landau et al. 2016; Child et al. 2017). Firms should thus modify their BMs to satisfy and specifically fit the international target market contexts and requirements (Onetti et al. 2012; Landau et al. 2016; Child et al. 2017). It is also important for SMEs to have the capabilities required to modify their core processes through BMI to be successful and influence positive outcomes (Aspara et al. 2010; Jantunen 2005; Cavalcante 2014; Wirtz et al. 2016; Child et al. 2017). An organization that is actively innovating and audacious in implementing and coordinating novel strategies have superior performance in both the domestic and foreign market (Lumpkin and Dess 2001; Jantunen et al. 2005; Jantunen 2005).

Although different variables have been explored in empirical research as determinants of international performance (Leonidou et al. 2002; Wiklund and Shepherd 2005; Jantunen et al. 2005; Acosta et al. 2018), having the capabilities to implement value reconfiguration activities—in this context, making

modifications only to the BM—might not be enough to guarantee the international success of SMEs (Zahra and Garvis 2000; Jantunen et al. 2005; Foss and Saebi 2018). Rather, SMEs that possess formidable EO with strategic regeneration approach to BM changes and international organizational capabilities can thrive in foreign markets (Lumpkin and Dess 1996; Jantunen et al. 2005; Foss and Saebi 2018). In other words, strategic orientation can be further explored by integrating BM change on the nexus between EO and international performance. We also note that the actions and strategies of the entrepreneurial firm are critical and influential to changes that occur in its BM (Doz and Kosonen 2010; Cavalcante et al. 2011). Therefore, we surmise performance can be improved by encouraging entrepreneurial firms to develop their ability to explore, analyze, and interpret the business environment, and consequently, initiate processes and activities that foster BMI and propagate competitive advantage.

### Contribution

Prior studies examining the direct link between EO and international performance have been critiqued as inadequate and short of theoretical insights for understanding the performance implications of EO (Hart 1992; Smart and Conant 1994; Wang 2008; Linton and Kask 2016). Proponents of entrepreneurship research encourage further exploration of EO and performance by including mediating elements (Lumpkin and Dess 2001; Wiklund and Shepherd 2005; Li et al. 2009). This study contributes by examining the link between EO and international performance through the mediating role of BMI. We explored whether the emphasis on BMI by entrepreneurially oriented internationalizing SMEs would have a positive effect on their international performance. Previous studies fell short of recognizing that the aspect of SME internationalization research and strategy could be further examined by including BM and BMI (Child et al. 2017; Foss and Saebi 2017, 2018). Thus, emerging literature on IE and BMs highlights the need to expand and integrate these research domains to provide a more holistic view of small firm activities in ever-changing international business environments (Catherine and Wang 2008; Teece 2010; Sainio et al. 2011; Zott et al. 2011; Onetti et al. 2012; Child et al. 2017).

Furthermore, recent studies note that theoretical contributions to the advancement of BM and BMI research should explore the role of BMI as a mediating variable in other useful research streams (Foss and Saebi 2017, 2018). Through this study, we have managed to explore and synthesize the roles of entrepreneurial firms' BMs and BMI by examining the strategic activities of SME managers during internationalization activities and processes (Cavalcante et al. 2011; Clauss 2017; Foss and Saebi 2017). We surmise that BMI is based on a firm's continuous innovation activities and continuous strategic orientation process (Aspara et al. 2010). Exploring BMI activities of SMEs provide more insights on the benefit of innovative changes that occur in the BM as well as the costs and risks to the firm in internationalization activities (Aspara et al. 2010; Child et al. 2017).

Studies illuminate that a gap exists and encourages more studies that explore international performance implications and combining BMI with various strategic orientations constructs (Acosta et al. 2018; Foss and Saebi 2017, 2018). This study contributes to the emerging research on BM changes as well as ongoing research on

SME internationalization and strategic orientations. By combining BMI constructs and EO, the study produced novel insights on SME internationalization. Moreover, exploring BMI provides deeper insights and reasoning into a firm's internal changes aimed at satisfying and addressing customer segments and needs, and the production, distribution, and delivery method of both existing and novel products and services (Markides 2006; Aspara et al. 2010). In the same vein, although researchers have called for further examination of the EO of internationalizing SMEs and their strategic influence on international performance, very few studies have specifically attempted to extend the focus by exploring the effect of BMI (Jantunen et al. 2005; Child et al. 2017; Foss and Saebi 2017, 2018). Our findings support that firms possessing unique strategies and EO foster profitability and revenue growth in international market frontiers (Zahra and Garvis 2000; Nummela et al. 2004; Jantunen et al. 2005).

Overall, the study contributes to the literature by clarifying the role of strategic orientations in the internationalization of SMEs in general. Through this study, we extend the relationship between the strategic orientation and international performance. Thereby, supporting studies which suggest that the relevance of mediating variables on the relationship between EO and international performance will concurrently move the BMI and EO research forward (Lumpkin and Dess 2001; Wiklund and Shepherd 2005; Li et al. 2009; Foss and Saebi 2018). Second, we examined BMI as a key success factor for SMEs' internationalization activities (Sosna et al. 2010; Anwar and Ali Shah 2018) as well as the international performance implications of BMI (Aspara et al. 2010; Amit and Zott 2012). To our knowledge, neither of these notions was empirically confirmed previously; rather, they were only partly alluded to in earlier conceptual works. The theoretical contribution in advancing knowledge of BMs and BMI also derives from the finding that BMI can mediate relationships between orientations and performance outcomes in the international market context. Through this study, we sought to capture the role of BMs and BMI by exploring the strategic activities of SME managers (Cavalcante et al. 2011; Clauss 2017; Foss and Saebi 2017) and applying EO dimensions and BMI as mediators to evaluate their international performance. In the same vein, as Wiklund and Shepherd (2005) suggest, we also contribute to the evolving IE research by including BMI as a mediating variable to assess EO on SME performance. Lastly, we provide evidence of the linkages between the strategic orientations of EO and BMs in SME internationalization.

Finally, through this study, we identified that entrepreneurial firms that are strategically oriented and agile in dynamic business environments are more capable of innovating their BMs (Davis et al. 2010; Doz and Kosonen 2010; Cavalcante et al. 2011; Clauss 2017) and have positive performance outcomes. A firm's EO is a valuable enabler and driver of BMI (Lumpkin and Dess 1996). As such, managers exhibiting EO and the necessary awareness to renew their BMs foster strategic perceptions and sensitivity to improving their BMs (Zahra and Garvis 2000; Wiklund and Shepherd 2005; Davis et al. 2010; Doz and Kosonen 2010). Amit and Zott (2012) highlight that firms usually find it costly to innovate their products and processes in the face of high upfront investment costs with uncertain future returns and high market competition. This is so especially for internationalizing SMEs due to the competitive, dynamic, and uncertain international market environment (Zahra and Garvis 2000). Moreover, due to high costs of firm activities (e.g., investment in product and process innovation, R&D, and acquisition of specialized resources and equipment) SMEs facing critical resource

constraints may opt for BMI as an alternative and/or complement to product and process innovation. In other words, competitive pressures tend to make SMEs innovate their BMs and evidence from empirical studies shows that firms that prioritize BMI have the advantage to grow their operating margins rapidly (Amit and Zott 2012).

### Managerial implications

The results of this study yield potential implications for management and policy in practice. First, they can help managers of internationalization-seeking enterprises by pointing out the necessity of being willing to modify the firm's BM to internationalize successfully. We consider this implication a comforting one from the managerial point of view because it suggests that a company's BM need not be perfectly globally scalable from the beginning; instead, it can—and should—be revised according to the identified international market opportunities. BMI can entail reconsidering the value proposition of the enterprise to its customers, being quick to reorganize operational processes as necessary and being willing to consider changes in pricing. The results of this study suggest that an enterprise that is willing to engage in these activities can reap benefits through more extensive and satisfying international expansion. Adopting BMI offers companies suitable and alternative avenues to thrive and overcome competition in international market environments (Lindgardt et al. 2009; Child et al. 2017).

Second, the results emphasize the necessity of entrepreneurially oriented (i.e., risk-taking, proactive, and innovative) behavior for not only entrepreneurial internationalization specifically but also for BM development in general. Hence, it seems that by fostering an entrepreneurial culture within an SME, managers can reap benefits both in being able to expand their enterprise more extensively to foreign markets and for helping the organization become more agile and responsive to customer needs in general. Since successful value creation and capture is highly interlinked with BM development, this further highlights the role of EO in successful entrepreneurship both at home and abroad. Finally, for policymakers, the results highlight the importance of supporting, primarily, growth enterprises—that is, those SMEs that are willing to take the financial and strategic risks that international expansion entails. The study also portrays that entrepreneurially oriented companies not only being able to reach markets abroad but also, just as importantly, of being the kind of agile enterprises that the twenty-first century economy with its dynamic nature increasingly requires.

In sum, as firms identify and exploit opportunities outside their country borders, acquiring and organizing resources becomes essential for catering to upfront investment (e.g., R&D, purchasing new equipment, producing new goods and services) as well as for enhancing international performance. Thus, managers can tackle resource or capability constraints during their internationalization process by engaging in BMI to satisfy international market requirements and cope with uncertain and competitive international markets. The result shows that firms across various industrial sectors tend to carry out BMI to cope with competition and market uncertainty and remain profitable in the international market. The study supports previous propositions that BMI could act as a complement or alternative to product and process innovation, with positive international performance effects. Therefore, in the absence of sufficient resources, internationalizing entrepreneurial

SMEs should consider developing both their entrepreneurial mindset and BMI to enhance their competitiveness, growth, and profitability in international markets.

### Limitations and further research

Our study has some limitations, which also present potential areas for future research. In this study, we conceptualized EO as a single construct with three dimensions of innovativeness, proactiveness, and risk-taking because it allowed us to examine attributes, characteristics of the firm, and concurrently the influence of BMI on international performance. However, by no means would we claim the mediating role of BMI should be restricted to EO only. In fact, exploring whether a similar effect for other variables such as market orientation or learning orientation could further determine the generalizability of the results across the spectrum of strategic orientations in general (Hakala 2011; Acosta et al. 2018; Guo et al. 2017). Further research could consider exploring the role of BM changes with other entrepreneurial attributes and strategic perspectives and orientations such as learning orientation and market orientation to explore SME international activities. Studies exploring different characteristics of BM modifications and their implications on internationalization are valuable to the field of IE research. More studies could consider exploring how other factors, activities, and actors influence foreign market expansion (Hennart 2014; Child et al. 2017).

Literature suggests that variations exist in entrepreneurial orientation dimensions, with some studies (Miller 1983) suggesting three dimensions, while other studies suggest five (Lumpkin and Dess 1996). These inconsistencies might limit our research findings as we focused on three dimensions as suggested by Miller (1983). Additionally, we measured international performance subjectively, but in doing so, we sought to take preventive measures against any potential common method bias, as suggested by Podsakoff et al. (2003) and Chang et al. (2010), and by exploring aspects of international performance as individual variables. Moreover, because we used cross-sectional data and in a single-country context, thus we do not delve into causal interpretation among the key constructs explored. We suggest that future research consider analyzing industry-specific firms in single or multiple country contexts to provide further evidence for the generalizability of the results across different contexts. Finally, since the present study explored SMEs international performance implications from the point of view of EO and BMI, future research could extend to larger firms to get deeper insights into the research context and to further ascertain the generalizability of the results across firms of different sizes. Furthermore, we posit that in-depth qualitative inquiry on other drivers of business model changes as such as opportunity recognition, dynamic capabilities, decision-making logic, and the mechanisms through which they affect international performance (see Zott and Amit 2010; Foss and Saebi 2017; Guo et al. 2017) would yield richer data through which the BMI dynamics in international entrepreneurship could be studied. We confirmed that BMI is driven by an entrepreneurial orientation, managerial decisions, and the ability to implement change to capitalize on opportunities to gain competitive advantage (cf. Doz and Kosonen 2010; Michea 2016). Further research could also explore managerial activities, organizational activities, and other drivers that can influence BM changes in the internationalization of SMEs.

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## Appendix

### 1. International performance (subjective)

(1 = disagree strongly, 7 = agree strongly)

- Return on investment
- Profitability
- Image building
- Competence and capability development

### 2. Entrepreneurial orientation

(1 = disagree strongly, 7 = agree strongly)

- In dealing with its competitors, my firm typically initiates actions, to which competitors then respond.
- In dealing with its competitors, my firm is very often the first business to introduce new products/services, administrative techniques, operating technologies, etc.
- In general, the top managers of my firm have a strong tendency to be ahead of others in introducing novel ideas or products.
- We have very many new lines of products/services (marketed in the past 5 years).
- In general, the top managers of my firm favor a strong emphasis on R&D, technological leadership, and innovations.
- Changes in product or service lines have usually been quite dramatic.
- In general, the top managers of my firm have a strong tendency to be ahead of others in introducing novel ideas or products.
- Our company has a strong proclivity for high-risk projects (with chances of very high returns).
- When confronted with decisions involving uncertainty, my firm typically adopts a bold posture in order to maximize the probability of exploiting opportunities.
- Owing to the nature of the operational environment, bold and wide-ranging acts are necessary to achieve the firm's objectives.

### 3. Business model innovation

(1 = disagree strongly, 7 = agree strongly)

- When necessary, we are able to carry out massive internal reconfigurations to enhance our overall value proposition to our customers.
- When we sense an opportunity, we are quick at re-organizing our operating processes
- When necessary, we are able to reorganize our partner network to improve our value proposition to our customers.

- New opportunities to serve our customers are quickly understood.
- We regularly consider innovative opportunities for changing our existing pricing models.

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## **Publication II**

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**Business model innovation in international performance: The mediating effect of network capability**

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## **Business model innovation in international performance: the mediating effect of network capability**

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**Abstract:** Networks and business models are two critical defining factors in the internationalisation of small- and medium-sized enterprises (SMEs). Although scholars have recently suggested that business model innovation be linked to dynamic capabilities, there has been limited research interest. This study aims to do so by linking business model innovation with dynamic networking capabilities and examining their role in SME internationalisation. Using a sample of 210 internationally operating Finnish SMEs and conducting regression and mediation analysis, we find that: 1) network capability predicts business model innovation in SMEs; 2) business model innovation predicts higher international performance; 3) business model innovation mediates the relationship between network capability and international performance. The study thus contributes by establishing network capability as an antecedent of business model innovation in achieving international performance.

**Keywords:** business model; small- and medium-sized enterprises; SMEs; network capability; dynamic capabilities; internationalisation; international performance; business model innovation.

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## 1 Introduction

Firms are increasingly faced with growth challenges due to early internationalisation activities, technology advancements, and other operational and process activities (Onetti et al., 2012). Therefore, for companies aiming to survive and thrive in today's dynamic, hyper-competitive, and uncertain global business environment, the ability to innovate and bring changes to their business models is pertinent (Asemokha et al., 2019; Balboni and Bortoluzzi, 2016; Child et al., 2017; Doz and Kosonen, 2010; Wirtz et al., 2010). Similarly, managers are perpetually under pressure to make choices that are both internal and external to the firm to achieve favourable consequences for sustained competitive advantage (Kim and Mauborgne, 1997). This is especially the case for exporting and internationalising small- and medium-sized enterprises (SMEs) as their business models are a major defining factor in their rapid internationalisation (Abrahamsson, 2016; George and Bock, 2011; Hennart, 2014) and exporting. As such, internationalising firms tend to innovate and/or adapt their business models and governance structures in accordance with the growth and changes in their business operations abroad.

Business models are of importance because they describe the logic of firms' operations and how firms do business (Magretta, 2002; Teece, 2010; Zott et al., 2011) across national borders. We add to the growing body of knowledge that calls for more studies investigating the peculiarities of the business models of internationalising SMEs (Landau et al., 2016; Onetti et al., 2012; Sainio et al., 2011). While business models and business model change have become increasingly studied topics in recent years, there is a need for more empirical studies capable of explaining SME business models and their

related capability to manage stakeholder or network relationship influences and/or their organisational processes (Massa et al., 2017; Spieth et al., 2019). Consequently, the business model changes that internationalising SMEs undergo with the influence of network relationships has been largely neglected in the extant research (see Child et al., 2017). Prior studies have mostly focused on describing large, established organisations' existing business models without investigating and/or accounting for the changes occurring in their core activities as they internationalise (Bankvall et al., 2016; Gerasymenko et al., 2015). In this study, we posit that examining the relationships between business models and network capability can be expected to be particularly fruitful in the context of internationalising SMEs. We base this notion on the fact that the literature has found that business models underlie the successful international expansion of SMEs (Asemokha et al., 2019; Sainio et al., 2011, 2015) and the notion that firms need to develop appropriate capabilities to execute business model change successfully (Müller and Vorbach, 2016). However, due to the dearth of studies and clarity on what business models are, as well as the transitions they go through (Mezger, 2014), it will be valuable to explore business models in capability research to gain a better understanding of how firms create and generate value (Amit and Zott, 2001; Mezger, 2014; Teece, 2018).

Thus, the present study primarily contributes by examining the role of business model innovation and capabilities in the internationalisation of SMEs. In doing so, we refer to the dynamic capabilities' perspective (Teece et al., 1997) and seek to provide empirical confirmation of the dynamic capability as a significant enabler of business model innovation during internationalisation. As global partnerships can increase exports (Bahng et al., 2016), and network capability is essential in the internationalisation of SMEs (Mort and Weerawardena, 2006; Torkkeli et al., 2015b), this study posits that network capability is the specific capability that facilitates business model innovation in international SMEs. Lastly, we posit that network capability can predict business model innovation and that the latter can also have a mediating effect on the international performance of firms. The empirical results, obtained via regression modelling and mediation analysis, confirm this notion. The study thereby contributes by establishing network capability as an antecedent of business model innovation in achieving international performance.

This study continues as follows: we first present an overview of the prior discussion on business models and business model innovation, particularly from the SME perspective. Following that, we discuss the relationship between business models and dynamic capabilities in general – and network capabilities in particular – and present the empirical data collection procedure and the results of the analysis. We then discuss and highlight the main findings, outline the contribution and the implications of the study, and identify the limitations and suggest areas for future research.

## **2 Literature review and hypothesis development**

### *2.1 Business models*

Business models have become a widely studied concept in different areas of management discipline and practice (e.g., Coombes and Nicholson, 2013; Forkmann et al., 2016; Pohle and Chapman, 2006; Torkkeli et al., 2015b; Zott et al., 2011). The concept emerged in

the business research literature in the late 1990s owing to the advent of technology, strategy innovation systems, and the e-commerce era (Müller and Vorbach, 2016). Since then, the concept of business models has steadily evolved into a strategic component in business, especially in fostering capitalisation on opportunities and collaboration with stakeholders or networks (Abrahamsson, 2016; Asemokha et al., 2019; Nummela et al., 2004; Teece, 2010). Business models have been defined as the rationale governing how value is being created, delivered, and captured in an organisation (Osterwalder and Pigneur, 2010). Value creation (how value is generated), value proposition (itemisation of what kind of value offered), value capture (added value offerings to a customer), and the customer element (the key target group) are the core and essential components of a business model (Müller and Vorbach, 2016). Other studies define business models as a structural template that describes the way value is created and captured by the focal firm – and as an activity system that establishes its way of doing business (Teece, 2010; Zott et al., 2011). Similarly, Shafer et al. (2005) suggest that managers better understand what business models are by categorising them to taking into consideration strategic choices, the value networks, for creating value and capturing value.

Pivotal studies have established that business models are considered a useful unit of analysis of firm operations as business models have the stability that encourages the development of a firm's activities as well as the propensity to implement change through their value activities (Cavalcante et al., 2011). Therefore, reconnoitring business model change activities provides a platform for understanding internationalising small ventures and the navigations they make through their value activities to achieve growth internationally (Abrahamsson, 2016; Cavalcante, 2014). Transformative changes to the business model can occur through business model innovation activities (Demil and Lecocq, 2010). Likewise, Chesbrough (2010) points out that changes occurring to the business model confront the existing business architecture with new value creation delivery and reconfiguration activities. As such, managers implement business model change to encourage innovation within the core processes of a business unit or the organisation as a whole, especially when handling debouching environmental (internal and external) concerns (Abrahamsson, 2016; Balboni and Bortoluzzi, 2016; Doz and Kosonen, 2010). Business model changes also foster capitalisation on new opportunities, the mitigation of risks, and the strengthening of network and stakeholder relationships to maintain sustainable competitive advantage.

Amongst the distinct components of business models are the roles of networks (stakeholder relationships), alliances, customers, and/or partners; this aspect of business models takes into consideration and responds to questions regarding generating, creating, delivering, and commercialising value – that is, what is being offered to whom, how, and at what costs (Osterwalder and Pigneur, 2010; Richardson, 2008; Shafer et al., 2005). Onetti et al. (2012) further show that network relationships are a key variable in a business model design and that internationalising firms can address issues through the 'focus', 'locus', and 'modus' characteristics of their business model. Focus refers to the resource allocation decisions for different activities across the value chain, locus to the location of different activities, and modus to the mode of operation for the various activities, that being whether the activities should be conducted in-house or outsourced (Onetti et al., 2012). Thus, business models may function as a set of closely related decisions that are linked to a company's market strategy, transaction approach, organisational structure, and other internal and external activities, which are closely

related to its business networks and network transitions (Balboni and Bortoluzzi, 2016). As a result, a manager's understanding of business models is valuable because it provides forehand knowledge on the avenues in which the resources embedded in the network enter a firm and how the firm can organise its activities, resources, and processes internally to create and capture value (Lubik and Garnsey, 2016; Pohle and Chapman, 2006).

Nonetheless, firms may still encounter challenges as competitive pressures and global market trends (such as technology advances, internationalisation) continually cause disruptions in the status quo of a firm's operational processes and trigger the need for change or flexibility in the existing business model by management (Cavalcante, 2014; Cavalcante and et al., 2011). The dynamic transition of a business model from its original form to another is aimed at transforming an existing business model to conveniently accommodate the growth and sustainable competitive advantage of a company over time (Abrahamsson, 2016; Mateau and March-Chorda, 2016). Several researchers suggest that business models should not be regarded as a static concept as firms need to reconfigure their business models in their attempts to react to internal or external opportunities and threats (Bucherer et al., 2012; Mason and Spring, 2011). Such reshaping efforts are fundamental conditions for competitiveness in the rapidly changing market environment (Teece, 2010). Changes to business models require entrepreneurs to develop and apply appropriate dynamic capabilities (Forkmann et al., 2016; Gerasymenko et al., 2015; Müller and Vorbach, 2016) less the development of the business model be unsuccessful or fail (cf. von den Eichen et al., 2015). Therefore, SMEs in particular may make dramatic and novel changes to the main elements of business models – so-called 'business model innovation' – and work alongside partners to satisfy latent customer needs towards sustainable competitive advantage and international performance (Child et al., 2017; Clauss, 2017; Mateau and March-Chorda, 2016).

## *2.2 Business model innovation and dynamic network capability in SME internationalisation*

SMEs' internationalisation activities are increasingly becoming a significant contributor to the future growth of economies (Coviello and Munro, 1995; Gjellerup, 2000; Ruzzier et al., 2006). Despite the growing importance of SMEs, they may face barriers as they internationalise, such as limited resources and financing capabilities in addition to other market conditions. As a result, firms increasingly engage in foreign partnerships, investment, and other cross-border clustering activities to facilitate knowledge exchange, technology transfer, and communication to improve their performance and gain competitive advantage across borders (Coviello and Munro, 1995; Ruzzier et al., 2006). In short, internationalisation activities are a continually changing state, and/or a cumulative process, in which relationships are created, dissolved, or maintained to achieve firms' objectives (Johanson and Mattsson, 1993; Ruzzier et al., 2006). As such, the internationalisation of firms is considered more than just systematic cross-border involvement due to the role of network ties and collaborations (Johanson and Mattsson, 1993). Internationalisation is considered a vital by-product of a firm's effort to improve its position within a network(s) as a result of entrepreneurial actions (Schweizer et al., 2010). Hence, network relationships are important because they supplement and/or provide SMEs with the capabilities and support of the resources which boost internationalisation activities (Schweizer et al., 2010).

Nonetheless, some firms may still encounter daunting challenges as they make decisions and seek international opportunities for growth across borders (Galkina and Chetty, 2015; Ojala, 2009). As a result, they tend to continuously deploy doomed business models due to a lack of consideration of the competitive international environment (Casadesus-Masanell and Ricart, 2011). Exploring business model innovation through the dynamic capabilities' perspective provides insights into how firms sense opportunities and combine their distinct resources and capabilities to achieve competitive advantage (Mezger, 2014; Teece, 2018). Moreover, the success or failure of a business model is dependent on the nature of the integration between external market players in the industry (Velu, 2016; Spieth et al., 2019). Therefore, the development of a business model involves managerial decisions on how to innovate the business model, systemic changes in the customer value proposition, and engagement with partner relationships as well as the consequences of such market choices, all of which influence the firm's value creation and capture activities (Casadesus-Masanell and Ricart, 2011; Velu, 2016). For this reason, managers must build and develop capabilities that can accommodate changes to the business model and facilitate sustainable performance over time (Berghman et al., 2006; Demil and Lecocq, 2010; Mezger, 2014; Teece, 2018).

As mentioned above, implementing change in a business unit can occur through adaptation, innovation, or even experimenting with the business model (Cavalcante, 2014; Child et al., 2017; Demil and Lecocq, 2010; Hennart, 2014; Saebi et al., 2016). Essentially, business model innovation is a valuable approach through which firms can excel in internationalisation pursuit, profit, and growth and maintain competitive advantage (Child et al., 2017; Kim and Mauborgne, 1997; Mezger, 2014). Nevertheless, managers still struggle due to the complexity of and difficulty in initiating and/or implementing change in their business models (Cavalcante, 2014; Cavalcante et al., 2011; Mezger, 2014). Research revisiting business models through the lens of dynamic capabilities highlights that capabilities underlie the competitiveness of firms precisely because they reconfigure and shape the proficiency of the business model design (Teece, 2018). This view suggests that the combination of dynamic capabilities and strategy leads to novel and refined defensible business models (Teece, 2018). Such business models can, in turn, guide organisational transformation and, consequently, increase the profitability of firms.

The research on SMEs' international business models demonstrates that the business model adopted by firms in the domestic market may not be applicable in the foreign market (Child et al., 2017; Landau et al., 2016). For this reason, managers and entrepreneurs need to engage fully by making the necessary decisions to foster international operations as well as modifying their domestic business models to satisfy international market requirements and contexts and ensure firm survival and long-term performance (Child et al., 2017; George and Bock, 2011; Landau et al., 2016; Onetti et al., 2012). However, Teece (2018) notes that, more often than not, not all business models are successful and that managers must either be fine-tuned or overhauled to be lucrative and profitable.

In exploring business models, Mason and Leek (2008) draw from Hamel and Prahalad (1994) with the view that a network perspective allows managers to develop business models via structures or routines. The structural view considers the perception of the firm (e.g., knowledge flows, organisational performance, and learning) within the business network and how the firm is positioned within it while routines focus on the

dynamic capabilities and development of operational processes of the firm to exploit potential value. Thus, the influence of business networks and/or relationships and the extent of their involvement in SME internationalisation are expected to be of relevance in the emergence of business models (Bankvall et al., 2016; Child and Hsieh, 2014). There is a need for more scrutiny to identify the role of network configurations to understand how firms interact with their partners to co-create value and/or cope with changes occurring in their business models (Bankvall et al., 2016). Teece (2018) outlined that unique and dynamic capabilities are of primary importance to a firm's competitive and strategic positioning as well as the market selection and business model configuration the firm may adopt. Alongside strategy, dynamic capabilities lead to the formation of a defensible business model that transforms an organisation and strengthens unique resources and capabilities for viable performance outcomes (Teece, 2018).

Studies on SME internationalisation have demonstrated that small firms can internationalise successfully and rapidly through the innovation of products and services and by capitalising on network relationships (Child et al., 2017; Coviello, 2006; Knight and Cavusgil, 2004). While many studies agree that SMEs with robust internal capabilities and strong network ties are favourable for leveraging opportunities, innovation, and growth due to the resources and experience invested in the relationships (Håkansson and Ford, 2002; Ojala, 2009), networks may also have downsides in some cases. Certain studies illuminate that some firms within the same networks may not be at liberty to act within their aims due to the immense resources and experience efforts put in by relationships in previous interactions and investments (Håkansson and Ford, 2002; Ojala, 2009). Additionally, due to the strong influence of partners or alliances, SMEs' internationalisation decisions and/or market choices may be largely dominated by their partners (Coviello and Munro, 1995). SMEs may also experience lock-in due to their allegiance and contracts with their coalitions and networks, which may debilitate strategic growth and future collaboration with other potential investors (Gulati et al., 2000; Ojala, 2009). Overall, to support profitability and growth, companies tend to develop strong ties with stakeholders, which amplifies trust, support and motivates collaboration within the organisation (Bonakdar et al., 2014). As outlined above, to a large degree studies have found networks to have a positive impact on the internationalisation of SMEs.

Furthermore, studies indicate that business model innovation enables SMEs to tap into external knowledge sources and improve on their organisational design as well as to develop their business networks with external stakeholders to expedite the exploitation of opportunities and value capture (Foss et al., 2013; Guo et al., 2017). Therefore, we surmise that by innovating their business models, SMEs can leverage network links to harness market information and map and exploit recognised opportunities in international markets to achieve better performance (Child et al., 2017; Guo et al., 2017; Massa et al., 2017). In developing the hypothesis for this study, we consider network capability as a unique and crucial type of capability in the SME context.

### *2.3 Hypothesis development*

For internationalising SMEs, reinforcing network relationships provides reputational support as well as valuable specific and multiple benefits and market information to ensure the legitimacy necessary for foreign market entry (Johanson and Vahlne, 2009; Oviatt and McDougall, 1994; Child et al., 2017). There are several reasons to postulate that business network and organisational network capability may predict business model

innovation. Firstly, business network relationships are key to a successful and dynamic business model design for internationalising firms (Mason and Leek, 2008; Onetti et al., 2012). Bankvall et al. (2016) argue that networks and the interaction between the focal firm and its network partners could be regarded as the 'engine' that facilitates change in business models.

Secondly, network partners and information flows constitute a component in business models, with Shafer et al. (2005, p.202) noting: "the role a firm chooses to play within its value network is an important element of its business model". Similarly, Onetti et al. (2012) note that value chain and network activities need to be incorporated in the conceptualisations of business models. Moreover, internationalising companies gain several benefits via networking, such as a spectrum of international opportunities (Coviello and Munro, 1995) and increased social capital, which enables the acquisition of external knowledge (Yli-Renko et al., 2001), as well as access to resources vital to foreign market entry. In SMEs, networking, therefore, has a dual role by facilitating both business model development as well as the internationalisation process overall.

Thirdly, Mason and Spring (2011) link network architecture to business model design, while the study by Mason and Leek (2008) posits business models as both network-embedded and network-emergent phenomena. Bankvall et al. (2016) argue that the ability of the firm to span the boundaries and link with the surrounding networks is a fundamental driver of business model change. Such expertise can constitute the networking capability of a firm (Chen et al., 2009; Walter et al., 2006).

Studies attest that the internationalisation of firms is primarily driven by the business networks in which they are embedded. Seminal models of internationalisation, such as the network approach (Johanson and Mattsson, 1988) and the revised Uppsala-model (Johanson and Vahlne, 2009), find network relationships to be at the core of intensifying international commitment. For internationalising SMEs, business networks offer access to resources they typically do not own or cannot leverage autonomously (e.g., Peiris et al., 2012). Network capabilities have previously been found to impact the internationalisation of SMEs (Torkkeli, 2014).

In sum, based on these notions, we hypothesise that the pressure for business model change in SMEs comes through their network partners and that their ability to exert business model change, therefore, depends on the extent of their networking capability. Moreover, since changing business models requires companies to develop the appropriate capabilities (Forkmann et al., 2016; Gerasymenko et al., 2015; Müller and Vorbach, 2016), and since networks and network-related capabilities have been found to be linked with both business model development and SME internationalisation, we posit the following:

H1 The higher the network capability of an international SME, the higher its business model innovation.

Business models evolve due to organisational capability to learn new and better ways of doing things (Mason and Leek, 2008). The firms that innovate their business models achieve superior performance and competitive advantage, both of which are a result of a firm's unique competencies, capabilities, and supporting relationships. Thus, the potential for a firm to excel lies in the way it strives to maintain existing stakeholder relationships and its capability to attract new customers and network relationships (Markides and Sosa, 2013; Teece, 2018). All of these are a function of entrepreneurial actions which, in turn,

have profound influence and may trigger business model changes, which can then affect the international performance of firms (Asemokha et al., 2019; Cavalcante et al., 2011). Therefore, management competencies and capabilities are necessary to effectively innovate firms' business models to ensure competitive performance and customer value delivery as well as successful international operations (Chesbrough, 2010; Child et al., 2017; Teece, 2018).

Internationalising SMEs may improve their performance by adopting agile strategies and flexible business models to satisfy their operational activities (Asemokha et al., 2019). Studies suggest that business model innovation is essential for competitive performance, especially for international operations and performance (Chesbrough, 2010; Child et al., 2017). Thus, business model innovation can augment the profitability and growth of small enterprises (Aspara et al., 2010). Therefore, we posit that the business model innovation of internationalising SMEs should be positively associated with more successful internationalisation.

H2 The higher the business model innovation of an international SME, the higher its international performance.

The business model a firm adopts is closely linked to the strategic choices of the firm (Casadesus-Masanell and Ricart, 2011; Teece, 2018). SME growth and positive performance are enhanced by agile managerial decision making and effective adaptation of business models to dynamic market requirements (Achtenhagen et al., 2013; Cavalcante et al., 2011; Doz and Kosonen, 2010). A recent study (Asemokha et al., 2019) found that business model innovation can lead to increased international performance as a mediator between entrepreneurial orientation and international performance.

We therefore posit that business model innovation is expected to mediate the positive relationship between network capability and SME international performance. Teece's (2010, 2018) work highlights that capabilities underlie the competitiveness of firms precisely because they enable business model design. He further suggests that in order to implement a successful business model that is scalable across national borders, it is critical for a firm to possess the capabilities to coordinate, modify and combine elements of the business model towards a unique calibration of (international) opportunities, differentiation, and competitive advantage (Teece et al., 1997; Teece, 2010). Thus, in this study, network capabilities can be predicted as dynamic, and an antecedent to business model change while indirectly and implicitly suggesting a mediation relationship between, business model innovation, and successful internationalisation.

There are other additional works to support this notion. For instance, Baden-Fuller and Haefliger (2013) have found that stakeholder and customer engagements in business models may mediate a relationship between technology and performance in general. Müller and Vorbach (2016) noted the need for firms to develop appropriate capabilities in order to exert business model change successfully. Forkmann et al. (2016) and Gerasymenko et al. (2015) also posit that changes in business models and the development of dynamic capabilities are interlinked.

Well-functioning collaboration within networks is particularly dependent on the willingness and ability of firms to change their business models when necessary (Abrahamsson, 2016; Balboni and Bortoluzzi, 2016; Doz and Kosonen, 2010). Bankvall et al. (2016) also implied that network-related capabilities specifically could underlie changes in business models. Based on this discussion, we hypothesise the following:

H3 Business model innovation mediates the relationship between network capability and international performance.

### **3 Research method**

#### *3.1 Data collection*

The empirical sample with which the hypotheses were tested was obtained between November 2017 and February 2018 from internationally operating SMEs in Finland. As a small, open economy, Finland has been found a fitting context in which to examine both business model innovation (Asemokha et al., 2019) and network-driven internationalisation (e.g., Holmlund and Kock, 1998; Kontinen and Ojala, 2011; Torkkeli et al., 2015a). We conducted the data collection procedure in two phases. The first phase included a sample of 1,000 firms listed in the Bisnode Selector database, which comprises a list of all exporting companies based in Finland. We chose this list since it provides a variety of firms across all industry sectors. This list was supplemented by the Amadeus online database, including SMEs from the engineering and software industry sectors specifically. We adhered to the European Commission definition of SMEs; we restricted the sample used in the analysis to consist of SMEs:

- 1 employing less than 250 people
- 2 with turnover less than €50 million or a balance sheet total less than €43 million (European Commission, 2003).

The latter search yielded a sample of 1,029 SMEs in total. Overall, we surveyed the firms on their internationalisation for both exports and other types of foreign operation modes.

The items in the questionnaire were translated from English to Finnish followed by a back-translation by a professional language editor to ensure linguistic accuracy. We contacted the SMEs initially via phone to ascertain their fit for the study. During this initial call, the most knowledgeable person in the company management was sought to provide the responses for each firm. For the companies that were found eligible and willing to participate, we then sent the link to the online questionnaire. If the response was still unfulfilled, we sent two additional reminders in two-week intervals for those firms that had agreed to participate but had not initially responded. We reached a total of 1,821 firms, 1,387 of them were found valid by the criteria of the research, and 1,032 agreed to participate in the survey. As the data collection process concluded, 365 SMEs in total had provided their responses, resulting in a response rate of 26%. From that sample, we included in this study those SMEs that had responded in full to the measures on networking capability, business model innovation, and international performance. Thus, the testing of hypotheses in this study was conducted on the final sample of 210 internationally operating SMEs. These firms started their international activities on average at 11 years of age, were in general (99% of turnover) operating in B2B markets, and employed on average 62 people. Thus, by their characteristics, the sample firms were quite representative of internationally operating SMEs originating from Finland (cf. Kuivalainen et al., 2015).

### 3.2 Measures

We adapted the measure for business model innovation from the scale validation study of Clauss (2017). The principal component factor analysis suggested a single factor explaining 64.5% of the total variation between the items. The communalities between the scale items varied between 0.51 and 0.77, and the factor loadings were all between 0.71 and 0.88. We further checked the Kaiser-Meyer-Olkin (KMO) test (0.87) and Bartlett's test of sphericity (significant at the 0.01 level) to ensure that the resulting factor was an adequate measure of business model innovation overall. The questionnaire items were as follows:

- we consistently adopt new ways to make transaction activities easier with stakeholders
- we frequently monitor our innovative operational processes, routines, and norms and adapt them to our business model
- we often evaluate our existing processes and significantly change them if needed
- we constantly re-evaluate our internal human resource requirements and provide the necessary training for employees
- we always reinvent our business model by enhancing our interaction with our customers and partners in novel ways
- our employees' opinions contribute to major changes in our company's core activities.

To measure network capability, we applied the measure by Chen et al. (2009). During factor analysis, two items were dropped due to poor communalities, with the result being a five-item single factor explaining 64% of the total variance. The KMO value was 0.82, and Bartlett's test of sphericity was statistically highly significant ( $p < 0.01$ ). The communalities of the individual items were between 0.59 and 0.68, with the individual factor loadings varying between 0.77 and 0.82. The Cronbach's alpha value for the measure was 0.86, further indicating a reliable measure of network capability.

We measure international performance by a set of items capturing success in expansion to new markets, sales growth abroad, and profitability in foreign operations. Factor analysis again converged to a single-factor measure explaining 66% of the total variation. Communalities for the international performance measure items ranged between 0.52 and 0.82, while the KMO value was 0.89 and Bartlett's test again significant ( $p < 0.01$ ). Thus, this measure was also considered sufficiently reliable and valid for hypotheses testing. The items included in the performance measure were as follows:

- expansion to new markets
- achievement of goals set for internationalisation
- overall foreign sales growth
- foreign sales growth in major markets
- profitability of foreign operations

- overall performance in foreign markets
- performance compared to main competitors
- overall market share abroad.

In addition, we deemed it necessary to control for both the size and the age of the firm. From the network capability point of view, we considered that older and larger firms had had more time with which to develop competencies such as networking capability (cf. Sapienza et al., 2006). We also kept in mind that smaller SMEs aiming to expand internationally face resource constraints and that they, as a result, often seek to develop network relationships in order to achieve their expansion goals (e.g., Loane and Bell, 2006). Thus, we included firm age in years and firm size as the number of total employees as control variables in the analysis. The descriptive statistics and inter-correlations of the variables used in the analysis can be seen below in Table 1.

**Table 1** Means, standard deviations, and inter-correlations of the variables used in the analysis

Variable	Mean (SD)	1	2	3	4	5
1 Business model innovation	4.83 (1.01)	1				
2 Network capability	5.28 (1.00)	0.55**	1			
3 International performance	39.95 (11.03)	0.30**	0.20**	1		
4 Firm age	30.88 (20.22)	-0.10	0.05	0.05	1	
5 Firm size	57.05 (68.34)	0.13	0.11	1.07	0.31**	1

Note: Significance – \*\* $p < 0.01$ .

Non-response bias was evaluated by comparing early and late respondents, following the recommendation of Armstrong and Overton (1977), and no significant differences between the two groups were found. Common method bias was assessed in several ways. First, we followed the recommendations by Podsakoff et al. (2003) when designing the questionnaire. Second, in the questionnaire itself, predictor and criterion variables were separated, and the anonymity of the respondents was assured. Third, we used Harman's one-factor test to check for common method bias in the data. No signs of a common factor underlying the data were found. We adapted the network competence scale by Ritter et al. (2002) to measure network competence, and a Likert-item scale was used to measure the extent of change in the business models of the companies.

## 4 Results

We applied a linear hierarchical regression analysis to test the hypotheses. Possible multicollinearity between the variables and the normal distribution of the variables was checked before running the model. The normal probability plot of the standardised residuals and scatterplot did not signal deviations from normality. Variance inflation factors (VIF) were all below the cut-off value of 10 (Hair et al., 1998), with the highest being 1.13. It was, therefore, noted that multicollinearity did not constitute a problem.

The results of the linear regression analysis testing for H1 are shown in Table 2. We inserted the variables into the regression analysis in two different phases. The control variables were inserted in the first phase and the independent variables in the second

phase in order to see the change in the explanatory power of the variables after adding the main independent variables.

**Table 2** The results of the regression analysis testing for H1

<i>Dependent variable: Business model innovation</i>	<i>Model 1</i>	<i>Model 2</i>
Firm age	0.001 (0.004)	0.01 (0.003)
Firm size	0.002 (0.001)	0.00 (0.001)
Network capability		<b>0.55 (0.06)**</b>
Adjusted R <sup>2</sup>	0.00	0.31
Change in R <sup>2</sup>		0.31
F	1.12	<b>27.92**</b>

Notes: \*Significant at .05 level.

\*\*Significant at .01 level.

The control model (model 1, Table 2) was statistically non-significant ( $F = 1.12$ ,  $p > 0.05$ ) as were the coefficients for firm age ( $B = 0.001$ ,  $p > 0.05$ ) and size ( $B = 0.002$ ,  $p > 0.05$ ). Therefore, firm age and size were not considered to constitute a factor in the relationship between network capability and business model innovation. Then, in the second model (model 2, Table 2), we further included the main independent variable. This model was statistically significant ( $F = 27.92$ ,  $p < 0.01$ ), as was the coefficient for network capability ( $B = 0.55$ ,  $p < 0.01$ ). Thus, H1 received support from the analysis as higher levels of network capability were found to predict more business model innovation. Among the international SMEs, the total amount of business model innovation change explained by network capability was 31%.

Next, we tested for H2 using a similar procedure. The results, shown in Table 3, indicate support for H2. The model with only the control variables included (model 1, Table 3) was again statistically non-significant ( $F = 0.99$ ,  $p > 0.05$ ), and again the firm age ( $B = 0.01$ ,  $p > 0.05$ ) and firm size ( $B = 0.02$ ,  $p > 0.05$ ) coefficients were non-significant. When the business model innovation variable was added (model 2, Table 3), the overall model turned highly significant ( $F = 6.01$ ,  $p < 0.01$ ), and the business model innovation coefficient was positive and significant ( $B = 3.30$ ,  $p < 0.01$ ). Thus, business model innovation was found to predict increased international performance, thus supporting H2.

**Table 3** The results of the regression analysis testing for H2

<i>Dependent variable: International performance</i>	<i>Model 1</i>	<i>Model 2</i>
	<i>B (std.err.)</i>	<i>B (std.err.)</i>
Firm age	0.01 (0.05)	0.04 (0.04)
Firm size	0.02 (0.01)	0.01 (0.01)
Business model innovation		<b>3.30 (0.83)**</b>
Adjusted R <sup>2</sup>	0.00	0.08
Change in R <sup>2</sup>		0.08
F	0.99	<b>6.01**</b>

Notes: \*Significant at .05 level.

\*\*Significant at .01 level.

Finally, we tested for H3 by conducting a mediation analysis. The regression models conducted in order to ascertain the non-standardised coefficients needed for the Sobel's test (Sobel, 1982) indicated that a partly or fully mediated relationship from network capability to international performance would be possible: The relationship between network capability and business model innovation was positive and highly significant ( $B = 0.55$ ,  $F = 87.47$ ,  $p < 0.01$ ,  $\text{adj. } R^2 = 0.31$ ). Similarly, the regression model linking together business model innovation and international performance was positive and significant ( $B = 2.73$ ,  $F = 12.19$ ,  $p < 0.01$ ,  $\text{adj. } R^2 = 0.06$ ). In addition, the link between network capability and international performance was also positive and significant, albeit weaker ( $B = 1.85$ ,  $F = 5.31$ ,  $p < 0.05$ ,  $\text{adj. } R^2 = 0.02$ ). Therefore, as the pre-requirements were satisfied, we calculated the Sobel's test (Sobel, 1982) values and probabilities for the mediation relationship. The Sobel's test statistic for the mediated relationship with business model innovation as the mediator was 3.27 (two-tailed probability 0.001). Thus, H3 received support from the analysis, and we found business model innovation to mediate the positive relationship from network capability to the international performance of SMEs.

## **5 Discussion**

Overall, the results indicated that the networking capabilities of a firm could influence change and foster business model innovation in internationalising SMEs. Our findings show that SMEs follow their key partners to foreign markets and exert change in their business models to suit international operations in parallel or, alternatively, that such change is a prerequisite for partnering in the first place. In line with Bankvall et al. (2016), it may also mean that internationalising SMEs tend to favour relationship-level business model types. In general, however, the results implicitly suggest that as SMEs internationalise by leveraging their network relationships, in the process, they also are able – and perhaps are required to – innovate their business models. The results further confirm that business model innovation leads to increased international performance in the SME context (cf. Asemokha et al., 2019) and that business model innovation mediates the relationship between network capability and international performance.

Through this study, we agree that the business model concept is a function of a firm's competitive strategy and should effectively combine various concepts, such as competitive competences, innovation and network links in value creation, and capture activities (Child et al., 2017; Onetti et al., 2012). Thus, the firm's ability to effectively harness relevant resources and transactional links is an important firm capability which drives business model effectiveness (Child et al., 2017)

This study is important as business models are presumed to highlight content, structure, and transaction governance in relation to the network in which the firm functions (Abrahamsson, 2016; Oviatt and McDougall, 1994; Zott and Amit, 2009). To understand the dynamics between networks and strategy, researchers have called for intensified exploration to better understand the concept of business models and how they can be adopted in strategy-related research and practice (Abrahamsson, 2016; Zott and Amit, 2009). Additionally, as postulated by Zott and Amit (2009), the business model perspective is an embodiment of strategic intentions, value creation, and opportunity exploitation. Thus, the business model brings to scrutiny the extent to which a firm is

able to provide the optimum value within its existing network. This is embellished by the description of business models as ‘the engine for network-based strategies’ (Zott and Amit, 2009).

### *5.1 Theoretical contribution and implications*

The interplay of business models alongside important stakeholders or actors in the business environment has been under-researched (Abrahamsson, 2016; Nummela et al., 2014). The results of this study contribute to the literature on internationalising and exporting SMEs and business models by illustrating how networks can exert pressures for strategic adaptation in internationalising SMEs in the form of revising their business models. In doing so, this study accounts for business model change in light of its antecedents by positing that dynamic capabilities may underlie business model innovation in entrepreneurial internationalisation. Until now, there have been only a few empirical studies that would have examined the role of business models in internationalising SMEs: Sainio et al. (2011) shed light on value creation in internationalising entrepreneurial firms while accounting for their business models; another study by Sainio et al. (2015) accounted for the impact of international experience (for example, software companies) on their business model change and, more recently, business models of internationalising SMEs (see Asemokha et al., 2019; Child et al., 2017). The present study adds to these studies and contributes further by establishing the link, empirically, between dynamic capabilities and business models in a specific domain, that of international entrepreneurship.

As Teece (2018) notes, in exploring business models, changes made to the business models are dependent on managers’ decisions and their capabilities to organise activities towards achieving the optimum model for the firm to internationalise. For this reason, managers may leverage network ties in internationalisation operations, which inadvertently affect the business model adopted by the firm (Child et al., 2017; Teece, 2018). Network capabilities can be considered as dynamic especially because it facilitates coordination and integration of both external and internal organizational activities in tandem with value network interactions to foster competitive advantage across borders. Our results contribute to business model literature by showing that networks not only determine the extent of internationalisation among SMEs but also may exert pressures for strategic adaptation in the form of revising their business models. Our study further acknowledges that although a group of companies may be operating in the same field of business, they may possess very different business models from each other. In other words, every business model has its unique characteristics and is created to satisfy organisational functions and achieve the vision and goals of the business (Massa et al., 2017). There is a need for more empirical studies to delve into the power business models possess, their SME network activities and the effect of both on firm survival (Shafer et al., 2005).

In this study, we have focused on the role of value network capabilities and the implication of the international performance of SMEs. We surmise that business models provide a powerful way for managers to communicate strategic choices, which in turn influences their value networks and customer relationships – and vice versa (cf. Shafer et al., 2005). We also add to the studies suggesting that network attachment can be

important when designing business models and in strategic decision making (Child and Hsieh, 2014; Onetti et al., 2012; Teece, 2018). Thus, for SMEs to maintain competitive advantage and thrive in complex market environments, managers should make efforts to improve their network relationships. Moreover, managers may face the challenge of efficiently recognising, exploring, and/or exploiting valuable technological and/or market opportunities at the right time since they may lack the necessary commercial approaches, tools, or capabilities, which may not be present or consistent with the existing business model (Cavalcante, 2014). In such situations, managers need to develop their individual capabilities and competencies, leverage the competencies of their partners, and, most importantly, develop dynamic business models to accommodate the change (Mason and Leek, 2008).

This study has also identified that managerial decisions and initiatives are drivers for operational, organisational, and business model innovation. The study shows that managers' capability to innovate their business models (incrementally or radically) is critical and influences the potential to redefine the value proposition and offerings to customers and other stakeholders as well as other revenue options (Velu, 2016). Therefore, we consider that managers should be critical about their choices and the factors that constitute the initiative for changing the business model and other firm operations (Cavalcante, 2014; Cavalcante et al., 2011). The manager's role is considered relevant because he or she is the link between the firm and the stakeholders. Thus, the decisions or choices made by the manager are of importance and tend to influence an organisation's core processes (Cavalcante et al., 2011) as through a partner or other stakeholder relationships, managers may get first-hand information on very important operational or market decisions (Child and Hsieh, 2014). We surmise that networks facilitate knowledge and information generation, information flow, managerial decision making on internationalisation, and other operational processes – all of which are fundamental to the success of the firm and the business models designed as a result.

Overall, this study adds to these earlier studies by responding to the prior call for empirical research on the interplay between business models and networks (e.g. Bankvall et al., 2016), especially network capability. Specifically, little has been explored as to how network capability and business model changes of SMEs are interlinked. Thus, the present study contributes by linking capability research in the exploration of internationalising SMEs from both a network perspective and a business model perspective.

## *5.2 Managerial implications*

SMEs consider their key partners in foreign markets as influential in changing their business models to suit international operations. For managers of SMEs seeking to internationalise successfully, organisation and management decisions should minimise rigidity, embrace business model innovation, and make strategic efforts towards developing unique capabilities to be profitable and grow. Managers should strive to develop dynamic business models that are robust enough to catch up with evolving technological progress and market trends and to accommodate change geared towards creating, delivering, and capturing value.

However, in practice, business model change does not occur in a vacuum; instead, it may be that the network relationships in which an SME is embedded inform the managers of the necessity and optimal ways in which to reassess the business models with the hope of exploiting new opportunities and making profits. Managers are required to have the initiative and competence to select appropriate stakeholders to collaborate with. We therefore conclude that SMEs possessing the so-called open and flexible business models – business models that leverage value networks and customer relationships – can also be expected to have their enterprises internationalise more successfully.

### *5.3 Limitations and further research*

The present study provides some added evidence on the dynamics of business models and networks in the field while simultaneously facilitating further research into this area, which seems to us crucial to investigate in international entrepreneurship. We conclude by highlighting some of the limitations of this study and potential avenues for future research.

First, as the extent of openness of business models can vary, we do not necessarily claim that network capabilities are a necessary factor in each and every single business model change. Business models can be firm- or network-centric (Bankvall et al., 2016; Frankenberger et al., 2013), and in our study, we did not assess the extent of this centrality. Consequently, the results would seem to suggest that those enterprises relying on the so-called ‘open business models’ that are based on business network relationships are also more capable of developing their business models. Again, however, our measure of the business model did not assess the openness of business models explicitly. Investigating industry-specific differences in these dynamics might shed further light on this matter.

Second based on these findings, we encourage that future research could further extrapolate and clarify how the business models of internationalising enterprises (such as lean global start-ups) emerge. Thereby, providing more explanations on how these business models systematically, develop and adapt especially in various contexts (see Rasmussen and Tanev, 2015). In-depth research could be targeted towards identifying the motives and extent of such business model changes and how such venture type firms accommodate transformation as they internationalise their operations and processes in general.

Third, business model innovation and market selection could be examined together. The specific foreign markets in which enterprises operate may exert additional pressures for business model change – an example of such a market is China (see Chan et al., 2016). Moreover, we note that, based on the extant literature, entrepreneurial decision-making logic may impact the ability of entrepreneurs to overcome barriers restricting business model change (Chesbrough, 2010), and thus considering the impact of effectuation in international entrepreneurship (Sarasvathy et al., 2014) on business model change could yield valuable insights.

Fourth, the timing of foreign market entry can also affect business model development in regard to whether a company is a first-mover or an incumbent influences the dynamics of its business model (Kim and Min, 2015; Markides and Sosa, 2013). The position and power of the company in the business network it is embedded in can also

influence its strategy on innovating its business model (Velu, 2016). Future research could distinguish between different types of business models in terms of innovation, for example, the role of service infusion (see Forkmann et al., 2016) or new internet-enabled business model types (Wirtz et al., 2010). The nature of such inquiry would most likely call for qualitative longitudinal empirics.

Through this study we empirically investigated international entrepreneurs' approaches to business model change. In line with Casadesus-Masanell and Ricart (2011), we agree that business models adopted by firms differ from one another, which may yield outcomes that are difficult to predict, especially in competitive environments – further suggesting that the dual effect of choice and consequence are considered drivers of business model change (Casadesus-Masanell and Ricart, 2011). Therefore, by virtue of the choices and consequences that business models may continually undergo, vicious cycles may be formed that create dynamics similar to network effects, which either strengthens the business model or otherwise depending on the relevance (to value creation and capture) of decisions made in the organisation (Casadesus-Masanell and Ricart, 2011). Thus, a further qualitative enquiry may help isolate and provide insights into individual decisions and provide richer explanations on the capabilities of managers and how they influence their business models.

Finally, as we investigated the antecedents of business model change, future research could delve in more depth into the antecedents and outcomes of different types of change in international entrepreneurial settings (cf. Osiyevskyy and Dewald, 2015) as well as the impact of entrepreneurial cognition on business model dynamics in both internationalising SMEs and SMEs in general. This is in line with studies that suggest the need to investigate the relationship between business models and opportunity creation in entrepreneurship and could extend to research on SME internationalisation (George and Bock, 2011; Martins et al., 2015).

## **6 Conclusions**

Our goal in this study has been to add to the growing knowledge on the role of business models and network capability in the internationalisation of SMEs. Specifically, we aimed to shed light on the role of business model innovation in this context. The extant literature has until recently been very limited in describing how firms change their business models (Wirtz et al., 2010), and since success in entrepreneurial internationalisation often comes to depend on accurate business model design (Asemokha et al., 2019; Hennart, 2014; Onetti et al., 2012), there has been a clear need for such a study.

Overall, the results suggest an additional benefit of business networking for internationalising SMEs in the form of successful business model innovation. This study suggests that specific types of dynamic capabilities, such as network capability, may lead to business model innovation in internationally operating enterprises. As we are only beginning to grasp the role of business models in exporting and internationalising SMEs, the results of this study also elicits promising research discourse and potential research avenues to be explored in the future.

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## **Publication III**

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**Business Models in Context: Entrepreneurs (Re)modeling their Business towards an International Venture**

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**BUSINESS MODELS IN CONTEXT: ENTREPRENEURS (RE)-  
MODELING THEIR BUSINESS TOWARDS AN INTERNATIONAL  
VENTURE**

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**Track 1:** Internationalization, International Entrepreneurship and SMEs

# **Business Models In Context: Entrepreneurs (Re)Modelling Their Business Towards An International Venture**

## **Introduction**

Throughout history, firms have struggled to catch up and survive with the ever-changing market and technological trends, customer requirements, and interests. Today, across various industrial disciplines, the fast-paced contemporary world of business, globalisation, and disruptive technological advances create uncertainty in the markets and increasingly render business models (BM) obsolete. Our generation is witnessing the rise of the so-called platform and online business models that disrupt the competitive landscape of many traditional industries like never before.

On top of this, the recent global pandemic (COVID-19) and new political phenomena (e.g., Brexit) contest existing regulations, trade liberalisation, and global transparency, thereby blurring the industrial and international boundaries that have existed in the past decades (McDougall and Oviatt 2000; Osterwalder et al. 2005), thus profoundly changing the competitive game of international businesses in unexpected ways. As a result, to catch up with the times, managers must be increasingly proactive and willing to change their business models (Nielsen et al. 2018). These issues necessitate an impending shift from 'conventional' managerial approaches and typical business model architectures towards more innovative and robust business model designs (McGrath 2010) that are flexible enough to accommodate rapid change.

The research on business models has so far enriched our understanding of the working mechanism of a business (Teece 2010; Zott and Amit 2011). However, in academics and practice research, business models have been progressively adopted as a sole or complementary unit of analysis for researching and understanding a firm and its activities (Zott and Amit 2011; Pohle and Chapman 2011). Previous studies have also mostly focused on business models as an isolated construct (Stampfl and Prügl 2011) without considering the context and role of the decision-maker or how their decisions affect the (re)configuration of business models as a firm goes through the stages towards internationalising.

In the early phase of venture creation, entrepreneurs face the daunting task of designing or reconfiguring their business model. In this phase, entrepreneurs carefully identify the important central components (value creation, delivery and capture mechanisms) and change initiatives that support the reconfiguration of the business model to satisfy the environment (Cavalcante 2014; Cavalcante et al. 2011). Here, an entrepreneur's rationale of how a venture creates delivers and captures value (Osterwalder and Pigneur 2010) and the continual renewal and adaptation of business models are relevant for obtaining a sustained competitive advantage (Achtenhagen et al. 2013). However, despite the importance of entrepreneurs' roles in designing and creating the core processes that shape their ventures, these individuals have not been extensively researched especially in the business model discourse.

Studies highlight that the complexity of an organisation's construction is what makes every firm's business model unique (e.g., Denyer et al. 2008; Westerman et al. 2006). As a result, business models are not necessarily static but have a propensity to change (Cavalcante 2014). Furthermore, to understand the value creation, delivery and capture of businesses, we must acknowledge that ventures do not exist in isolation from their *context*. For example, specific contexts (i.e., industry, level of home country development) may influence business models (Child et al. 2017; Foss and Saebi 2017), further suggesting that contextual knowledge is an essential underlying dimension of business model creation and change. Interestingly enough, entrepreneurship and new venture creation are often 'de-contextualised' in both scholarly and practitioner accounts, both of which feature the need for more studies that potentially constitute and/or transcends context (Hjorth et al. 2008; Brännback and Carsrud 2016). Nevertheless, entrepreneurs and the context in which they operate are heterogeneous in nature; consequently, the firms these individuals create are always context-bound. Without analysing entrepreneurs' *qualitative*

*heterogeneity* and the context in which they initiate and lead their firms, we are left with an incomplete picture of the very backdrop of entrepreneurship (Ucbasaran et al. 2001) and business model creation and/or change.

Like the launch and development of a viable business, successful internationalisation requires a firm to effectively change or reconfigure its business model to fit international market requirements and contexts (Onetti et al. 2012; Child et al. 2017). By extension, entrepreneurs are consistently at the crossroads (Kets de Vries 1977) in their decision making and when it comes to devising the appropriate pathways and operations to ensure that the firm succeeds in its internationalisation pursuit. In alignment with the above notions, scholars have highlighted that entrepreneurs' mental frameworks influence how they interpret their context of doing business, make decisions and approach new opportunities in risky and uncertain environments (Shane and Venkataraman 2000; Maine et al. 2015). International entrepreneurship (IE) scholars suggest that the thinking process, structure, and behaviour of the entrepreneur are shaped by their prior experiences, which have implications for the pre-start-up and start-up mindset (Milanov and Maissenhalter 2015; Korhonen et al. 2019). Thus, there is a need to explore the international(ising) entrepreneur's all-encompassing role, their prior contextual experiences, and their cognitive schemas (Milanov and Maissenhalter 2015; Korhonen et al. 2019; Rissanen et al. 2019; Massa et al. 2017) while looking at the configuration and reconfiguration of their business models.

The current study explores how entrepreneurs make sense of their business model and change it as they internationalise or seek to do so; this is done by approaching the entrepreneurs as focal actors who are making sense of the international opportunities of their firms. The contribution of our qualitative inquiry lies at the intersection of the business model and IE literature, focusing on the entrepreneur(s) as they navigate both the individual- and firm-level context to gain a deeper understanding of the dynamics and changes that occur in their business models. With our study, we address the calls for more contextual exploration of SME internationalisation activities (Michailova 2011; Childs et al. 2017; Foss and Saebi 2017) and entrepreneurship (Baker and Welter 2018; Zahra et al. 2014) by qualitatively investigating how entrepreneurs make sense of the relationships, events, and situations they are part of (Rasmussen et al., 2001) and how their context plays a role in the creation and exploitation of international opportunities (Mainela et al. 2014; Mainela and Puhakka 2009). In addition, we add insight into the meaning of contextualising the actions and interactions of the entrepreneurs as they (re)model their business towards an international venture. By offering four typologies of how individuals' experiences and contextual business model creation and iteration ground their approaches as they internationalise their ventures, we give both researchers and practitioners ways to understand the entrepreneur-level reasoning. Hence, the study transcends individual occurrences and also provides a gestalt-interpretation of the activities of different international entrepreneurs and how their actions concurrently influence the business model as well as determines their internationalisation processes (e.g., Acedo and Jones 2007; Autio et al. 2000; Di Gregorio et al. 2008)

## Literature Review

### **Business models and business model change in the internationalisation of SMEs**

Derived from the diverse theoretical and contextual lenses within management studies and practice, the untethered conceptualisation of a business model has led to increasing research on the concept (George and Bock 2011; Massa et al. 2017, Foss and Saebi 2017). Scholars in management and practice highlight that the concept of business models is valuable for exploring and providing evidence, that articulates how entrepreneurs create value (for customers) as well as for exploring the systems through which firms deliver and capture value (Teece 2010; Pohle and Chapman 2010; Zott et al. 2011, Clauss 2017).

Business models typically begin with an 'idea', which develops and transforms over time into an envisioned architecture. The business model embodies the firm's core processes embedded in the value dimensions: value proposition, value capture, and value delivery mechanisms (Clauss 2017). The value creation reflects organizational decisions that define resource allocation, identify and capitalize on new

business opportunities, and introduce new products and services in the market. Value proposition deals with how the firm provides value to its customers; Value capture focuses on how the business makes profits [Amit and Zott 2001; Teece 2010; Clauss 2017].

Thus, business models serve the interlinked purpose of providing stability for standardising a firm's core processes while also being flexible enough to accommodate change (Cavalcante 2014). Because of the unique nature of a firm's business model, multiple companies may operate in the same business field yet possess business models that are very different from each other. In essence, every business model has a unique identity that aims to satisfy organisational functions and achieve the business' vision and goals (Denyer et al. 2008; Westerman et al. 2006; Massa et al. 2017). Therefore, the ideas and principles that drive the development of a firm's standard processes (the activities related to achieving a specific result) are embedded in the mindset and action of the entrepreneurs (Andersson 2015), who must organise the activities of the firm (George and Bock 2011; Cavalcante et al. 2011), emphasising the role of the cognition schemas of the individual pushing the firm to action (Andersson 2015; Cavalcante et al. 2011; Massa et al. 2017). Most studies show that changes to the business model can mostly be attributed to business model innovation or the innovation of products and services, while a change can also be because of market position, regulatory policies, changes in the firm's processes, and internationalisation activities (Björkdahl and Holmén 2013; Child et al. 2017).

IE scholars agree on the significance of business models as a fundamental contributor to competitive advantage, strategic agility and the firm's performance both home and abroad and across various industrial spheres (Onetti et al. 2012; Child et al. 2017; Asemokha et al. 2019; Rissanen et al. 2019). International entrepreneurial firms are known to make pivotal changes in their business models, proactively seeking new opportunities while taking significant risks for a more competitive future (Asemokha et al. 2019). As such, business models serve the interlinked objectives of providing stability for the development of firm routines and activities while also providing flexibility to allow change (Cavalcante et al. 2011, Asemokha et al. 2019) as they venture into new international markets. However, a manager's ideas and/or cognition may influence their mental framings of organisational processes. Hence, how managers think is critical in the creation and development of a business model (Massa et al., 2017), which means that the sense-making of the entrepreneur and resulting implication, that is, decision making, within the bounded context of the business model provides more nuanced and holistic insights into the activities that shape the internationalisation of ventures (Arend 2013; Baden-Fuller and Morgan 2010; Doganaova and Eyquem-Renault 2009). For example, entrepreneurs as managers must weigh the pros and cons in relation to the perceived foreign market context and determine the implications this has for business model development or change.

As entrepreneurs enter or seek to enter foreign markets, the situation revolving around the competitive market situations, shifting customer needs and environmental uncertainties (Teece 2010, Foss and Saebi 2017) affect how entrepreneurs do business. As a result, decision-makers, or entrepreneurs can leverage or adapt their business models to initiate change (Asemokha et al. 2019) and satisfy the international market context by curating their value capture and delivery options (i.e., the channels to use, competitors' activities and institutional conditions) to suit foreign market contexts (Child et al. 2017). Business models also serve as an abatement tool for enacting international opportunities, as well as for articulating the value chain, the costs/margins structure and vantage positions that can best support a firm's competitive strategy (Onetti et al. 2012; Teece 2010; Björkdahl and Holmén 2013, Mainela et al. 2014). Therefore, to be profitable, the focal firm must continually strive to modify its operational processes in response to customers' needs and market opportunities while coping with market uncertainty and managing the competitive environment (Cavalcante et al. 2011; Torkkeli et al. 2012; Sarasvathy 2001). Moreover, because business models reflect the practice of how a venture transitions in its (international) entrepreneurship journey (George and Bock 2011), – business models should be able to support organisational and strategic functions, especially when it comes to surviving in new and uncertain international environments (Arend 2013).

### **International entrepreneurs and business models in context**

Scholars have categorised entrepreneurs in numerous ways. Ucbasaran et al. (2001) classify entrepreneurs as either novice or habitual entrepreneurs or even based on human capital factors (such as prior entrepreneurial experience, business ownership and capabilities) which influences venture performance, (Ucbasaran et al. 2001, 2008). Habitual entrepreneurs (i.e., serial entrepreneurs), as their name implies, possess previous portfolio business ownership experience and tend to have more expansive knowledge and skill bases, hence fostering a diverse human capital profile (Ucbasaran et al. 2008). Novice entrepreneurs are characterised as first-time entrepreneurs with no or limited business experience or ownership. Although a novice may leverage the accumulated experiences from their current venture, they may not have enough experience—especially relating to the issues and processes associated with identifying and exploiting entrepreneurial opportunities (Ucbasaran et al. 2001, 2008). Despite this categorisation of entrepreneurs, studies add that such human capital factors (e.g., prior experiences) enhance entrepreneurial rationality thereby influencing sensitivity to relevant contingencies and/or reinforcing mental framing that determines entrepreneurial characteristics (Schweizer 2012; Child and Hsieh 2014) and identification and pursuit of international opportunity (Ucbasaran et al. 2008).

Moreover, the embryonic phases of new venture creation or product or service commercialisation and internationalisation are considered daunting tasks due to uncertainty and diverse resource and capability (e.g. financial, technical, managerial) constraints (Trimi et al. 2012). These constraints undoubtedly affect entrepreneurial activities, and in many cases, to address uncertainty and market imperfections, entrepreneurs rely on their limited experiences as they seek international opportunities. This leads to potential changes in the business model of their firm (Drucker 1988). Trimi et al. (2012) argue that in dynamic settings, critical features (for product, operations, and structure), such as innovation speed, product development, customers' behaviours, competition, regulations, stakeholder activities, and other environmental factors, considerably impact an organisation (cf. Goktan and Miles 2011; Mulders and van den Broek 2012), all of which are embedded in the business model.

Nevertheless, studies show that an objectively similar environment and/or temporal circumstances can mean very different things to different individuals (Johns 2017). For example, the differences in how founders enact the same objective environments—such as the contemporary historical time context, economic trends, or peculiarities—lead to differences in the meaning that the context holds for them and, in turn, how this changes their behaviour. In this vein, intrinsic differences in the entrepreneurs' definitions of a situation drive their firms' strategic response, that is, business model change, to the challenges they face. According to Child et al. (2017), home market context, industry context, and entrepreneurial experience are the three predictors explaining an SME's international business model. However, so far, the context and inception of the business idea (i.e., ideation stage) have been largely neglected in business model research. Scholars highlight that the contextualisation of business model changes in relation to a firm's internationalisation cannot be dismissed because of its underlying importance, especially in small venture development (Childs et al. 2017).

In the current study, contextualisation is defined as placing the entrepreneurs and their new ventures into their '*natural settings to understand their origins, forms, functioning, and diverse outcomes*' (Zahra et al. 2014, 481); hence, this is where a context encompasses the '*dynamic array of factors, features, processes or events which influence the phenomenon that is examined*' (Michailova 2011, 130). In relation to business model literature, there is no universalised normative model for creating new organisations (Brännback and Carsrud 2016) or a sound business plan that will endure the decontextualisation of it (Baker and Welter 2018, 380):

*Even Steve Blank, the inventor of the 'lean start-up model', acknowledges the context-specificity of his model, which stems from his experiences as a serial technology entrepreneur and investor in Silicon Valley.*

Earlier studies have rationalised that the entrepreneur's executive choices regarding the components and links in a business model generate 'fit' or an 'optimal design' for value creation or capture within a given context (Martins et al. 2015; Childs et al. 2017). Hence, the entrepreneur and their role as a critical decision-maker determine what 'contextual factors' are pertinent to the chosen business model (Nielsen and Nielsen 2011).

### **Entrepreneurs (re)modelling their business towards an international venture**

A common assumption in internationalisation studies is that the national and cultural differences of new markets pose various contexts of uncertainty and surprises on the individuals and firms, that is, the various embedded situations for problem-solving, as their operations begin to cross borders and internationalise (Johanson and Vahlne 1977). Following the views of entrepreneurship, such as effectuation (Sarasvathy 2001; Read et al. 2016), International entrepreneurship (IE) scholars have become more interested in the individual entrepreneurs who convert uncertainties into opportunities based on the means available and who do so without trying to predict the future (Mainela et al. 2014).

Much like in the general entrepreneurship literature (Gartner 1989), IE research also points out that entrepreneurs are the key driver of new venture creation (Coviello 2015) and that their perceptions of the circumstances for their venturing efforts (Ozgen and Baron 2007; Zahra et al. 2005) manifest in their firms' process of engaging with international opportunities (e.g., Fletcher 2004; Hohenthal et al. 2003; Mainela and Puhakka 2009). Moreover, a variety of theoretical approaches have been adopted to understand how international entrepreneurs and their behavioural orientations, mindsets and the ways they identify and exploit business opportunities both at home and abroad affect the journey of their business (Mainela et al. 2014; Zucchella et al. 2018).

In practice, IE phenomenon originates from the entrepreneurs' everyday context, actions and interactions (i.e., routines and more improvised forms of action) towards the internationalisation of their firms (Mainela et al. 2014). Thus to complement the firm-level focus in IE research, that is, the venture type and antecedents to internationalisation (Jones et al. 2011; Oviatt and McDougall 2005), one hypothesis has been that exploring the of internationalisation of new ventures should also reflect on the role of individual-level sense-making, actions, and practices in concretising international opportunities (Rasmussen et al. 2001; Acedo and Jones 2007). Thus, due to the above-mentioned complementarity, we surmise that the way entrepreneurs interpret their own contemporary, and contextual events or circumstances can influence the organisational routines and related internationalisation intentions or activities— all of which are functions of their business models (George and Bock 2010; Linder and Cantrell 2011; Cavalcante et al. 2011).

### **Methodology**

In the current qualitative study, we explore how entrepreneurs make sense of their business model and change it as they internationalise or seek to do so. Thus, we examine the entrepreneur and the context of the business model's early and iteration phases regarding the company's internationalisation journey. Furthermore, we focus on the context of these phases as a valuable point of reflection for how different contextual dimensions (social, temporal, spatial, industry, and organisational) of their entrepreneurial journeys (Zahra et al. 2014) drives the sensemaking behind the business model of the internationalising firm. Accordingly, we set out to investigate four companies at the verge or in the early phases of their internationalisation journeys; to do so, we use a critical realist case study approach (Ragin 2009), which aims to contextualise explanations by using a more subjective search of the causes in the focal phenomenon (Piekkari et al. 2009; Welch et al. 2011). Drawing from a sensemaking perspective in IE (e.g., Rasmussen et al., 2001), we investigate the entrepreneurs' descriptions of their experiences and the current situations with the company, along with the entrepreneurs' projections of the company's visions and future directions in relation to reaching international markets. In conjunction with this, we are interested in the contextual

conditions from which the initial business model (ideas) had emerged and were configured (Ragin 2009), along with the business model changes that had taken place or would possibly take place in the future based on the entrepreneurs' views of the current situation.

### Data and case descriptions

The cases were selected based on preset criteria, which included being recently established small companies in their early internationalisation stage. Data were generated through semi-structured thematic interviews from the company founders and co-founders (Welch and Piekkari 2006). The firms were in the early phases of establishment and internationalization, the interviews lasted for about an hour each and the recorded interviews were transcribed verbatim for the initial content analysis. The interview transcripts totalled up to 210 minutes and 67 pages of text. For triangulation and more robust analysis, we also used data from other sources, such as webpages and data collected from an IE master's degree course (i.e., founders' narrative script), in which the interviewees were attending as case companies. Table 1 summarises the case descriptions, providing an overview of each company.

Table 1. Overview of case companies

Case Descriptions	
<p><b>Kalamar</b></p> <p>Kalamar was founded by four entrepreneurs in 2015, who combined their past work experience (in corporate management operation) to find a solution for a company's management system using business information to facilitate strategic processes effectively. Each of the founders had vast experience in different management disciplines, such as corporate management and software business. Kalamar provides a cloud-based living strategy platform or product (a connection between strategic work, management system, and management teamwork) used mostly on B2B business. The 'Living Strategy' concept is the main value proposition and service offering of the business. The platform allows their client to collect useful data for customers' needs from different sources and gather them into one place. The platform also helps users (customers) organize and analyses collected data to improve executive reasoning and choices. Thus, supports managers in strategic planning and decision making for the best possible outcomes.</p>	<p><b>Sunsu</b></p> <p>Sunsu two-man company founded in 2015, providing streamlined e-commerce solutions and services for the B2B client by providing them with custom solutions (clients in the home market) on how to sell their products in international markets, primarily to Russia, Japan, and China —thereby bridging international boundaries by creating the possibility for Finnish products to be exported conveniently into international markets. In a way, the company acts as an intermediary to its clients by effectively providing services and relevant information needed to customers to cross their products and services. Their business solutions include e-commerce, sales management, logistics, and consulting. The company provides an all-in-one package that allows their clients to explore international markets successfully by leveraging their solutions, thereby minimizing significant internationalisation investment costs, which is crucial in facilitating international activities between their clients across borders.</p>
<p><b>Modula Solutions</b></p> <p>Modula solutions is a start-up that manufactures furniture. Founded in 2016 by a Finnish couple, whose initial vision was to expand the unique and innovative business abroad. The core products are cushion blocks (Furniture made of BiT elements modular sofas for customization) connected by magnets - a type of frameless furniture. The product is easily maintained, safe, and caters to families or residential owners of small apartments/ spaces. The product is designed to be used both indoors and outdoors, such as small apartments, offices, public spaces, and building multipurpose play areas in parks for children. The company has tried to carry out its production in Poland, but so far, the company has sold products only in its home country. However, moderate the overall sales have been, the ambition to expand further internationally, especially in Asian countries, is high. Having a small product selection and given the competitive market space in the furniture business, the company has limited customer options, which may pose a challenge.</p>	<p><b>Kurros</b></p> <p>Kurros was founded by an entrepreneur in 2014. It is a digital platform offering virtual specialized social services for the elderly. The company collaborates with professional service providers using teleconference technology to provide real-time stimulating services via its web store, where customers purchase services and participate in interactive activities with professionals. Kurros main business activities have been focused within the home country, particularly focus on Finnish customers and service providers. The company also uniquely and strategically internationalizes by mainly targeting Finnish customers in international markets. However, Kurros has intentions to expand its business soon to other countries. So far, the company does not have direct competitors due to its unique and innovative new type of digital services they provide for the elderly.</p>

## Analysis

In this study, the entrepreneurs' accounts function as "sensemaking instruments" (Brown et al., 2015) of their international entrepreneurial experiences and behaviour, which again provided us means for analysing how these entrepreneurs chose to encode information about their past experiences, the surrounding world and themselves in it (e.g., Korhonen et al., 2019). Based on semi-structured interviews with the CEOs and/or founder-entrepreneurs of the companies, our qualitative exploration could focus on the contextualisation of the early phases of creating their business models and the changes they made—that is, phases of rethinking their value creation, value delivery and value capture—in relation to their internationalisation journey. Our analysis process was manifold and resembled an abductive process of moving between the data and literature.

For the initial level of analysis, we organised the data based on the interview guide (structuring the data based on the overall idea of the business, that is, service and product and value propositions). This part included the founders' background and the time prior to founding in relation to the processes the ventures had been going through, here with a keen focus on the early years of business inception and internationalisation activities. An inquiry of any change the entrepreneurs had detected in their firm's journey was embedded in the interview guide.

Building on the more content-oriented initial analysis, we began to map out and connect the different contextual elements in the early 'idea generation' phase (of the venture) and how the early visions of internationalising the company conditioned the remodelling of the companies' value proposition, value delivery and value capture. This second level of analysis involved a preliminary restructuring of the data, including identifying the coding and thematic categorisation of experiences (in NVivo) and business model changes. Such a categorisation allowed us to dig deeper into the initial findings and make sense of business model changes in context. Although we identified numerous business model changes in many business model elements, we sensitised our analysis mainly by tracing the events in which the entrepreneurs were facing opportunities and/or challenges for their internationalising business hence, initiating change to their business accordingly.

Based on the iteration of the data, the latter part of our analysis helped to unravel the primary business model changes happening in relation to the different dimensions of the entrepreneurs' context, sensitising us to see more of the multidimensionality and entwining of contexts in which the business ideas and models had come about; this helped give shape to the entrepreneurs' 'creativity and approaches' to internationalisation. Through our analytical process of contextualising the individual entrepreneur, the different phases of changes in the business models and their internationalisation journeys directed us to make more nuanced understandings of the different temporal, social, spatial, organisational, and market/industry dimensions of the context (Zahra et al. 2014) in the entrepreneur-level reasoning of the past, present and imagined future of internationalising business models. The interview accounts reflect the individuals' relations with their partner and customer base and the value such social contexts bring to (re)thinking the business model in the form of renewed products and/or services suitable for the markets abroad. For example, the "*timing of economic crisis triggering internationalization*" another example "*the entrepreneur was working alongside a financial institution to help create a solution to facilitate international transactions*". These findings informed our contextual interpretation that of the founders, the iterative work that founders/entrepreneurs engage in within these entrepreneurial contexts has implicit or explicit implications on the business model and consequent internationalization efforts.

Finally, coming back to the individual, our analysis continued by contextualising the sensemaking accounts of the founders to depict their alternative interpretations of their international entrepreneurial behaviour (Korhonen et al., 2019) in conjunction with rethinking their business models. By offering four typologies of the entrepreneurs, our iteration of the data and analysis further supports our findings of the business model changes, here regarding how the firms have approached international opportunities in their context.

## Findings

This section begins with our findings of how the contextualisation of the founder(s) and business model change—that is, the phases of rethinking value creation, value delivery, and value capture in relation to early internationalisation—comes through in the entrepreneurs' subjective sense-making of their contextual experiences of the past, the current situation and projections of the company's future directions. Accordingly, we first set out to tap into each case individually. Then, we continue into our findings as a cross-case type of analysis, where the aim is to show how contextualisation matters in how and why business models are thought of and how they could—and maybe should—change during the internationalisation journeys.

### Individuals creating value in context

Our findings indicate how the entrepreneur's past background, experience, and social context drive the company's initial point of departure in value creation and propositions. As an individual-level and entrepreneur-based process, the contextual mechanisms of the initial business idea are found in the person's close relations, expertise, and competence.

#### *Sunsu and the Tactical Entrepreneur*

Sunsu company was cofounded by co-workers. The interviewed founder had owned a series of companies in the past, and his expertise was fundamental to the creation of the company. All the founders were experts in different professional fields, such as international marketing and logistics. The founders' combined expertise provided the bedrock within which the business model and the firm's core services were embedded. Both founders seemingly approached business decisions with *skill and tact*: in a sense, they seemed to have a more diverse idea of what it meant to fail or succeed in business. We detected that these seasoned founders were brave enough to ignore the status quo. Although they would encounter specific institutional barriers and challenges both in the home and international market, they would try to interact with external institutional actors (i.e., the providers of financial instruments) and seek standard solutions. They were proactive in collaborating with external stakeholders and partners to create reforms and align these reforms with their internal strategies to change their core processes, further influencing their value delivery and capture. The founders had extensive network connections that they leveraged when aiming to scale their business model internationally. Combined, the founders pioneered their vision to bring their business venture towards international success:

*[...] we (founders) have several kinds of background, speciality. When we get an f idea, we start to discuss about them. ...reflecting on how it could be done? Then we decide if to take it forward or if they were just ideas! However, some of them (ideas) we start to develop and find solutions (thus) a new possibility for business and so on. [...] After that, we decide if it an opportunity to pursue, or if they were just ideas and may not be feasible going forward.*

#### *Modula Solutions and the Inventor Entrepreneur*

The founder of Modula solutions was the least formally educated. Prior to starting the business, he had no educational background except for a couple of courses in programming in a polytechnic. His prior work experience included social and health care work for eight years, from which he went onto establishing his company. The founder considered himself an inventor with an extensive product portfolio and process ideas from diverse industrial sectors, some of which were executed and some of which were only in his head.

The company's business idea was conceived by realising the need for furniture for social settings and his personal need in his home's aesthetics. By combining his inventions and the ideas of his spouse, they developed the initial product. As a co-founder, his spouse brought in her competence as a seamstress and later managed the company's administrative activities. The research and testing of the product took five years before it was launched to the market. The entrepreneur described himself as a person with multiple

ideas who creates new devices and tools to solve practical problems. In this sense, the entrepreneur displayed the typical ‘inventor mentality’, where the product is created prior to thinking of ways to commercialise, sell, and market it.

The founder was keen on selling his ‘innovation’ abroad, yet the strategies to achieve this appeared to be lacking. The company was also heavily reliant on funding firms and networks to help catapult product development and internationalisation initiatives. He also manifested the *Novice Entrepreneur’s* attributes because the ways to scale and create the business model had not been considered at the time of the interview. Thus, they faced the challenges of finding the appropriate customers, resources, and organisational and management capability to shift from being just a product to an operational and running business:

*[...] I have done these inventions since 2006. [...] I like to observe things a little bit from the side to see without any heavy burden and create solutions easily. I would like to work very closely with research and development in the future. Not as a CEO at all, so I'd be doing product development.*

#### **Kurros and the Control Entrepreneur**

The founder of Kurros had a university education and professional background in international marketing. Her previous work experience stemmed from an international company exporting medical equipment. Having worked in the social health care sector, during which the founder had participated in projects testing virtual services, she combined two kinds of contextual knowledge and interests into her business opportunity. Therefore, we can say this entrepreneur was building her business idea and model based on the previous expertise: by transforming a conventional solution into a unique service solution, she could serve a niche segment. Although the core service (i.e., physiotherapy) we see is not new, the delivery method of the value proposition (i.e. virtual physiotherapy service) is. By providing tremendous comfort and convenience to customers via digitalising her service, she was able to disrupt conventional delivery approaches in physiotherapy. The delivery and channels become innovative when put into the temporal context of the market at the time. However, the founder reveals a sense of rigidity or control in the decision making of how the entrepreneur approaches the internationalisation of the firm:

*I have done that for 20 years, so I know what it is. If I want to do [...] a profitable export business, I would need to have resources. I need to have a person who will be totally devoted. In a way, I have been very quiet about it because I don't want to do a lousy job. I want to start the export when we are ready for it!*

#### **Kalamar and the Experimental Entrepreneur**

The founder of Kalamar had a university education and prior experience in a software firm, consulting business, and sporting industry. He was involved in establishing a currently successful start-up (software business) in Finland from scratch. His previously owned company provided financial consultancy services during the *internet boom and/or early dot-com bubble*. During this time, he helped companies understand how to utilise the opportunities provided by the internet. This entrepreneur stated that he learned how to run small- and medium-sized companies and gained international trade and manufacturing experience while working in a family-owned business in the sports industry. The co-founders’ previous work experience (in finance) and observations at work ignited his idea and developed a next-level strategic management solution for firms, bringing about an opportunity to capitalise on it that led to the company’s establishment. Based on their knowledge of the industry, the founders’ initial idea evolved into a new management method to analyse business operations. This entrepreneur(s) portray an experimental mindset in their business routines and attitude towards international opportunities:

*We need to start with some part of the whole idea, and then first try to go to market with one part before we decide to make the process as a whole, which is our competitive edge!*

## **Contextualising business model change in international entrepreneurship as an iterative process**

The contextual changes because of or within internationalisation trigger how the entrepreneurs and their firms change their business model and/or 'remodel' how they do business: the present situation and future scenarios of the business context (i.e., economic situation market trends, networks) trigger iteration of how value is created, delivered and captured. Accordingly, tracing the context in the entrepreneurs' accounts as a way to explore their business models and frame the changes in them as 'iteration' processes, we can see how and why different contextual dimensions in their internationalisation journeys matter. Tables 2 to 5 show the typologies of these entrepreneurs and the meaning of the context from which the initial idea and business model of the companies unfolded.

### ***Sunsu's process***

The founders leveraged their collective interdisciplinary knowledge and capabilities to provide a comprehensive solution to customers. The founder identified the need for the next phase of business model development: transitioning from the product development phase to actively implementing changes in their processes by developing standard routines. Thus, they were developing the necessary standard routines that could help evolve the business model into maturity and make it function like a real company:

*[...] we focused very much on this product development, and we are running out of resources. We have done enough product development, (now) we have to change. We have to focus more on sales and marketing, b2b-marketing. This is maybe the most dramatic change in what will happen if we really have to start to work like a real company. We're not this kind of hobby, product development thing. We have to get rid of this start-up level and start to do business. And it means changes in these processes of our company very much.*

The company encountered institutional and bureaucratic barriers that delayed some of their stakeholders' payments (transactions) in the initial phases of their internationalisation. Thus, because of the small size of the firm, they had limited resources. Because of the clients' international location, the firms needed to find alternative ways to facilitate international payments. The founders responded to this problem of international payments (i.e., how domestic banks view money transfers from abroad) by seeing an opportunity to rectify challenges they were facing with money inflow from abroad. Thus, they proactively collaborated with the financial institution to find a solution by creating a robust business model that allowed for payment flexibility.

*[...] I was the one who was teaching Finnish banks how to handle international payments, money funding, and transfers, but they did not know about this. I found out a legal and reasonable way to make these money transfers flow from Russian payment methods to Finnish companies. [...] It was a very ridiculous situation. [...] But the point is that this is just one case that these challenges what we have, you just have to learn and make the innovation and push it through because you will find the solution.*

The founder highlighted the importance of understanding the contextual nuances that exist with customers and how cross-cultural contexts support business processes, allowing them to understand customers' needs properly. Thus, they actively reflected on their cultural tendencies to minimise bias about prospective markets by showing market commitment and learning about the potential target market by collaborating with a person who is knowledgeable about the market culture and context:

*[...] How you can create trust with the person. [...] We might have a deal and arrangement that we're doing cooperation, but how well it works. It depends very much about this between the chemistry of those people. This is very much a cross-cultural issue that do you speak in a contextual way or not-contextual way.*

To remain scalable, the company capitalised on the internationalisation initiatives of funding and governmental agencies for their resources because they could get recognition (domestically) and legitimacy by being in an alliance with them. The founder also emphasised that 'more challenging in this financial level

is this financial flow inside the company'. The founder stated that value is created by prioritising sales and reflecting on how it influences the cost, identifying what kind of things should be done, and the resources and capabilities needed—suggesting that sales are needed to get the necessary funds for investments to pick up. Although the firm's immediate focus was on home market clients, the company expressed an interest in expanding its client base into the Nordic countries, part of Europe, and North America. Sunsu also had a vast network and consistently working towards developing more international and local partnerships, for example, with local logistics providers at both ends of their customer scale. Their multisided platform for customers allowed them to develop relationships with partners and clients that tended to transcend simply creating deals. The respondent maintained that collaborating with their partners and customers fostered solutions that lead to customer lock-in.

Table 2. The entrepreneur of *Sunsu* making sense of relevant context and activities that influence the business model

Sunsu: The Tactical Entrepreneur				
Temporal dimensions	Social dimensions	Spatial dimensions	Industry and market dimensions	Organizational, ownership and governance dimensions
Timing of economic crisis in foreign target market. e.g., the crisis and collapse of Russian market economy triggering the birth of e-commerce as a solution. <i>We were doing this Russian marketing and we faced with challenges of understanding our client requirements on how the internet marketing and sales should be done. However, we knew that e-commerce is growing very fast, and we found out that companies are very willing to buy their own web shop. Then we changed that we started to sell this own shop, because it was clear there was a demand.</i>	Revisiting the initial offering and channels by developing new approach to tackle customer and partner concerns. Decision making takes in consideration localization strategic marketing, partnership selection and reflects on cross cultural patterns and customer identities in communication and offerings.	Leveraging regional advantages and networks from previous business ownerships in domestic and international market (Russia and Japan). <i>"if the fashion products are to be sold in Japan, the pictures should be taken by using Japanese models. So, we have a network in Japan where product illustration can be taken. We European people look a little bit different, and the consumers think about how this jacket looks like, when I wear it on. we can provide and consult on these kinds of services, as well</i>	Minimize barrier to entry by working in collaboration with stakeholders and other online marketplace to ensure customer satisfaction and optimization of their business operations Russia, e-commerce; bureaucracy and regulations regarding financial systems, payments Pre-empting latent needs of stakeholders concern and modifying the -competition situation, i.e., how or what kind of quantity of demand is there, the sales strategy search for the partners, and so on.	Due to limited inflow of funding and resources. The company focuses on boosting sales and amplifying their marketing activities in order to thrive Effectuation by leveraging on company's the existing resources and capabilities of founders. <i>"We have a wide range of expertise in the background of our company, these experts together and so we have covered all these themes what is needed there."</i>

Entrepreneur making sense of relevant internationalization activities and contexts that influence business model change

### **Modula Solution's process**

The value proposition of Modula Solutions is the design and multifunctionality of the product, and extensive iterations and modifications have been made to the product since the launch of the company. The company was in a critical phase where it needed to transition from product development and develop its business model to scale. The founder identified that they might benefit by expanding their single product line to other sectors where their product would be needed. However, the founder(s) grappled with inadequate finance, resource, and capability to scale the business, acknowledging the need for people with the right capabilities to push that initiative forward.

The company adopted a strategy that emphasised using direct selling in the home market, aiming to use online sales and crowdfunding campaigns to reach international customers. International market selection and operational processes were still unestablished and how to internationalise to these countries had yet to be determined. The value delivery and capture activities, such as source material, manufacture, and reaching the primary target market, were based on intuition and speculation. The founder's technical knowledge was focused on generating new ideas to improve the functionality of the product rather than

developing the business model and standardising the company's operational routines, which we identify as the 'inventor's mentality'.

Although Modula Solutions was still seeking long-term collaborations with different suppliers and partners for sourcing materials and manufacturing. To accelerate product development and better understand customer needs, the company took in new ideas and feedback (such as product design ideas and internationalisation decisions) that led to changes in their business model, from both customers and stakeholders.:

*[...] It's on-going negotiation and idea storm between all the shareholders inside the company all the time. we need a lot more ideas. [...] We are also in the testing period, and we need lots of feedback from the customers. So, we are choosing to go, and the customers are part of forming a new product process. [...] They have ideas of, e.g., new shapes or systems that can be, maybe incorporated into our system. We would like to present a model where we can quite generously pay these idealistic customers who have new ideas.*

The founder acknowledged that cultural context and matters regarding customer requirements differ in different countries. Stating that as a small company, they need more employees and more knowledge on streamlining and localising their offerings to target customers. The founder reflects that they have not been able to secure financial support from business angles or other institutional investors. However, the entrepreneur confirms that they would benefit from getting support from the Government trade promotion organisation, which would be valuable to catalyse their internationalisation plan by connecting them with the right people.

*[...] localisation is very important in all international markets. [...] for example, in Asian markets, or even if you are going close to the Mediterranean, the sofas' colors (for customer taste) are totally different. [...] Moreover, the distance is too great, and we need localisation if we have to try to match customer expectations.*

**Table 3.** The entrepreneur of *Modula Solutions* making sense of relevant activities that influence the business model

Modula Solution : The Inventor Entrepreneur				
Temporal dimensions	Social dimensions	Spatial dimensions	Industry and market dimensions	Organizational, ownership and governance dimensions
<p>Research and testing took five years before sales: Incremental innovation on value offering before product launch to market .</p> <p><i>"We have modified the idea a lot. We have this is the fifth iteration of the connector. So, we have redrawn it several times, and now it's perfect"</i></p> <p>Unclear internationalization plans: <i>United States is very important for us, because of the scalability of the product, after that comes U.K. and Germany AND Japan Europe, which is hard. We'll see how the delivery company delivers our products in the States. We want a global crowdfunding campaign, but it's not decided yet, how to do it"</i></p>	<p>Engaging in research to understand and identify what customer wants. After which they identify what customers are appropriate to target, and then they test such market opportunities by sending the product to customers (families and kids) there to see how they interact with it</p> <p>providing the value promise to customers for maintenance or replacement if the product is destroyed. Product is presumed to be cheaper and easier to transport, deliver, assemble the product unlike other bulky furniture</p>	<p>Actively seeking long term market actors (as partners and collaborators) to provide supports services, materials and other services. E.g contractors for sewing, textile supplies from Denmark, magnets from US .</p> <p>New channel to reach customers and lower barriers that may affect purchase decisions due to lack of pop-up stores for customers to test and see the product.</p> <p><i>there will be videos on the web of different weight class people sitting on our product and showing how they are function, how do they feel, which is not done in other products. So we hope that lowers the barrier to order it from the internet</i></p>	<p>Preempting and making regulation driven decisions making in partner selections and product innovation to help them compete with big players especially in an industry that is heavily reliant on materials that leads to so much waste such as wood.</p> <p><i>"environmental protection legislations are getting very tight. Which is good. We are close partners with an organization and a university researching (environmentally friendly foam), when they are ready, we aim to implement it immediately into our products. [...] It is not expensive so the customers, who have bought before these, can change them if they want so the switch can be very quick after that"</i></p> <p>Information from competitor's activities and triggered their actions (fast follower) <i>The campaign in Kickstarter was successful to this entrepreneur in Australia, but he couldn't deliver, as nobody couldn't do that product. We saw that they started at the same time as we did, and we just recently discovered this kind of a systems. So, that's why we are using embedded connectors inside polyurethane.</i></p>	<p>Precautionary measures were pertinent to the founder. Patents to secure the value offering, and against competitors and counterfeiting.</p> <p><i>... "The (future) will come as threats. We are dealing with them as happening now situations. So, that's why we are making precautions. The patent schemes, they are the greatest threat" .</i></p>

Entrepreneur making sense of relevant internationalization activities and contexts that influence business model change

### **Kurro's process**

Kurro's initial business idea started from a European Union (EU)-funded project. The project unravelled a market opportunity and a need for complementary products and services to meet the country's physical and health needs regarding its changing (ageing) demographics. After the initial idea had been refined, the company was born. The business model was developed around their core product offering, which was the 'innovative virtual platform that integrates professionals and customers providing digital health care and social services' for the elderly in real-time. The fundamental value proposition of the firm was the user-friendliness of the product, cost-effectiveness and convenience. The platform was the channel through which the company interacts, transacts and sell with customers and stakeholders. Thus, the platform anchored the business process, and the company focused on optimising the platform to ensure customer satisfaction. Business model innovation was achieved by co-creating with stakeholders to ensure customer satisfaction and optimisation of the platform towards standardisation:

*[...] we are listening to the feedback. We're talking with the customers all the time. That's not internal, that's more external, but you get feedback from your customers, and then you innovate from there. [...] but, our people are following the development of different activities (all the time) that bring internal innovation.*

Although the company focused on customers in the home market, the company uniquely approached internationalisation by providing their services and *Natives (i.e. Finnish customers)* living abroad. In other words, they were strategically engaging in internationalisation (drawing from a cultural context) and targeting individuals from similar and/or familiar cultural context abroad. Also, by prioritising a home country customer, and studying their behaviour, they incrementally modified their platform (product offering) before expanding their services beyond the home market context:

*[...] when we start internationalisation, we are doing it step by step. I think the first internationalisation that we will be doing is expats works. So Finnish people residing out of Finland because there we can supply the services from Finland. Because they want to have services in their own language then after that it would be Scandinavia. Let's say it would be the countries that have a similar system for elderly care.*

The founder highlighted that the novelty of the platform and other applications might intimidate their customers (i.e., senior citizens) and other users, such as the service provider and service centres. Therefore, because of their clients' demographics, the company tried to minimise stereotypes and social and psychological barriers concerning the use of high technology. Thus, they also 'educated' their customers on their value offering (e.g., convenience and flexibility) and the accompanying benefits accrued from using this technology and using feedback to improve the offering.

*[...] launching is something new is always a challenge, and we're creating awareness. We have just launched apps for android phones and tablets. [...] the elderly people were participating in co-creating the apps\_ And of course, we are gathering feedback from our customers and trying to improve our services and the selection of our service.*

Due to limited resources, deriving new network relationships, contacts and knowledge about the international markets and exports were the drivers for international market entry. Moreover, the founder exerted substantial control over the business (internationalisation) process, which presented a resemblance of the company being 'rigid' and cautious towards internationalisation, regardless of prior experiences or background:

*[...] I have discussed with some people that I know my international network. So, I have contacted and tried to see what the situation in their countries is. Let's put it that I know what it is to do export business and I know that it is very demanding and until now I have been kind of waiting.*

Table 4. The entrepreneur of *Kurros* making sense of relevant activities that influence the business model

Kurros: The Control Entrepreneur				
Temporal dimensions	Social dimensions	Spatial dimensions	Industry and market dimensions	Organizational, ownership and governance dimensions
Timing of value offering to the market gives the company a head start and flexibility in the international market <i>a forerunner in that way, so the rules are not yet applicable for services that are delivered to using technology so, it is a totally new market</i>  Due to customer misconception or lack of clarity with the service: The company devotes time towards educating target stakeholders (Clients, service providers) on about the benefits they could have using the technology to minimize psychological barrier due to the novelty of service offering	Strategic partnerships and networks relationships to foster the recognition and visibility of the firm = to make service more mainstream.	Incremental internationalization plans and leverage regional advantage: internationalization begins by doing expats works. So Finnish people residing out of Finland, because there we can supply them the services from Finland. Because they want to have services in their own language then the Scandinavian countries. Also, we will need to have local service providers because we can scale up the business  The need for localization to facilitate internationalization : <i>"We need to have local service providers then of course we need to do localization to our webshop in the local language of [...]the target market. I think that some countries would be subsidiaries and some countries would be licensing."</i>  The company capitalizes on it unique position in the market, product advantage and Market opportunity which is the rapid growing rate of the aging population and need for the resources to take care of them.	Some level of uncertainty and the firm still struggles with the acceptance of the service because old industrial processes are still prevalent. Also, no clear regulation and standard for products  Indirect / secondary (external) resources facilitates internationalization process. <i>"Launching is always a challenge and we are creating the awareness. I mean, and when we deliver the services to the tablet device you need to have a good coverage."</i>	Internationalization decisions is controlled and are dependent on entrepreneurs past experiences and social networks to meet new customers gather information on internationalization decision.  Recurrent control overseeing of firm and stakeholders activities influences internationalization and business model initiatives  The founders trying to minimize risks by being ahead with privacy issues. <i>"... EU ruling is going to be changed next year so then the rules would be tighter...when think about privacy issues, we have already known, we are taking (privacy issues) into consideration..."</i>
<i>Entrepreneur making sense of relevant internationalization activities and contexts that influence business model change</i> →				

### ***Kalamar's process***

At the early stage of their product development and being management consultants, Kalamar's entrepreneurs were iterating their value mechanisms (business model) and experimenting based on customer feedback. When they first set out to realise the untapped *business opportunity of consultancy services*, their launch was piloted in Finland and Sweden. The founders changed their business model by leveraging feedback and co-creation with customers. Customer involvement was evident in the innovation of value offering because the founders would use customer feedback as a resource for refining value offering (also, this is a case of the firm having clarity on their business models and channels). The founders tried to get as much information from the market and then prioritise what mattered, testing it before incorporating it into their standard processes (business models):

*[...] Before introducing the software, it was piloted with seven companies that operate in various industries (e.g., software, consultancy, physiotherapy, assembling equipment for electric scooters for elderly, etc.). The software was tested in order to receive a response and critical feedback on usability and, in general, how potential end customers feel about the product.*

The founders used an established well-thought-out go-to-market plan by identifying and rectifying challenges with their 'product fit' and 'customer needs'. However, though they changed their business model, they did so without compromising the core idea or their main value proposition. Instead, they remained sensitised with the customer context and its needs:

*I think that when you go deep into the core of the idea, there is not that much change, but of course, how to do it, that has been developing on the way. I guess more, now to be more focused than it used to be when you start it's not quite open for different opportunities and then when you go to market, you have to be more focused, how you really want to solve the problem.*

Due to their limited experience in some prospective markets, their distribution channel or strategy was not extensively reshaped by their business model. Instead, most of the changes and shaping of their business model were because of the product portfolio of their features (i.e., product offering). Moreover, due to the small size of their company, they preferred to experiment with their business model to optimise their core operations within the confines of their resources and capabilities before internationalising:

*[...] when thinking about how to produce the software and go to market, we reflect, what kind of features would be needed for the customers. Are we too early with those types of features? What is the order on how to produce (the software)? As a small company, we cannot create a perfect product before we got to the market. [...] Although we understand that it is a collection of supportive and continued products.*

The backgrounds and previous experience of the founder(s) contributed to their business knowledge and business strategy. The founders were alert and vigilant to international market changes, reflecting on how various market factors influenced their business model. They were continuously innovating their business model because they predicted that the shifts and advances in technology (e.g., artificial intelligence services) might take away their opportunities and threatens their operations. Furthermore, the founders perceived that it was easier to internationalise to similar markets. They recognised that mental resilience fosters initial market entry and/or internationalisation. Thus, the company also adopted bootstrapping as a strategy for the market validation of their offering.

*We have just a handful of customers right now, and we are selling and working directly with them. [...] So, mostly the changes and shaping of (the business model) has mainly been with the product portfolio of the features. [...] We are in the phase that we have to introduce the first models of the service, we have about 50 % of our service package on production right now. [...] however, though we have few paying customers using the software, we are in the bootstrap phase that is., we are looking for market validation for the product.*

Table 5. The entrepreneur of *Kalamar* making sense of relevant activities that influence the business model

Kalamar: The Experimental Entrepreneur				
Temporal dimensions	Social dimensions	Spatial dimensions	Industry and market dimensions	Organizational, ownership dimensions
<p>Pilot stage --&gt; Challenge with product fit with customer needs. Experimentation and feedback loop towards standardizing products and operational process.</p> <p>Link between small size of the firm's product development and market entry (intended go to market).</p> <p>Incremental approach to product and service (portfolio features) change and development to develop products that satisfy customer requirement. Customer involvement is valuable towards product development and standardization over time.</p> <p>In identifying opportunities. <i>We have different sessions where we use our own custom tool to identify all the things that are related in our market perspective. Then we rate and discuss and get that dialogue [...] to know when and how to proceed with e.g product development, technological opportunities, and marketing opportunities.</i></p>	<p>Mutual benefit using a revenue share model with the distribution network. <i>"so, we have a partner program. Our consultant's benefits, if they bring customers into the system. But that is our model, how to make money."</i></p> <p>Using feedback to create mock-up service to test the market: we kind of want to get the feedback and then formulate a bit cheap product also allows them to go beyond of customers feedback to understand that what they really want.</p> <p>Leveraging network ties to internationalize and establish local market presence. <i>We know it is a heavy investment, I to set up the operations in different countries, we have some plans to that with our network. we discuss with our network and friends on the market, if there are any ideas, that's how we do it mostly today. We would like to have understanding that what would be the core local presence that we need to have for supporting the consulting network in the local markets</i></p>	<p>Weighing options and pursuing internationalization incrementally and location advantage</p> <p><i>Internationalising to the Nordics due to similar regulations and network ties then other countries [...] depending on how fast we mature enough to go international. We are creating a model that we could copy in different countries the same time. we know, that we need to have a presence in each country, if we really want to be successful.</i></p> <p><i>Pursuing scalability: we of course want to be in scalable business and referring our strength mentioned we reflect how to build scalable software services. So, it means, that now we have a really high cost per customer, because we only have four customers. If we think about the whole structure and we are mostly focusing what them developing, so it really should turn vice versa</i></p>	<p>Leveraging core competence in technical and software business. <i>"agility and efficiency too build up and develop the product. To handle more demanding tasks compared to some of our competitors in our field.</i></p> <p><i>we try to identify some threats in the marketplace. we see that big players would introduce more intelligent system to do the same thing, which will replace the need of this kind of system we want to keep our eyes open, which means that we would have to radically change our business model.</i></p> <p>Experienced professionals with keen focus on the industry and training of customers for better acquaintance with products also on their standard processes to ensure optimal business model.</p> <p>When we go to market, we focus on the development in supporting services, for customers training train them with software tools and so on.</p> <p>Founder sees future internationalisation process as mental challenge for the company due to system and cultural requirements of host country. Thus, reflecting capabilities to implement effective business model as in home market.</p>	<p>Competitive edge and business model development lies in understanding the combination of core processes</p> <p><i>how can we combine different data and tools in one service. challenging old ways of doing business and we know our positioning with competitors [...] we are always developing the core needs and processes for the strategic management process. and that is endless work. But aim to we put our resources focused on the core market.</i></p> <p>continuous development in the industry and training of customers for better acquaintance with products also on their standard processes to ensure optimal business model.</p>
<p>Entrepreneur making sense of relevant internationalization activities and contexts that influence business model change</p>				

Together with the four main typologies of the international entrepreneurs, we developed a two-by-two table (see Figure 1 below) that categorises the different approaches of entrepreneurs in relation to their international experiences (e.g., general work experiences education,) hand their urge towards changing the business models as they engage or attempt to enter the international market. With our categorisation, we surmise the following:

- The *Tactical Entrepreneur* has prior business ownership and international experience. Although prioritising both product and process development, their expansive experience makes them capable of tactically iterating with their business model holistically. Thus, they tend to be more critical in iterating between the business model dimensions relevant in their internationalisation activities.
- The *Inventor Entrepreneur*, or the *Novice Entrepreneur*, has little or no international experience and is fixated on improving product performance and development. There is no well-defined approach and understanding of their business model development process, both domestically or internationally. The entrepreneur may be somewhat open to business model change but remains fixed in the business' initial idea, making it hard to move to a scalable business model.
- The *Control Entrepreneur* has an applicable background (e.g., education and international experience) relevant to the company's international expansion. However, this does not influence the entrepreneur's impetus to change or internationalise the business model. Hence, there is a sense of rigidity and caution in decision making and approaches the internationalisation of the firm. Such as targeting predictable or familiar (e.g. 'psychically or culturally safe niches') market segments.
- The *Experimental Entrepreneur* has prior business ownership and applicable background (e.g., education and may have some or limited international experience. Yet, this entrepreneur is still flexible enough to change the business model with an attitude towards the international market that accommodates uncertainty decision-making. Thus, the entrepreneur is experimenting with different value mechanisms and business models to find the optimal operational BM before going international.



Figure 1. A typology for the case entrepreneur(s) in relation to their international experience(s) and knowledge and urge to change the business model.

According to our analysis, the context in which founders have understood both their current and their future internationalization activities plays a critical role in how the type of business model as a potential 'boundary object' for internationalisation can be interpreted. We can see that some entrepreneurs were more have more prior international experience than others and were able to reconfigure their approaches, which seemed like a function of their background, previous business ownership, education, and professional knowledge. At the same time, we identify that experience (in this context) may not entirely determine internationalization success. In this case, the experience of founders may or may not necessarily

influence business model change or determine ‘tact’ in approaching international markets. For example, we can observe that both ‘novice’ and more experienced founders who are still on the brink of developing their service or product offerings (internationally) and did not have standardised value capture and delivery mechanisms in place to scale the business model for an international market.

Although we identified that value capture and delivery processes changed incrementally as the ventures developed their value offerings and organisational routines. In many instances, due to the founder’s sincere intent to satisfy customer needs, the founders were keen to hear what the customer wanted —thus paid more attention towards collaborating (with stakeholders) to refine the value proposition. These were acts (business model changes) seemed to be reinforced because of the holistic iteration between the value dimensions (e.g., *Experimenter Entrepreneur*). We also identified that more ideas or feedback from stakeholders and customers did not always yield valuable transformation to the business model without precise verification and identification of the value proposition delivery and capture activities to be implemented.

We recognise that although internationalization is an important trajectory in the early stages of venture creation, —If the business model change initiatives, and interrelated routines, resources and capabilities are not clarified or adequate to satisfy the market-specific requirement, attempts to shift to a more international setting may not be feasible and the venture may fail. Thus, it seemed important to set boundaries that permit iteration between the different value dimensions and clarify the required routines crucial for successful internationalisation and scalability of the business model.

### **Discussion and Conclusion**

The current study was designed to explore how entrepreneurs make sense of their business model and change it as they internationalise or seek to do so. Because this is a very much unexplored area, we used a qualitative investigation. Furthermore, our analytical approach of contextualising the individual, and the different related phases business model changes in their internationalisation journeys directed us to make a more nuanced sense of the findings in relation to different social, temporal, spatial, organisational and market/industry) dimensions of context (Zahra et al., 2014).

With our findings, we seek to add to the understanding of the iterative process between the individual and context in which business models and their internationalisation unfold. Our study delves into the nuances of how entrepreneurs interpret the contextual events and circumstances that have influenced the routines and processes unfolding as they internationalise. With our findings, we provide insights into how entrepreneurs navigate different contexts and how these various contextual dimensions shape their understanding regarding the creation and exploitation of international opportunities (Mainela et al. 2014) and (re)modelling of their business.

#### *The entrepreneur’s contextual experiences and capabilities to create and iterate business models for internationalisation*

Previously, scholars have denoted the influence of the background and current context in which the entrepreneurs make sense of things, make decisions, and act based on their experiences and perceptions of the world around them (e.g., Crick et al. 2001; Zander 2004). In the present study, we identified that the founders’ past and contextual experiences and related capabilities informed how the entrepreneurs navigated through different international contexts and reconfigured their business model. As has been pointed out in the literature, the experience and knowledge of entrepreneurs-cum-founders differ based on various factors, that is, previous business ownership, commitment, and level of involvement (Wasserman 2008), especially previously established, purchased or inherited firms by the entrepreneur (Ucbasaran et al. 2001). With our findings, we bring new insights into the body of research that suggests that the decision-makers’ orientation and prior experiences reasonably inform the (re)configuration (Child et al. 2017; Zahra et al. 2014; Jones and Casulli 2014) and subsequent modification of the business model (Asemokha et al. 2019). Although entrepreneurs with more international experience may be systematic and make sound

decisions (Collinson and Houlden 2005), entrepreneurs' contextual experience can contribute to or differentiate between the kinds of business models they adopt (Childs et al. 2017).

Furthermore, we have pointed out how the entrepreneurs with prior business ownership and international experiences (e.g., the *Tactical Entrepreneur*, *Control Entrepreneur*, and *Experimental Entrepreneur*) showed a propensity to go with more planned—or causal—actions and business strategies. Nonetheless, we acknowledge that this would not necessarily mean one is more risk-averse because their approaches (of the case firms) were different in terms of their propensity to iterate with the value dimensions of their business models. For example, the *Tactical Entrepreneur's* background allows them to reflect on how they perceive the present in their development of new product or service offerings and what business model is appropriate. Indeed, founders have the expertise and experience to identify an idea that could thrive. Thus, their expertise and commitment allow them to reflect on the requirements, capabilities, and resources needed to push ideas or processes beyond a particular stage or not. In their business operations, the *Experimental Entrepreneur* encourages learning through trial and error (Yli-Huumo et al. 2015; Sonsa et al. 2010; McGrath 2010). In this case, though the *experimental entrepreneurs* were iterating their value dimensions by experimentation, customer feedback and, consequently, modified their business models to validate their value offering for a suitable international market. Thus, the entrepreneurs demonstrated that by learning the ropes and delving deeper to understand the functionality of their business model mechanisms, entrepreneurs are able to identify barriers and develop tactics to deal with uncertainty, hence smoothing out operational activities (Kuemmerle 2002; Wasserman 2008). Thus, in line with studies that predict that the long-term success of a firm depends not only on the effectiveness and execution of the business model but also on the ability to identify and capitalise on new market opportunities (Saebi et al. 2016; Clauss 2017) while adapting their business models (Linder and Cantrell 2000; McGrath 2010, 2011; Chesbrough 2010; Hennart 2014).

With the Control Entrepreneur this study, we surprisingly identified that the entrepreneur's previous international education and work experience, significantly informed, her choice to internationalise 'safely'. Studies attest that some experienced entrepreneurs may fall into so-called *mental ruts and fail to change their business models or leverage their experience or knowledge into superior performance* (see Ucbasaran et al. 2008. p155). Accordingly, the case shows a restrained approach to international opportunity (i.e., potential customers) by targeting a 'home market culture' abroad. The Control entrepreneur's approach also demonstrates that the entrepreneur leveraged the home market as the initial point of departure for the product offering—unlike incremental internationalisation, where the company internationalises with lower perceived distance. This case can be said to deviate from the typical incremental internationalisation assumption (Johansson and Vahlne 1977). Peculiarly, it resembles a business model that becomes international but targets a 'home market' in a host environment. This shows that the early stage of a venture, creation in the home market, and host context matter in terms of a company's business model (Child et al. 2017) and inevitably ground the underlying (cultural) attitudes and further initiatives that drive the firm forward.

The *Inventor Entrepreneur*, due to his keen technical background, was more fixated on product development ideas, thereby making it challenging to develop routines for a scalable international business model. Although the inventor created a unique product and wanted to scale the business model abroad, his limited prior international experience or capabilities hindered scalability of the business internationally. Furthermore, the inventor entrepreneur's resource and capability constraints seemed to force him to lean towards 'online channels' without determining the 'fit' of the intended value activity to the prospective channels. Instead, the entrepreneur's lack of experience led him to welcome and encourage 'many new ideas from stakeholders', to augment for his lack of know-how rather than understanding how to holistically develop the business model—which may support product development but eventually lead to a lack of focus within other essential aspects of the business model, such as value capture and delivery mechanisms.

Although with the above insights, we uncover that entrepreneurs' propensity or capabilities to iterate their business model for internationalisation may be debatable. Studies purport that previous

experiences, shape the entrepreneur's actions and decision making, or entrepreneurial context (Childs et al. 2017) influencing how firms control their business operations (Magretta 2002). Our findings perhaps show managerial capabilities valuable and dependent on the individuals' sense-making because the previous experience may also lead to substantial control of firm activities, which may slow down the internationalisation process. Essentially, both inexperienced and experienced entrepreneurs may demonstrate unique capabilities in initiating the business model change. Notably, compared to the other entrepreneurs the experienced *Tactical Entrepreneurs* and less experienced *Experimental Entrepreneurs* both showed more dynamic managerial capabilities in approaching international opportunities than others by devising a unique pathway to transform recognised opportunities and curating (strategic adjustment) their business model for scalability. Thus, they demonstrated more strategic alertness and tact by adopting experimentation and iteratively testing their value dimension (proposition, creation, delivery and capture) activities in the market while still possessing a different contextual and experiential background.

*Business models as boundary objects for entrepreneurs in internationalisation*

Some scholars advocate that the business' architecture has to become more structured, and the founder is then required to create formal and core processes, develop specialised roles and satisfy the company's needs (Cavalcante et al. 2011; Wasserman 2008). However, the decontextualisation of business models at the early phases of a venture or those on the verge of internationalisation may bring a false sense of stability and/or a 'roadmap' to success. Considering the broad scope of firms' entrepreneurial history and future trajectories, especially as they internationalise, business models may act as a 'boundary object' (Doganaova and Eyquem-Renault 2009). As boundary objects, business models serve as the go-to means to explain the action and coordination of the various actors interested in value creation and capture (Cavalcante et al. 2011; Doganaova and Eyquem-Renault 2009).

With our findings, we seek to remind researchers and practitioners that business models as boundary objects do not constitute the same context for every entrepreneur but serve as a framework to understand and interpret the 'change context' as they engage in business activities. Therefore, in light of our findings, we argue that business models should act as broader lenses and curative tools through which entrepreneurs can incrementally or radically visualise the firms' internal and external operations *in context* to optimise business success, even in times of radical change. As a result, the integration of contextual understanding with business model change is a valuable framework that entrepreneurs can leverage while examining their existing core processes for further development in their internationalisation journey. Aligning with research on business models and the internationalisation context, we denote that the process of changing the business model should be considered as context-specific and that it cannot be universally generalised (Rissanen 2019). Furthermore, because of the process' dynamic and cyclical nature, business model changes may not necessarily be replicable for exactly this reason (Rissanen et al. 2019).

In relation to this, our study has uncovered the important role of customer involvement in the co-creation of business models and their role in expanding the business model as boundary objects. We see that founders can co-innovate their value proposition with customer *feedback* and/or reiterate their initial proposition with value capture and delivery activities, leading to a more viable business model. Scholars agree that customer relationships provide the entrepreneur with valuable information about latent market needs and environmental changes (Chesbrough 2006; Clauss 2017), which entrepreneurs can leverage to create lock-in effects (Amit and Zott 2001). Additionally, in the current study, we see that the entrepreneurs' perceptions of their specific network ties informed their accounts of how they interacted with their business models in international markets. Hence, our findings further contextualise the previous notions in the literature, how network ties and partner relationships home and abroad augment the founder's knowledge and capabilities, providing them with support and market information to support their business activities as they go abroad (Ucbasaran et al. 2001; Zahra et al. 2014; Asemokha et al. 2020). In relation to this, we also want to point out how, based on their experiences, entrepreneurs contextual knowledge and networks with partners in context, potentially deconstructing institutional barriers by co-creating with reconfiguring

stakeholders and customers, leading to the iteration of the business model in the internationalisation context (as seen with the *Tactical Entrepreneur*).

More so, we add that despite customers' indispensability to the business process, their role has not been extensively explored in the business model discourse. Exploring should be done on the customer's role, especially on how their interaction with the entrepreneur leads to the (re)configuration of business models, particularly in international market contexts. Based on our findings, we suggest that entrepreneurs have a *bounded* capability to identify relevant feedback, especially in the initial phase of venture creation, and identification of what is feasible within the parameters of their proficiencies and without spreading resources and capabilities too thin. This may be especially the case in SMEs that have limited resources to reach international markets.

#### *Iterating the business model dimensions when leaving the familiar home market context*

According to Wasserman (2008), the successful transition from the idea, product development stage, or even initial sales is said to mark the end of an era; simultaneously, the dramatic broadening of the skills required (especially in the early stages of venture creation) in, for example, internationalisation, may stretch the founders' abilities beyond their limits (Wasserman 2008). Doz and Kosonen (2010) add that even successful ventures run the risk of failing if they continue in their old ways and do not adapt their business model to the changes in competitive situations.

Designing a business model from scratch takes time, and establishing the links (Cavalcante et al. 2011) to ensure the best outcome requires that the decision-makers understand the economic logic that best satisfies the environments and that envelops the business model (Childs et al. 2017; Stampfl and Prügler 2011). In the process of the current study, we identified how the founders might have leaned towards similar and familiar ideas based on their expertise and previous contextual experiences. In other words, the choices made by the founders tended to closely hinge on previous experiences, which determines the kind of domestic and international opportunities prioritised. In addition, knowing when to enter the market or industry affects new venture survival and performance, here as measured by growth and productivity (Zahra et al. 2014). In relation, it has been argued that home market maturity influences the timing of companies' internationalisation efforts (Rissanen et al. 2019). More so, the home market's spatial and institutional context affects the companies' approaches to changing their business model when internationalising, but research on this is scarce (Rissanen et al. 2019).

In conclusion, recognising how the different entrepreneurs approached business model change and internationalisation, we have enumerated that tensions may exist in how they appropriate value, modify their business model and carry out decision making, especially because of the different contextual factors in temporal, spatial and market contexts. In light of our findings, for entrepreneurs and their firms who are not yet profitable, market uncertainty and different cultural and social contexts may restrict how they make sense of approaching international markets.

### **Theoretical contributions**

Our contributions lie at the intersection of the business model and IE literature. With the present study, we address the call for a more contextual exploration of SME internationalisation activities (Michailova 2011; Onetti et al. 2012, Childs et al. 2017; Foss and Saebi 2017) and entrepreneurship (Baker and Welter 2018; Zahra et al. 2014) by focusing on entrepreneurs who were navigating both the individual and firm-level context to gain a deeper understanding of the dynamics of the business models of their firms. Moreover, in the current study, the heterogeneity of international entrepreneurs (in context) provides a compelling backdrop for exploring the changes occurring in SMEs' internationalising business models. Our work is in line with suggestions of contextualisation but provides more in-depth explanations of unobserved variables (Ragin 2009) by providing the opportunity to integrate existing frameworks and provide a deeper level of reasoning on theoretical and empirical findings (Zahra et al. 2014; Johns 2017).

To lessen some of the ‘decontextualisation’ and ambiguity in understanding the configuration and reconfiguration of business models as firms internationalise, we contribute insights into the individual’s sense-making in context (i.e., experience and background, current capabilities and networks) and business model changes. By introducing the four cases in light of Zahra et al.’s (2014) categorisation of contextual dimensions in entrepreneurship—the temporal, spatial, industry and market and social contexts—we contribute to the IE literature by qualitatively discussing how the iteration of the dimensions of business models is based on or affects the entrepreneurs’ experience and involvement in their immediate context. Although various market forces, antecedents, and contexts (Zahra et al., 2014; Kuivalainen et al., 2012) heavily affect internationalisation, our findings add to the understanding of how founders may choose the internationalisation approaches that suit their experience-bound capabilities (Milanov and Maissenhalter 2015) and creation and iteration processes.

Second, we shed light on an individual-level inquiry and contextualisation into the literature on business model change; we question the dominant quantitative methodological choices in business model research by conducting a qualitative inquiry of individuals in contexts which are bound to change. By introducing a more nuanced discussion of the contextual dimensions of business model creation and change, our study adds empirical evidence of how the emergence of a business idea is an important and contextually heterogeneous phase of value creation and capture (Eppler et al. 2011; Cavalcante et al. 2011). This view connects the entrepreneur’s experiences, current motivations, and future trajectory of the business model as dynamic. More so, because business models are dynamic (Amit and Zott 2001; Chesbrough and Rosenbloom 2002), engaging more heavily with context provides alternative explanations on complex phenomena and providing bounded propositions (Zahra et al. 2014) and findings. Accordingly, rather than serving as distant reporters, we draw from Zahra et al. (2014) to minimise the familiar and broad assertions about the causal mechanisms that underlie a phenomenon, developing a more profound and meaningful understanding of the individual in context.

Third, in light of our findings, we deepen the understanding of how the business model literature in the ‘change context’ of internationalisation can further address the different kinds of ‘static’ (the novice *Inventor Entrepreneur* and the expert *Rigid/Control Entrepreneurs*) versus ‘flexible’ (the novel *Experimenter Entrepreneur* and the expert *Tactical Entrepreneurs*) approaches that individual entrepreneurs embody when going about the business model creation and iteration processes. Our study shows that business model (changes) may serve as a ‘boundary object’ (Doganaova and Eyquem-Renault 2009) that can lead both researchers and practitioners to tap into the founders’ personal needs to control their value creation, capture, and delivery as a ‘static’ model and/or see how to work towards a more flexible business model in internationalisation and its iteration. More so, adding to pivotal studies that have examined and established how international(ising) entrepreneurs’ identities ground their entrepreneurially and internationally oriented behaviour (Korhonen et al. 2019). With the present study, we further discuss how individuals’ experiences and contextual business model creation and iteration ground their(entrepreneurs) approaches with the internationalising firm.

A more practical contribution of the present study is that by making oneself aware of the delimiting ‘context’ (i.e., experiences, current capabilities and networks), individuals are more able to ‘break free’ from how their own context inhibits them from changing their business models for international markets. Looking at this in today’s present times of uncertainty, particularly this contemporary era of global change, crisis, and political shifts, (for example, Brexit and the US elections) when entrepreneurs are becoming more aware of how varying issues affect their ecosystems. Unexpected contextual matters that affect the whole world, such as global pandemics closing country borders, may force entrepreneurs to rethink and adapt their current and future business models and organizational routines to match changing trends and minimize competition as they internationalize. Besides, when an entrepreneur begins to see how their business model is contextually and socially constructed, the entrepreneur can also see beyond it and step out of its boundaries and rationalise what is perhaps better for the company. Thus, the entrepreneur can better reflect on the capabilities and constraints stemming from a ‘context-bound sense-making’ by using

the business model as a boundary object and finding complementary resources to (re)configure the business model beyond their own context, for example, in the international market.

### **Practical implications**

With the present study, we invite entrepreneurs to a constant and critical re-evaluation of their approach towards international opportunities to see if their methods are feasible and within their business models' boundaries; doing this can train them to welcome times of change without the crippling fear of uncertainty. In relation, entrepreneurs should question their own motives (what motivates one to continue and dig deeper into the possibility) and commitment (what does this require from me; do I have the interest to put my resources into this?). This can guide them in identifying the activities and routines and whether an idea should grow past a particular stage or not. The founders need to self-evaluate their actions and know when to stop collecting ideas if they have too many untethered parts in their operation that do not work well together towards developing the standard processes necessary for the independent functionality and maturity of the business model.

Our study also stresses network ties as a conduit for early internationalisation activities and the execution of ideas. Hence, entrepreneurs—especially those with previous business ownership—should leverage partner knowledge and support-to-support internationalisation. As in the case of the *Tactical Entrepreneur*, we see an example of how entrepreneurs can deconstruct institutional barriers by co-creating with reconfiguring stakeholders and customers, thereby lowering bureaucracy and regulations (e.g., financial systems, payments or channels). Furthermore, in times of uncertainty, person-level interactions may become more crucial for developing alternative channels and agile tactics to help navigate bureaucracies and minimise institutional barriers. Beyond just having relationships with customers and partners, establishing trust and rationalising contextual communications with potential customers creates lock-in, which may precede securing deals or having a keen focus on the value proposition.

Together with other studies (McGrath 2010; Sosna 2010; Rissanen et al. 2019), we see how some firms may opt to *experiment* with their business models through trial and error before developing an optimal model. Hence, managing business models requires effective leadership and commitment and the capability to experiment with a business model by leveraging feedback loops that provide diverse possibilities for value creation and capture. Beyond solving a problem with a service and product, founders should strive for business model fit by engaging with their customers to better understand industry and market complexities. This means having the capability to iterate back and forth between the value mechanisms (i.e., value proposition, deliver and capture) to ensure that the customers' needs are efficiently met and solved; in addition, ensuring that the business model is viable and delivers and captures profits is of the utmost importance to the success and performance of internationalising ventures.

### **Limitations and future research avenues**

Business models do not occur in a vacuum, especially for internationalising SMEs. The current study points out that the contextualisation of business models and business model change calls for more in-depth case studies or even single case studies that reveal more of the nuances in creating a new venture. Although a quantitative survey-based inquiry shows that various factors predict and control the business model dimensions, the present study set out to qualitatively investigate some nuances that exist in and between these dimensions. We show that business model research would benefit if the scholars considered in-depth on how these nuances play out in the contextual environment and what implications they have for the business model.

Because international contexts do not occur homogeneously, and entrepreneurs do not interpret them routinely, firms navigate and make sense of multiple international contexts that may not be observed at the surface. Drawing from our findings, there is a need for more in-depth qualitative research on how entrepreneurs make sense of the context in which they make decisions and how they can act to make the arguments and assumptions of the contextual dimensions affecting the business model change. In addition,

longitudinal studies would provide an even more processual exploration of the patterns and contextually causal effects of business model changes as founders engage in internationalisation over time. Because our present study was mainly focused on the founders' actions as the context within which they internationalise, we encourage future studies to explore external events such as the activities of customers, partners, investors, legislation, and other external stakeholders shaping the actions of entrepreneurs and how they encounter different market contexts.

Finally, we also note that the firms we investigated had an online or service offering, unlike brick-and-mortar firms, which may have the propensity to provide a more curated value proposition for different clients without altering the primary value offering. We suggest that empirical studies should delve deeper to demarcate how firms with tangible products or firms operating in other industry contexts change their business models.

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## **Publication IV**

Asemokha, A., Musona, J., Ahi, A., Torkkeli, L. and Saarenketo, S  
**Business Model Innovation in the Internationalization of SMEs: The Role of Causation and Effectuation**

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## Business Model Innovation in the Internationalization of SMEs: The Role of Causation and Effectuation

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### Abstract

*Small- and medium-sized enterprises (SMEs) undergo different life cycle transitions that affect their business models (BMs) as they seek new to enter foreign markets. Although international entrepreneurship (IE) scholars have recognized the relevance of exploring the creation and growth of entrepreneurial firms, there is a dearth of studies linking how the key decision-makers influence their business model, especially as they pursue internationalization success. This study aims to respond to these gaps in the research by examining the nexus of effectuation and causation (decision logic) and how the combined effects of these logics influence business model innovation (BMI) as SMEs internationalize. In reviewing the existing literature on these concepts, we develop theoretically driven propositions that link business model innovation and decision-making logic in international entrepreneurship that can be subsequently tested with empirical data in the future. This study contributes to the literature on decision-making and business model innovation. It also links two streams of the research, which, to our knowledge, is limited. Moreover, the study is unprecedented in the international entrepreneurship domain.*

### 1. Introduction

The common goal of setting up a business is to be profitable and improve competitive positioning and improved performance both at home and abroad [1]. As a result, companies that seek to internationalize are faced with the vital task of re-configuring their business models and matching their activities to manage uncertainty and effectively exploit recognized opportunities [2, 3]. Entrepreneurs are also expected to be knowledgeable enough to predict the future and adequately coordinate their resources and capabilities [4] to achieve successful internationalization [5, 3]. However, because internationalization is a complex and daunting task, especially in small and medium enterprises (SMEs), managers need to assess the market situation, make sound judgments and re-configure their business models to ensure that they will thrive in complex and uncertain markets [6, 7].

Decision-making is essential because it provides useful insights into how firms adapt their business models (BM) and orchestrate existing resources and capabilities to create value for customers and stakeholders as they operate or veer toward international markets [6, 7, 8]. Therefore, managerial decision

logic influences both the firm's BM and the strategies adopted in new market operations [8]. Previous studies highlighted that firms' decision-making and business models are expected to be interlinked [9, 10, 11, 12], revealing that the exploration of managerial choices may explicate *how* and *why* companies internationalize and the *implications* for BMs and vice versa [7]. As a result, we give credence to the notion that firms' BM and entrepreneurial decision-making are interlinked [13, 3]. However, because they have been examined separately, the dynamics of decision logic and business models have not been studied, particularly in the IE/IB domain. Previous studies point out that emerging perspectives in IE, such as BMI [14, 15, 16, 17, 18] and decision-making logic, are valuable concepts in explaining the behavior and actions of SMEs that undergo internationalization [4].

Scholars also advocate that IE research would be further enriched by adopting alternative frameworks and perspectives that provide a more profound and complementary understanding of entrepreneurial activities, such capabilities, BM dynamics and changes occurring in the firm, as well as other activities influencing the lifecycle of the firm [19, 20, 21]. Studies have shown that firms with access to financial incentives, valuable network partners, enthusiastic employees, and effective leaders support the journey of business growth and long-term success [22, 23, 24]. Scholars have added that a firm's success lies in the entrepreneur's contextual role, orientation, motivations, and how their means and actions support the achievement of set goals [4, 14]. Therefore, understanding decision-making logic and entrepreneurial behavior, especially regarding international market opportunities, would help advance the IE and business model innovation (BMI) research [14, 25, 26]. The reason is that managerial decision-making and the ability to change BMs innovatively are valuable in the BM development and long-term success of a venture. By exploring entrepreneurial decision-making, we gain further insights into how SME actions influence opportunities (i.e., identification and discovery) and the choices made to execute them, which affects BMs adopted in foreign markets [8, 16, 12, 23].

This study explores SMEs' decision-making (i.e., effectuation and causation), as well as the combined effects of these decision logics on BMI's overall role in creating, delivering, and capturing value in SME internationalization. Effectuation and causation provide a useful lens for exploring international entrepreneurial firms, the effectiveness of their managerial choices [16, 13], and their business models [23, 24, 27]. Most previous studies have focused on either causal or

effectual logic to examine international entrepreneurial behavior and performance [28, 29, 30, 31, 32]. However, the implications of the combined effects of effectual and causal decision-making logic have been left unexplored.

This study both draws on and contributes to the IE domain literature by exploring theoretical linkages between BMI and the decision-making logic(s) of effectuation and causation. It illustrates the role of decision-making logic and its influence on the BMI of internationalizing SMEs and, as a result, provides theoretical propositions. We continue by reviewing the relevant literature on decision-making logic and the BMI of internationalizing SMEs.

## 2. Literature Review

### 2.1. Business models and business model innovation

Business models have gained prominence in academia and practice since the 1990s. Several studies have attempted to describe, theorize, validate, and link BMs to other disciplines [33, 34, 35]. Despite the increasing amount of research on business models, there is still insufficient attention in the literature to theorizing and borrowing ideas from neighboring disciplines to advance BM research [33]. However, converging descriptions have defined a BM as the design or architecture of a firm's observable constellation of activities that are dedicated explicitly to value creation, delivery, and capture mechanisms [7]. *The value creation* mechanisms in BMs reflect organizational decisions that define resource allocation, identify and capitalize on new business opportunities, and introduce new products and services in the market [35]. *Value proposition* deals with how the firm provides value to its customers [7]. *Value capture* focuses on the way the business makes profits [36].

BMs reflect entrepreneurial decisions, strategic decisions, and operational implications [9, 33, 35] as entrepreneurs discover and implement new opportunities [37, 38, 3]. Hence, a firm's BM manifests an idea that conforms to an envisioned architecture and embodies how entrepreneurs create and deliver and capture value [7]. Researchers have pointed out that entrepreneurial orientations and managerial approaches to opportunities and decisions greatly influence the degree of success that such businesses can accomplish, especially across national borders [24, 25, 26]. Nonetheless, it is crucial to note that a BM is unique to each organization. Moreover, the dimensions of BMs consist of several interrelated building blocks that form different configurations that can be used to evaluate change [7] within the firm. However, a change in one dimension may not have a direct or immediate impact on another dimension. Empirical research on BM change configurations could provide further insights into a firm's working logic [14, 20, 27]. BMs nonetheless provide dynamic insights and interpretations of management activities and decision-making [16]. Therefore, changes that occur in BMs can provide an in-depth understanding of management and entrepreneurial reactions to environmental changes, and they are related to a firm's operations, strategy, and internationalization activities [27, 23, 8]. The exploration of business model innovation (BMI) leads to the evolution and development of BM beyond novel products and services.

Hence, by innovating their BMs, SMEs develop unique capabilities of satisfying stakeholders while sustaining competitive advantage.

Previous studies have shown that managerial decisions influence how organizations innovate, conform, and develop the core processes necessary for internationalization success [23], thereby reinforcing that business models are powerful tools that can be adopted to hypothesize and decide customer wants (e.g., products and transaction methods). However, entrepreneurs can dynamically combine value mechanisms to ensure that their customers are satisfied, and the firm's goals are achieved [7]. Thus, entrepreneurs may leverage the business model's flexibility to accommodate market uncertainty and the changes [20, 21] required in a company's day-to-day activities, which influence value creation and appropriation and have implications for the business agility and success of the firm [39, 20, 21]. Thus, by examining a company's BMI activities, we can rationalize its ongoing changes and further examine the choices made within and beyond the decision-makers' bounded rationality as well as the implications for business success [20]. Figure 1 provides an illustration of the research framework and propositions.

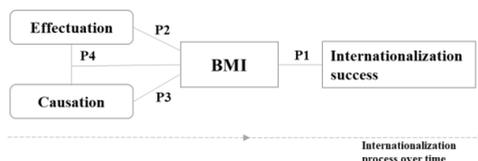


Figure 1. Research model (framework of the study)

### 2.2. Internationalization of SMEs and Business Model Innovation

Regarding the future of IE research, scholars have highlighted that IE and IB research has made great strides because it offers valuable opportunities for explaining complex phenomena using existing and emerging strategy theories and frameworks [3]. Thus, drawing on the IE context, we aim to gain theoretical insights into how entrepreneurs' activities may affect the BMs of SMEs when they internationalize. Moreover, we consider that the BMI perspective is a persuasive contributor and outcome of the international entrepreneurial process because it allows us to rationalize the strategic choices and internationalization activities of SMEs, which are known to be complex.

The research on BMI has provided scholars with a novel way to harness and interpret real-world (i.e., firm-level) operations and managerial choices, which have not usually been explored in tandem [40]. The exploration of BMI activities allows for the practical observation of change, such as how the company improves its existing BM or develops new [11, 41, 42] or complementary processes, products, and organizational innovation [33, 40]. Evidence from both academics and practice has shown that top business executives prioritize BMI as an alternative or complement to product innovation, as well as to combat competitive pressures and cope with uncertainties as they internationalize [34, 43, 44]. Therefore, BMs are a competitive tool used to incrementally or radically innovate the core processes [20] of the

organization and enable viable and remunerative business decisions [35, 44, 45]. Moreover, previous studies have confirmed that BMI (i.e., superior to product or technology innovation) contributes to the success, competitive advantage, and success of internationalizing SMEs [23].

As firms internationalize, managers must make strategic choices and develop dynamic BMs that support an effective transition into new markets and manage uncertainty [46]. Scholars have identified that managers in the vanguard of core activities support decisions (e.g., information gathering, customer engagement, managing partner and supplier relationships, and other operational activities) that are critical for successfully shaping the value configurations necessary for managing uncertainty in the internationalization process of SMEs [28, 34]. The SME manager's role, orientation, and choices are catalysts that reinforce or undermine a company's innovation and growth trajectory [23]. Hence, the firm's working logic is a resolute or predetermined consequence of managerial choices, and a firm's strategic choice is mirrored and interpreted through its BM [47].

SME managers engage in BMI to thrive in international markets [8, 26]. However, to manage business interactions and make strategic choices regarding a BM or select stakeholders' interactions, managers need to experiment or test their business activities to ensure that they are scalable, repeatable, and suitable for the BM [21, 3]. Thus, BMI is particularly valuable in providing managerial initiatives and decision-making about firm operations and internationalization activities [44, 45, 46]. It is also useful in helping managers to predict or control uncertain market conditions, which is valuable for profitable outcomes [44, 4]. Thus, we surmise that managers who prioritize BMI in their decision-making provide a unique competitive approach through which firm strategies and operations cannot be easily replicated [47, 48, 7], thereby making the BM of internationalizing SMEs a competitive tool that can accommodate the continuous adaptation of firm activities for a long-term competitive advantage [49, 9, 23]:

*P1: SMEs that engage in business model innovation can internationalize better and quicker than those who do not engage in business model innovation.*

### **2.3. Business model innovation and effectuation logic in SME internationalization**

Effectuation is a logic-based on non-predictive control, and it is defined as *means-driven*, *logic-driven*, or emergent planning [4]. It is based on the selection of alternative principles. Effectual thinking considers heuristic processes and managerial interactions to achieve a set of means [50, 4]. Internationalizing firms that adopt effectuation tend to be more flexible in their strategy formulation and implementation and their business (model) activities in general [13, 23, 51]. For that reason, they may repeatedly experiment with different market scenarios and BMs before selecting a suitable and specific BM design [47, 51, 52]. The concept of affordable loss is highly integrated into the orientation of effectuation [6, 53]. SMEs that adopt effectual thinking tend to be more risk-averse and incrementally internationalize or invest than their casual counterparts [6, 13, 1]. Entrepreneurs who adopt

effectuation are often more experienced and creative, and they tend to innovate their BMs incrementally based on market dynamics or even by chance in proportion to [16, 8] organizational and/or stakeholder demands [53]. In summary, effectuation logic leverages strategic relationships, resources, knowledge, and capabilities to foster the exploitation of market contingencies and opportunities [54, 55, 13]. In other words, they tend to be proactive and do not necessarily stick to strict plans or the status quo because of their experience and creativity and the need to be ahead of the competition. Examples of this kind of firm are software or platform companies where technology and consumer interests are continually changing, and entrepreneurs have no choice but to innovate daily to remain relevant. However, some studies have argued that effectual logic is often emphasized in the early stages of new venture creation and gradually transitions to causal strategies in later stages [30, 22]. However, we predict that SMEs that follow effectuation logic in their decision-making processes are likely to innovate their BMs as they internationalize:

*P2: Effectual decision-making logic in international SMEs leads to increased business model innovation.*

### **2.4. Business model innovation and causation logic in SME internationalization**

Causation is a rationale that involves developing a strategy from a starting point, planned strategy, or destination goal [4]. Sarasvathy noted that the role of decision-making logic is more visible due to environmental and market uncertainty [4]. Briefly, causation is the decision-making rationale of planning *ex-ante*, while effectuation is based on *ex-post* and emergent strategies [13, 31]. Previous studies demonstrated the relevance of causation in actions based on preexisting market information and rational entrepreneurial choices [50, 13]. Causal decision-making was found to allow managers to make calculated plans regarding internationalization choices [8] to optimize their resource flows and achieve predetermined goals [51, 4]. Causal logic involves making predictable goal-driven plans and exploiting knowledge and resources to capitalize on future opportunities and gain a competitive advantage [50]. The incentive for causation is based on the premise that firms initiate deliberate and analytical measures to minimize the unexpected effect [4]. Causal approaches to BMI provide a preemptive orientation to business, which has not been extensively explored in the research, especially in internationalizing entrepreneurial firms.

Entrepreneurs who causally approach decision-making tend to be highly capable of predicting the future [3]. However, some firms may adopt causation logic because the entrepreneurs have limited international experience and may want to minimize risks [13]. Nonetheless, entrepreneurs who use the causal approach quickly exploit opportunities; thus, they tend to closely monitor their external environment to generate new information about future developments, which is valuable for potential BMI and BM development [1]. The goal of implementing causation in a firm's BMI aims at augmenting environmental contingencies and uncertainties in international markets [39, 1]. Causation has been seen as an enhancer of BMI [1]. This finding contributed to the BMI

research by showing that managers may implement causation to support opportunity identification and international market decisions and ensure that the firm (i.e., value proposition creation and capture) is well-targeted to the intended market or segments. Entrepreneurs may also use the marketplace's feedback to refine their product or service [16]. Therefore, internationalizing SMEs driven by causation logic are likely to be successful in internationalization activities when they increasingly innovate their business model:

*P3: Causal decision-making logic in international SMEs leads to increased business model innovation.*

## **2.5. Business model innovation: the role of effectuation and causation in SME internationalization**

Numerous factors may influence an entrepreneur's choice of adopting either causal or effectual logic. Some reasons include experience, funding, organizational change, and so on [13, 25, 18, 53]. Advances in technology and globalization have increasingly blurred industrial and market-entry barriers. More than ever before, firms can interact with customers in real-time and provide them with services from anywhere in the world [48]. Thus, allowing managers to rethink and redesign their BMs because technological advances make it possible for firms to reach customers swiftly and, consequently, speed up the exploitation of international opportunities. Moreover, because of BMI's immeasurable importance for competitiveness and growth, which are a strategic priority for managers in diverse industries and a source of above-normal returns [33, 27], SMEs continuously seek to innovate their BMs [23].

Examining the role of decision-making as SMEs cross borders provides a deeper understanding of entrepreneurial actions as a function of choices, which gives structure to a firm's process (i.e., BM) and informs managerial measures to approach market opportunities, especially in dynamic and uncertain environments [4, 53, 10]. Varying perspectives have been used to explain how executive decisions shape a firm's future. For example, some studies have justified that the managerial capability to sense, seize, and transform an opportunity has led firms to causally amplify their efforts in improving their core activities, thereby leading to BMI [22]. Thus, causal initiatives tend to reduce uncertainty and support the impetus for BMI and predictive profitability. Moreover, some studies have shown that entrepreneurial firms may design an artificial system or engage in BMI to attain a specific goal or commitment to the future [19]. Other studies found that instead of analytical planning, through trial and error or experimentation [51], they may engage in BMI to quickly capitalize on an actual or latent opportunity or, better still, test the lucrativeness of the opportunity [22]. However, despite these distinctions, effectual logic is often emphasized in the early stages of new venture creation and gradually transitions to causal strategies in later stages [30].

Managers act as agents of change [20] and use their BMs as decision-making tools, either effectually or causally, to redesign or change their operations to satisfy a situation, especially when they enter or consider internationalization [8, 9]. However, we recognize that the entrepreneur's or

manager's role is pivotal because of the bounded rationality of human nature; an entrepreneur will make decisions based only on his or her knowledge or capability. It may be difficult to demarcate the tensions between effectuation and causation regarding entrepreneurial behavior, especially when SMEs seek to enter foreign markets [10, 24]. Therefore, a firm's decision may alternate between both logics depending on the situation at hand. Decision-makers may also have varying sensitivities to how they perceive the future, orchestrate resources, and evaluate risks and uncertainty [24, 52]. Thus, both effectual and causal logics provide in-depth insights into strategic orientations, responses to opportunities, entrepreneurial action orientations, partnerships, and alliances, all of which are vital in understanding entrepreneurial and SME internationalization behavior [16, 56, 57, 58].

Moreover, scholars have suggested that both effectuation and causation can function as complementary or alternative cognitive entrepreneurial approaches used in new venture development [10, 24, 56]. Some studies even view the combined use of effectuation and causation as an "organizational ambidexterity" [59], i.e., the ability to pursue two things simultaneously [60]. Some studies highlight organizational ambidexterity as a firm's capability to efficiently manage routines or daily business demands while simultaneously adapting to environmental changes [61]. Scholars also debate that the combined usage of both logics can foster holistic knowledge mapping of an entrepreneur's decision making [62], arguing that the use of a single logic may result in inconsequential reasoning and the inability to compare different options [59]. However, scholars advocate for pursuing both logics to leverage their complementarities and enhance performance [59, 63].

This suggests that the sub-constructs of effectuation and causation are not necessarily in absolute opposition to one another; instead, they could be viewed in combination or orthogonally (i.e., similar to satisfaction and dissatisfaction) [10, 24, 56]. Hence, exploring BMI and the combined and/or alternation of effectuation and causation could be valuable in better explaining SME internationalization activities [10, 39, 1]:

*P4: The more that internationalizing SMEs combine effectuation and causation logic in their decision-making, the greater their engagement in business model innovation.*

## **2.6. Business case**

This case involves how a Finnish SME (Company Alpha) expanded into international markets and how the managers approached decision-making as their firm ventured across borders. Company Alpha is an online business that provides streamlined e-commerce solutions and services for clients by providing them with custom solutions to enable them to sell their products in international markets. Its BM is centered on bridging international boundaries and providing custom solutions to help clients export Finnish products conveniently to international markets. Alpha's main value proposition is to act as an intermediary for business clients and provide services

and relevant information to customers to achieve cross-border trading of their products and services online. Their business solutions include e-commerce, sales management, logistics, and consulting, mainly in Russia, Japan, and China. An example of their mode of operation is that Alpha offers its clients the option of entering the Russian market by building their online store or creating a space for them in the Russian multi-seller platform. For example, Alpha created solutions for its clients (i.e., retailers) by co-creating one of the largest Japanese online market platforms.

The company also works to gain more cooperation with other online marketplaces. The company has expressed interest in expanding its client base into the Nordic countries, parts of Europe, and North America. However, their immediate focus is to support clients in the home market to sell products in the Russian, Japanese, and Chinese markets because of their experience working with partners in these specific markets. Alpha has vast network relationships and consistently collaborates with partners to develop international and local partners, such as partnerships with local logistics providers (i.e., the home and host countries) at both ends of their customer scale. The company also provides an all-in-one package that allows clients to internationalize successfully by leveraging services (e.g., logistics, marketing, local channels, and consultation), thereby minimizing significant internationalization investment costs, which is crucial in facilitating international activities between clients across borders. The founders' expertise was fundamental to the creation of the company. The founders were experts in different professional fields, such as international marketing and logistics. Thus, the founders' combined expertise provided the foundation in which the BM and the firm's core services are embedded. Table 1 shows findings based on Alpha's internationalization of its operations in Japan, China, and Russia. Table 1 includes excerpts from responses about the company's decision-making and how the entrepreneurs approach international opportunities. Although we did not analyze the case in-depth, we *reflected on* and *identified* how the entrepreneurs leveraged their resources and capabilities, the consequences of their entrepreneurial actions, and how they were manifested in changes to the company's BM.

Table 1. Business model changes and decision-making (Case Alpha)

Useful quotes	Business model changes: Connecting BMI & internationalization activities	Decision-making logic: Effectuation and Causation
New customer, value offering, and customer base		
Customer push and opportunity sensing [The Japanese company] contacted us [...] They started to discuss with us that they would like to have Finnish products [...] We didn't actually think about Japan at this moment at all [...] Then we changed our plans that "OK, now we do this" [...] We were forced to change our strategy in this kind of opportunistic way in a point when we saw that now this might work and let's do it."	Establishing a new market presence by opening a new target market base	Effectuation
Founders' (past) experience and related capabilities "For us, Russia has a very long	Generating knowledge and creativity based on	Effectuation

<i>history. Because my previous company was dedicated to Russian internet marketing, this current company is the spin-off company of that. [...] We found that this kind of e-commerce solution is needed."</i>	previous international personal experience	
Juxtaposition (iteration) in value capture and delivery		
Developing/establishing a marketing plan to seize the recognized opportunity "Also, the idea of this web page is that this is the channel through which the companies can contact us. So, we started discussing this web page..."	Developing of a new channels by creating an online presence to reach existing and new customers.	Effectuation and Causation
Devising a pathway to transform sensed international opportunities and utilizing complementary assets/capabilities to capitalize on the realized opportunity "...Now I'm planning this new marketing plan. I'm defining it. The core of this plan is that we should have a good web page where we can present our services, and the references tell about us and this kind of thing... and other channels which we're going to use are Twitter, LinkedIn, Facebook, YouTube, as well. They are the channels that are leading the traffic to our web page."	Formulating competitive new channels and strategies to identify and reach new customers markets	Effectuation and Causation
Value creation and opportunity execution based on core competence and partner networks		
Practical knowledge and expertise adapted to transforming opportunities "We already have a very wide range of expertise in the background of our company [...] I manage marketing with my partner. The present CEO is a logistic expert; our partner trades the software we use on our platform [...] All these experts (working) together provide all we need."	A wide range of expertise and tactical capabilities in the background of the founders favors innovation and the development of new ideas.	Effectuation and Causation
Strategic planning and approach to international opportunity: based on accumulated experiences and market knowledge. Leveraging past relationships, partners, and networks to execute the idea. This company was created in connection with our Russian networks from our previous [...] This is the long history of these connections [...] However, the core idea is that we do not want to grow [...] the platform too much [...] By keeping it as light as possible [...] and leveraging our networks, we can keep fixed costs low at the moment.	Leveraging existing networks and capabilities and experience to implement new ideas to create and capture value and minimize risks and uncertainty.	Effectuation and Causation

### 3. Discussion

This study examined the relationship between SME decision-making based on effectuation or causation logic, BMI, and the implications for successful SME internationalization. Previous studies [24, 1] have elaborated on the positive relationship between BMI and SME internationalization. However, in the current study, we established the relevance of entrepreneurial decision-making for the BMI and IE literature, which has been little studied. We also stated propositions of effectuation and causation and how they related to BMI. We contended that despite the differences between effectuation and causal logics, in internationalization, the logic used in managers' decision-making may overlap

depending on the firm's context or situation. We also emphasized the need to examine the combined effects of decision-making logic and BMs in the IE domain.

Based on the case of Company Alpha, our study established that varying trends and market requirements or situations (e.g., founder's experience and network relationships) determined how managers reacted to international market opportunities [16, 64]. Thus, entrepreneurs could use their BMs as narratives or tools to communicate how they want to manage and organize operations [16, 55, 10]. In other words, in dynamic and rapidly changing environments, firms need to change their BMs, routines, and processes, both actively and flexibly [19, 64]. This can occur by combining effectual logic and causal logic to manage the risks associated with this dynamism and enhance the firms' competitive position in international markets. Our study also found that changing market dynamics and factors may influence a single or combination of a BM's value mechanisms [8, 17]. However, entrepreneurs must invent and identify unique ways to predict and control their future through decision-making processes, which do not occur in a vacuum [65, 54, 31, 4]. Instead, decision-making logics are expected to reveal how internationalizing ventures manage to grow and survive despite the challenges they may face, such as liability of newness or smallness, limited resources, and capabilities [66, 16, 12].

We also identified that several factors (e.g., firm age, industry category, internationalization activities, government regulations, and policies) might influence managerial decisions on value creation and capture activities across borders [8, 9]. However, adopting a BM as a strategic and competitive tool provides useful pillars and—coping mechanisms for strategic decision-making and guidance on the initiatives a firm should take in its daily operations [67, 31, 35, 10]. In short, BMs are useful mechanisms that consider internal and external consistency and strategic choices, which may encourage managers to make better and holistic decisions as they internationalize [9, 10, 67]. Thus, our first proposition which states that SMEs that engage in BMI can internationalize better and more quickly, which may positively affect their internationalization success.

The second proposition stated that effectual decision-making logic in international SMEs strengthens BMI. The reason is that effectuation may support the creation and discovery of international opportunities [31, 1]. Moreover, SMEs may adopt effectuation in their BM as a coping mechanism or a strategy for thriving in and surviving market complexities [35]. Effectuation also fosters proper utilization and orchestration of firm resources and supports strategic decisions in favor of the future. In other words, decisions (e.g., regarding product or technology innovation, partners, and customers) are made intuitively to control future circumstances rather than predict them [53, 3]. These findings align with previous BMI studies that suggested that managers tend to proactively take initiatives that allow them to control market situations and trends, especially to capitalize on international opportunities [55, 42, 26, 24].

Our third proposition stated that causal decision-making logic in international SMEs strengthens BMI. As a cognitive and entrepreneurial activity, causation logic builds on a firm's ability to predict the future [4]. Managers in SMEs that are

approaching internationalization decisions using causation logic make more calculated and goal-driven decisions. Thus, they are more likely to leverage premeditated ideas and plans to modify BMI initiatives and value creation and capture mechanisms to explore or exploit business opportunities to increase profits in selected markets [8, 13]. As mentioned earlier, internationalizing SMEs may use causation approaches in their BMs to actively address uncertainty. They may do so through predictive-oriented planning. For example, managers make business plans or calculate market and competitive analyses to ensure and increase their knowledge of the status quo and ensure that expected returns are achieved [13, 4, 1]. Entrepreneurs with predictive capabilities, alertness, and knowledge about adapting their repeatable core processes are valuable in BMI. However, in inexperienced early internationalizing firms, some predictive approaches may be utilized as coping mechanisms [35] and adapted by entrepreneurs to stay ahead of market trends and identify latent customer needs.

In developing our fourth proposition, we argued that the higher the combined effectual and causal logic in an international SME, the higher the extent of BMI. In line with previous studies [10, 25, 39]), we considered that effectuation and causation could co-exist [59]. Furthermore, explorative decision-making (i.e., effectuation and causation logics) is valuable in BMI and international performance. BMI has unique advantages that are difficult to replicate, leading to lasting competitive and improved international performance advantages [7, 33]. Several previous studies found that various factors, such as technology innovation, market-entry decisions, location decisions, sustainability requirements, and digitalization decisions, affected SMEs' BMI when they entered foreign markets [8, 14, 17, 64]. Although it was not explored in-depth, another interesting addition to this study is that in our modern era (especially in times of uncertainty), different factors such as digitization, technological advances, analytical databases, and artificial intelligence are pushing firms to move ahead of their time [68]. Thus, more than ever, especially in the era of the "new normal," artificial intelligence and other digital and technological tools predict human behavior, leading to the cannibalization of customer information and firms regardless of their size. For the first time in human history, we can predict customer demand. Thus, predicting and controlling market economics, which leads to drastic BMI, and creating uncontested market spaces are areas that should be explored in future research.

Furthermore, because decision-making is a cognitive process centered around varying degrees of uncertainty, knowledge gaps, and/or decision-makers' bounded rationality, we argue that it is not an option for firms or business owners to stay redundant in continual anticipation of successful market outcomes [69]. Instead, entrepreneurs who—pursue growth via experimenting or engaging in BMI have the potential to transform their products and services, serve dynamic global markets, and survive uncertainty [70]. Entrepreneurs are also required to have flexibility in their decision-making (i.e., they should be able to make either effectual or causal decisions) [25] and implementation skills to swiftly and effectively tackle business decisions to reach implementable solutions for successful internationalization [8, 10]. Thus, because of the uncertainties in foreign market

frontiers, predicting and controlling aspects of a BM and the related processes are valuable in robust and effective decision-making.

#### 4. Theoretical Contribution and Practical Implications

International entrepreneurship is a novel field of study that researchers are continually seeking to understand. Scholars have established that decision-making provides an alternative theoretical means of describing and extending the understanding of international entrepreneurial actions [4, 3, 25]. Thus, by combining insights gained from BM changes and decision-making theory, we extend our understanding of the reasons entrepreneurs do what they do, especially when they internationalize.

First, the study contributes to the stream of IE literature that outlines the role of decision-making logic and business models in this domain. Previous studies have suggested that BMI and decision-making logic in the IE domain should be interlinked [10, 1]. Moreover, scholars have suggested that studies should examine entrepreneurial decisions and the role of human agency to understand entrepreneurial behavior [4, 31, 12]. Moreover, entrepreneurs' decision-making logic provides comprehensive insights into behavioral uncertainties, goal ambiguities, and their enactments in uncertain international markets, which has not been extensively explored [71, 12, 16]. The findings of our study demonstrated that, theoretically, decision-making and BMI are linked, which is relevant in understanding entrepreneurial behaviors and actions. Hence, the present study contributes to the IE and BM literature by focusing on the logics of effectuation and causation and highlighting the role of decision-making in the changes that occur through BMI. Thus, our study extends previous research [22] on international SMEs and the IE domain.

Second, we established that effectuation and causation could independently and jointly lead to higher BMI. Most previous studies centered on effectuation and causation, portraying entrepreneurial decision-making as conceptually and operationally opposite based on the assumption that entrepreneurs make either causal or effectual decisions [13]. In dynamic environments, the combination of causation and effectuation boosts an SME's innovative capability compared with the sole focus on planning or control of events [10, 24]. As recent studies have shown, this leverage effect may only be present in stable international environments [72].

The present study expands the previous research by demonstrating some factors that influence the extent of effectuation may also have a similar effect on causation in the same manner [50]. Thus, we contribute to the literature by shedding light on the relationship between effectuation, causation, and BMI in internationalizing SMEs. Our findings indicate that entrepreneurial behavior and choices influence the BM changes that firms make and affect how they approach international opportunities and foreign markets. We agree with previous scholars who suggested that linking BMI and decision-making [10, 39, 1]) is crucial in advancing the research because the entrepreneurial ability to master effective decision-making and tactics in response to changing situations

and apply their BM fosters unique competitive advantages and successful internationalization.

Third, we extended the theory by identifying the role of internationalization decision-makers as drivers of BM modification. We included decision-making logic in this study, recognizing that the BM that a company uses in one market may not be applicable in international markets. Moreover, in the internationalization process of firms, entrepreneurs may take different routes to implement or exploit opportunities [18, 8]. This study acknowledges that opportunity discovery and exploitation are pivotal and have a central role in determining SME decision-making on both individual and firm levels, which affects the BM. Therefore, a firm's decision-making mechanism determines the extent to which a BM can be adapted to accommodate market dynamics and/or uncertainties in the international market [73, 8, 1]. Notably, the findings of our study showed that entrepreneurs, in general, are becoming more aware of the value of BMI and that the implementation of BMI matters in gaining a long-term competitive advantage. Consequently, managers could navigate causal and effectual thinking and apply both pre-emptive and predictive strategies in their implementation activities (e.g., R&D, technological innovation, BMI, and experimentation) to ameliorate competitive and international performances [73, 55, 10].

Furthermore, we acknowledge that in practice, entrepreneurs are required to make favorable and knowledgeable decisions to facilitate BMI and company performance [35]. However, because of cognitive and structural constraints, making decisions that lead to BMI is an ambiguous, tactical, and risky task [35, 45]. The present exploration of entrepreneurs' effectual and causal logics and how their choices influence value appropriation has made a promising contribution to the international entrepreneurship research on BMI [1]. Thus, understanding the role of managerial decisions that affect firm operations and reactions to customer needs has provided in-depth insights into the dynamics of BMI [9, 12, 35]. Moreover, studies suggest that entrepreneurs should seek to create a dynamic business model that is capable of ensuring the smooth running of existing activities and flexible enough to be receptive to changes in the environment [19]. Entrepreneurs should also seek to develop competences to effectively manage the interaction effect of both logics (as organizational ambidexterity) in their decision making to ensure that they leverage contingencies that are fruitful for their business model [59].

Ultimately, we conclude that although a good BM is essential for international success [7], dynamic managerial capabilities can be further enabled by developing a nexus of decision-making, integrating customer needs, capitalizing on resources and capabilities, and leveraging network ties. These allow firms to develop a non-replicable and successful BM [7, 9, 17, 74]. Hence, selecting the appropriate BM to satisfy the firm's needs takes time, and managers need to make informed decisions to continually develop a viable BM.

In summation, effectual and causal logic does not have to be oppositional or mutually exclusive [25, 10]. Therefore, SMEs would be successful if they had a balanced perception of internationalization choices, embraced flexibility, experimented, learned from industry activities, and cooperated with partners or competitors [7, 57, 75]. Overall, executive

actions that control and predict may influence the BM design that a firm adopts to ensure long-lasting competitive advantages in international markets.

## 5. Future Research Directions

This study contributes to both business model and IE literature by examining effectuation, causation, and how the combined effects of these logics influence business model innovation as SMEs internationalize. However, given that most previous studies that explored decision-making and *BM* have been quantitative or experimental. Decision-making might be better understood using a qualitative approach. In-depth qualitative studies (e.g., case studies) comparing BMI elements and value dimensions or mechanisms could yield more finely grained information about the co-dependency of effectuation and BMI over time. Such studies would deepen our understanding of cause-and-effect relationships in both theory and practice due to a firm's strategic choices [15, 25]. We hope the theory-driven propositions in the present study pave the way for future empirical studies and the recognition that testing propositions using qualitative and quantitative data collected from internationalizing SMEs could yield fruitful results.

Another avenue for future studies would be to use empirical data to further test and verify our propositions in a contextual setting. Longitudinal changes (especially in the development process) in business models and the use of effectuation and causation could be examined in future studies. Similarly, many potential variables could be included in examining the relationships between decision-making logics and internationalization. For instance, the institutional home and host market environments could influence [75] the extent to which the two different logics were developed and utilized by internationally operating enterprises. The empirical data collected in a home market context with little institutional upheaval might be restricted in its generalizability across large and emerging markets. Thus, future studies could extend the conceptual model's testing and the relationships to a study based on empirical data collected in such countries.

Finally, although previous studies have acknowledged that effectuation and causation are valuable tools for opportunity exploration and exploitation and strategic choices [71, 30, 16], only a few empirical studies have investigated the linkages between BMs and SMEs' decision-making logic when they seek international opportunities. Future studies should investigate effectuation and causation as organizational ambidexterity and the effect as firms change and develop their business model over time or even in unique industrial contexts. Such studies could lead to valuable insights into entrepreneurial cognition and how entrepreneurs respond to international opportunities.

A complementary caveat in our study is the recognition that the "new normal" has led to new business approaches in our present-day and age. Individuals are bounded by rationality, but the use of digital tools and algorithms (e.g., artificial intelligence) has begun to blur these lines [68]. More than ever before, firms can predict and control market economics. Future studies could explore how the new normal, new technology, digitalization, and artificial intelligence tools may revolutionize the way we do business in the future.

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## **Publication V**

Asemokha, A., Munther, R., Torkkeli, L. and Saarenketo, S.

**International Opportunity Recognition and of Business Model Change in internationalizing SMEs**

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# **International Opportunity Recognition and Influence of Business Model Change in internationalizing SMEs**

## **Abstract**

Business models (BMs) and international opportunity recognition (IOR) have been extensively examined in the International Entrepreneurship literature. Yet, both studies (BM and IOR) have not been fully explored collectively, especially the influence of BM changes in small-to-medium enterprises (SMEs) internationalization activities. This study addresses the gap in the literature by examining how changes to BMs are linked to the recognition of international opportunities in SMEs. The study explores how SMEs approach and recognize opportunities and the drivers and linkages leading to business model change, especially for firms in the early phases of their internationalization. The empirical part of the study is a qualitative case analysis of four Finnish SMEs. The results suggest that recognized international opportunities do not necessarily lead to drastic changes in the business models of internationalizing SMEs. Rather, the existing value chain activities of the firm and the available resources may set the boundaries for the international opportunities recognized. Hence, most BMs changes tend to be incremental through BM extension on value activities rather than radical changes. Overall, SMEs tend to change their BMs in response to viable recognized international opportunities.

**Keywords:** SME internationalization, business model change, international opportunity recognition.

## **1. Introduction**

Small- and medium-sized enterprises (SMEs) pursue internationalization in the early stage of startup to grow, scale, and survive, especially in volatile and competitive environments (Sapienza et al. 2006; Child et al., 2017). Thus managers are required to recognize novel international opportunities, make expedient decisions in high-risk and uncertain environments (Andersson, 2011; Oviatt & McDougall, 2005; Hilmersson & Papaioannou, 2015), —as well as redesign their value offerings and operations to satisfy customers latent needs to facilitate profitability across borders (Andersson, 2011; Child et al., 2017; Clauss, 2017; Foss & Saebi, 2017; Teece, 2010). Research suggests that scaling new growth opportunities is dependent on employing appropriate business models, especially for early internationalizing firms (Gabrielsson & Gabrielsson, 2013; Child et al., 2017). Therefore, examining the business model of SMEs in their early internationalization phase provides a useful backdrop for exploring interesting contexts through which we can study organizational capabilities, processes, and approaches to new market opportunities (Sapienza et al., 2006; Mainela et al., 2014).

This study aims to provide insights into this context by exploring how the business model (BM) changes occur in SMEs as they recognize international opportunities. Recent studies illuminate that the role of opportunity recognition (Mainela et al., 2014) and business models (George and Bock., 2012; Saebi et al., 2017) as essential concepts for understanding internationalizing SMEs (Childs et al., 2017; Asemokha et al., 2019). Despite the relevance of both BM and IOR in the international entrepreneurial process, most studies have primarily investigated them individually and as separate studies. International entrepreneurship scholars have established the relevance of value creation delivery and capture (Saino et al. 2011; Asemokha et al. 2011) in exploiting and recognizing opportunities across borders (Oviatt McDougall, 2005; Autio, 2005; Cavusgil & Knight, 2015; Mainela et al., 2014). It is, therefore, important not only to understand these concepts separately but also how they relate to each other (i.e., their dynamics), especially in the

international context (Reuber et al., 2018). This study is timely because it sheds light on how SME managers approach international opportunities and the implication on their business model, especially when they start or intend to start internationalization activities. Secondly, the study also illustrates how SMEs change their BMs (either by innovating or simply adapting their BMs) and how those changes are implemented when recognizing international opportunities. We seek to find answers to the following question: *How changes to business models manifest or become reflected as SMEs recognize international opportunities?*

The findings suggest that the levels of change can vary and may be incremental or even dramatic over time (cf. Achtenhagen et al., 2013; Cavalcante et al., 2011; Child et al., 2017), depending on the immediate relevance of identified opportunity represented in client needs. Thus, the study allows us to examine how SMEs engaging in early internationalization recognize potential opportunities and how those identified opportunities plug into or affect the business model, thus contributing to both IOR and BM literature. This study found that the primary reason SMEs may adapt or change their business model is by an *extension* (i.e., by adding activities to an existing business model) of the existing business model. Cavalcante et al. (2011) point out that the primary motivation for a business model extension is to explore potential opportunities by broadening the existing business model to exploit the associated commercial opportunities which this affords.

The results also showed that recognized opportunities might show up by identifying latent customer needs and other sources of market information. Thereby influencing managerial actions towards rethinking and/or changing their business model by re-engineering their existing value proposition. To satisfy explicit or latent customer needs and gain commercial profits and benefits. SMEs investigated were also growth-driven, thus depending on the nature of the opportunities identified. The managers either leveraged prior experiences and networks and, in some cases, causally approached international opportunities based on their capabilities and resource fungibility. This juxtaposed approach to international opportunities thus had implications on the orchestration of resources when approaching international opportunities and has implications on the business model. The paper is organized as follows: first, we discuss the literature on business models, BM change, and IOR. After that, we introduce the research methodology, followed by the empirical analysis and the findings. The study concludes by outlining the theoretical and managerial implications, limitations of the study, and potential future research avenues.

## **2. Theoretical framework and background**

### *2.1 Business model and business model change*

A Business model is expected to reflect the logic that provides evidence on how a firm, through its key activities, is targeted towards creating, delivering, and capturing value for customers, partners, and the firm itself (Teece 2010; Achtenhagen et al., 2013; Hedman & Kalling, 2003). Designing a BM from the inception of a firm is vital, but maintaining a viable and efficacious business model is a more important and continuous task (Teece, 2010). Successful companies are those with the capability to update regularly and revise their existing business models to ensure that their strategies, products, processes, and services are successful and can keep up with the rapidly changing and competitive environment (Teece, 2010; Voelpel & Leibold, 2004). Studies attest that the long term success of a firm is dependent not only on the effectiveness and execution of the business model but on the ability to innovate (Clauss, 2017), adapt (Saebi et al., 2016), and even experiment (Chesbrough, 2010; Hennart, 2014) with their business models. They do this to capitalize on market opportunities mostly due to rapid changes in the global market environments (Linder & Cantrell, 2000).

As mentioned above, BMs are not static (Achtenhagen et al., 2013); instead, a repeating dynamic in BMs is changed. Thus, BMs involve regularly modifying, developing, and managing firm activities and strategies

over time as a response to market opportunities and threats to increase profitability and competitive advantage (Bucherer et al., 2012; Casadesus-Masanell & Zhu, 2013; Linder & Cantrell, 2000). The logic for improving a BM involves making modifications or alterations to a company's activities over time (Cavalcante et al., 2011; Onetti et al., 2012); this is because the BM is considered a tool for creating, delivering, and capturing value (Achtenhagen et al., 2013; Teece, 2010). Changes to a BM occur through versatile approaches such as experimentation (McGrath, 2010), re-creation, extension, revision, and termination (Linder & Cantrell, 2000; Cavalcante et al., 2011). *Creation* refers to the transition from a business idea into a functioning BM; *Extension* refers to adding or expanding the core processes; *revision* means removing and replacing something from the BM. while *termination* refers to ending the non-functioning processes from the BM.

Although studies suggest that various market uncertainties may propagate changes occurring in business models, changes in customer demand, competition, or even technological advances (Gabrielsson & Gabrielsson, 2013; Onetti et al., 2012; Saebi et al., 2016). Business models perform two crucial functions first, enabling stability or seconding, enabling flexibility to allow for change or redesigning a firm their existing process, value proposition, and other constellation to generate or secure a sustainable competitive advantage (Wirtz 2011; Cavalcante et al., 2012). Business model changes may occur in diverse ways. Changes to a BM tend to occur through various modifications, and managers can implement such change, e.g., through adaptation, innovation, or even experimenting with the business model (Saebi et al., 2016; McGrath, 2010). For example, a company may change its business model as a reaction to external uncertainties or triggers, and firms may change their core processes and adapt to their operations to keep balance with the environment (See Bucherer et al., 2012; Cavalcante, 2014). While in other cases, business model changes may be internally engineered or motivated by the organization's need to disrupt market competition and enhance value creation. Thereby, making changes to the value proposition improves customer satisfaction and mutually improves profitability and competitive advantage (Asemokha et al., 2019).

The extent of BM change that SMEs undergo varies in different enterprises (Demil & Lecocq, 2010; Teece, 2010). Regardless of the intensity (incrementally or radically) of change (Cavalcante et al., 2011; Khanagha et al., 2014), investigating how entrepreneurs organize activities that lead to change is relevant in understanding the value chain logic of a business (Amit & Zott, 2010; Aspara et al., 2013; Claus, 2017; Osterwalder & Pigneur, 2010). Although not all change initiatives affect a business model, business model changes that affect the firm's core organizational processes count as a business model change. (Cavalcante et al., 2011). Therefore, business model changes function as a unique and overarching fabric through which companies can adjust various elements in their value chain for specific functions and provide pathways for creating and delivering value to better leverage new opportunities and gain competitive advantage. Making it more difficult for competitors to copy (Bucherer et al., 2012)—as such, modifying the business model is considered incredibly valuable during times of instability and intense competition. It can offer novel ways to differentiate the company (Johnson et al., 2008).

## 2.2 International opportunity recognition in SMEs

IE research emphasizes and explores "how" to internationalize and "why" to internationalize—raising interest in why and how opportunity opportunities are created and exploited, especially in foreign markets (Oviatt and McDougal, 2005; Zahra & Dess 2001; Zahra & Gravis 2000 in Zahra et al. 2005). Despite the widely acknowledged role of the opportunity concept in entrepreneurship research, there is still a lack of focus and varied perspectives on investigating the origins of opportunities. Most of the studies are conceptual and do not include many empirical papers (de Jong and Marsili 2010). We also recognize those semantics exist. There is a need for more clarity in distinguishing opportunity as a concept (Ardichivili et al., 2003) and its contextual applicability, especially in IE research (Reuber et al., 2018). Extant studies (e.g., Vesper 1980; Timmons 1990) suggest that the avenues through which entrepreneurs recognize are as

a result of a deliberate or systematic search, careful strategic planning, or through serendipity (Gaglio & Katz, 2011; Alsos & Kaikkonen, 2011; Javadian and. Singh, 2018). Or by being alert (Kirzner, 1997) and recognizing the value of information that they receive (Shane, 2000). Other studies suggest that the recognition of opportunity can be identified systematically, from the inception of the business and idea search (Chandra et al. 2009; Hills and Singh 2004) or informally when business is started after a need is identified (Hills and Singh 2004). This paper focuses on international entrepreneurial opportunities; thus, we also consider the definition by Oyson and Whittaker (2015, 309) that: "entrepreneurially discovered or created situation that spans and integrates elements to multiple national contexts in which new goods, services, raw material, markets, and organizing methods are conceived as having a potential for exploitation through entrepreneur-led action to form and transform them into new means, ends or means-ends relationships." This definition also considers the role of the individual agency's responsivity and actions in recognizing and creating and exploiting discovered opportunities.

Stevenson et al. (1985) suggest that a valuable characteristic of a successful manager or entrepreneur is the ability to recognize the right opportunity properly. Entrepreneurial characteristics also influence the opportunity recognition process (Ucbasaran et al., 2008). Entrepreneurial alertness, in general, is necessary for a successful opportunity recognition process, as those who are not alert do not read the current market environment in the right way. In contrast, alert entrepreneurs understand the cues that the changing environment offers and are always aware of the current situation by constantly assessing it (Gaglio and Katz (2011). Other studies also support that extensive opportunity recognition is not dependent on exceptional creativity levels. Rather, opportunity discovery and recognition can result from entrepreneurial alertness, capitalizing on knowledge and information from experience in the field, network ties, changing customer needs, market information, and even non-work-related events (Ardichvili et al. 2003, Ucbasaran et al. 2008). The commonly discussed underlying the international opportunity recognition process are knowledge, network structure, human capital (see, e.g., Ardichvili et al., 2003; Chandra et al., 2009; Kontinen & Ojala, 2011).

Creating a successful international venture is highly influenced by the opportunity creation, recognition development, and/or evaluation process (Ardichvili et al., 2003). Thus, the internationalization of new ventures is fostered through access to foreign market knowledge, market resources, capabilities, and recognition of valuable opportunities and constraints (Oviatt and McDougal 2005). Nonetheless, firms face challenges in their bid to capture recognized opportunities (Guo et al., 2016). Opportunity recognition is an essential aspect of the venture creation process (Chandra et al., 2009; Singh et al., 1999), whereas a path-dependent opportunity development process underlies the international expansion of rapidly and gradually internationalizing enterprises (Chandra et al., 2012). Thus, the entrepreneurial capability to recognize international opportunity is considered a valuable initial step in the internationalization process of a firm that would benefit from further exploration (Reuber et al., 2018; Venkataraman, 1997). An entrepreneur's ability to recognize international opportunities is the initial phase in a continuing process; it includes evaluating the opportunities recognized and their actual Development (Ardichvili et al., 2003; George and Bock 2011; Mainela et al. 2014). Some studies highlight that not all recognized opportunities create superior performance; instead, entrepreneurs are required to be proactive, take appropriate actions and exploit recognized opportunities to gain competitive advantage (Ketchen et al., 2007; Ireland et al., 2003; Guo et al., 2017). Thus, recognized opportunities reflect search and identification efforts of business opportunities, which do not necessarily gauge that the recognized opportunity was exploited (Guo et al., 2017).

### *2.3 Business model changes and the role of international opportunity recognition*

SMEs continually engage in entrepreneurial activities by scanning the environment, listening to customers, and exploring various possibilities aimed at recognizing opportunities and generating value (Zucchella et al., 2011; Al-Aali & Teece 2011; Ardichvili et al., 2003), which is a core function of BMs (Clauss, 2017; Osterwalder & Pigneur, 2010). Thus, entrepreneurs seek new business opportunities to create and deliver value for stakeholders in prospective ventures (Oviatt & McDougall, 1994; Ardichvili et al., 2003). The decisions of entrepreneurs may also have a vital influence on internationalization opportunity recognition (Harms and Schiele, 2012; Child et al., 2017). For example, an entrepreneur's decisions may influence entry mode choices made when expanding international operations or even responding to varying conditions and requirements of the international market due to varying foreign market requirements and contexts (Childs et al., 2017; Onetti et al., 2012). Modifications made to business models are mainly targeted towards developing and managing a company's activities and strategies over time in response to market opportunities and threats, to increase profitability and to improve competitive advantage (Bucherer et al., 2012; Casadesus-Masanell & Zhu, 2013; Linder & Cantrell, 2000). Small ventures can benefit from various opportunities and network links to access external market knowledge and align their BMs to satisfy foreign market requirements and demands (Childs et al., 2017; Oviatt & McDougall, 1994; Reuber et al., 2018). Moreover, BMs that link SMEs' decision-makers and network partners are incredibly valuable for fostering credibility and legitimacy and facilitating internationalization (Child et al., 2017), as both domestic and international network relationships can underlie international opportunity development. Thus, business models can be utilized as a tool to support a firm's competitive strategy, which is associated with innovation activities, competitive competencies, and network ties (Asemokha et al., 2020).

Johnson et al. (2008) highlight that from the outset, new business models do not always look attractive to stakeholders. Thus managers would be required to make an effort to develop a viable roadmap "to see past the borders of what is and into the land of the new" [Pg. 60]. This can be achieved by realizing that success starts by not thinking about business models at all but by prioritizing the opportunity to satisfy a real customer who needs a job done—secondly, construct a blueprint of how the company aims to achieve profitability. Thirdly is to compare the changed model to the firms existing model to evaluate how much change is required to capture the identified opportunity (ibid). Therefore the capability to change the BM enables managers to take advantage of new opportunities that create value and decrease the risk of inertia to change, which tends to be common when a specific BM has been successful for an enterprise for some time (Achtenhagen et al., 2013). Studies illuminate that lack of business adaptation usually derives from doing things for too long in ways that used to be good. Still, businesses can "fall victim to the rigidity of their business model" (Doz & Kosonen, 2010, p. 370). BM changes are usually driven by discontinuities and distractions, and higher global competitiveness (Doz & Kosonen, 2010). Bucherer et al. (2012) suggest that companies make changes in their BMs in reaction to potential threats or opportunities. For the majority of the companies studied by Bucherer et al. (2012), external opportunities led to BM changes (e.g., changes in technology). According to Doz and Kosonen (2010), by developing three capabilities (strategic sensitivity, leadership unity, and resource fluidity), companies can strike a balance between agility and a rigid BM at the time of changes. Muller and Vorbach (2015) also add that the development of capabilities is crucial in recognizing the need for BM changes and making those changes work.

### 3 Methodological approach

Derived from above, in order to answer to the calls of fresh insights and in-depth research into matters of opportunity recognition (Andersson, 2011; Reuber et al., 2018) and business model changes (Childs et al., 2017; Foss & Saebi, 2017) related to the internationalizing of SMEs, we consider the 'how' question of BM change in the internationalization of SMEs as most appropriate to guide us towards a deeper understanding of the chosen phenomena and to generate both abundant descriptions and explanations (Eisenhardt, 1989). Hence, by adopting a qualitative case study approach, we reflect findings on existing theories as we identify new insights in the light of empirics (Piekkari et al., 2009; Saunders et al., 2009). Furthermore, conducting a multiple case study enables the usage of a combination of data sources as well as the exploration of a phenomenon in its naturalistic context (Piekkari et al., 2009) as the evidence generated from different sources seeks to be plausible and reliable (Baxter & Jack, 2008). This study examines four SMEs to analyze BM in conjunction with IOR within and across each case and their situation and to draw upon their similarities and differences (Piekkari et al., 2009; Yin, 2003, 2003). In short, adopting a multiple case study approach, we embrace a more detailed description in the theoretical Development (Eisenhardt & Graebner, 2007) of BM and IOR literature from the context of the internationalization of SMEs.

#### *Research context and Case selection*

The focal and empirical context of this study is on internationalizing Finnish SMEs with varying internationalizing activities and involvement originating from the cleantech sector. Cleantech (Clean technology) encompasses products, technologies, techniques, and services that cause less damage to the environment or less consumption of natural resources in their production process or the use of other alternatives (Kachan and Fugere, 2013). Growing studies in the field claim that Cleantech embodies solutions that minimize or eradicate negative ecological impact and enforce the efficiency and more responsible use of natural resources (Kachan and Fugere, 2013). By environmental standards, a clean technology product is said a better product than an alternative product or service in general with corresponding characteristics of use (Cleantech Finland, 2015).

The interest to study cleantech firms (see Table 2 for a descriptive summary of the case companies) is due to their novelty and highly emerging category in academics and practice, as well as the sector's global market potential being above \$250 billion with the expected exponential growth up to five times greater in the near future (Anil, 2011; Cleantech Finland, 2015). Moreover, in particular, Finnish cleantech has been gaining increasing global prominence (WWF, 2014): in 2008, the turnover of the Cleantech Finland business was around 18 million, and in 2013, the turnover was already approaching 26 million (Cleantech Finland, 2016). Over a third of Finnish public R&D funding is currently going to the cleantech sector, which indicates massive investment in it in Finland (Cleantech Finland, 2016). The present research is spurred by the need for more knowledge about the cleantech context in situ, and as we recognize SMEs under the cleantech umbrella possibly differing from more traditional SMEs, we limit the context of the study to not focus on the sector or the context of cleantech itself. Rather, we consider that exploring cleantech SMEs provides an empirical context that is both international and under-researched (Asemokha et al., 2019). This in mind, we have applied a more general criterion for the case selection and phenomenon under exploration: we ensured the case companies to 1) were SMEs (align with the OECD (2016) definition of SMEs), that is, to have fewer than 250 employees; 2) to be operating in the same industry and geography. i.e., the cleantech sector and were chosen from the Finnish cleantech cluster/network; 3) to have started their internationalization process or had the intention to internationalize in the near future; 4) to provide access to and interviews from a knowledgeable person (i.e., a CEO) in the firm in order to gain credible information on the firm's decisions and operations.

### 3.1 Data collection

The primary data were collected through theme-centered or semi-structured interviews with key informants in the companies and aimed to identify meaningful notions according to the research objectives that had been generated (Eriksson & Kovalainen, 2008), still offering the advantages of the flexibility of an interview process in terms of repeating a question and clarifying by the interviewer, as well as correcting by the interviewee (Welch & Piekkari, 2006). As the early international activities and BM are subject to change over time, the interviewees had to know enough about their companies' earlier activities and operations. The interviewees were a purposefully chosen sample of company founders or managers and selected to obtain sufficient and applicable information relevant to the firms' international activities decisions and processes for internationalizing cleantech SMEs. This so-called elite sampling means that only the persons who are expected to know the most about a subject are chosen (Tuomi & Sarajärvi, 2003). It fosters data collection from "experts" with knowledge, experience, and the ability to give information specific to the researchers' interest and theoretical clarification (Patton, 1990).

The interviewing process was focused on two main themes and other generic supporting areas of additional information (see appendix). The first theme covered in the interview focused on the company's existing BM and its changes over time and the reasons for possible adaptation. The second part of the interview centered on the internationalization process and the ways the company has recognized opportunities, with a focus on early/initial opportunities. The interviews were conducted via phone and Skype and were held between October and December 2016. The length of the interviews varied between half an hour to an hour, and at the time of the interviews, the interviewees were the respective CEOs of the enterprises. The interviews were recorded, transcribed into text, and translated from Finnish to English by a professional transcribing and translation service. The interviews were complemented with secondary data from archival sources, academic material, reports, and web pages from the firms. The material was used for triangulating and checking the reliability of the statements and timelines of firm activities.

*Table 1. Data Sources and Participants Information*

Company	Informant	Background and Experience	Duration of interview	Secondary data
<b>Alpha</b>	CEO	First 20 years' experience in Nokia, since 2003 serial entrepreneur, and has a total has owned five companies (abroad and in Finland).	30mins 5 pages	Webpage
<b>Gamma</b>	CEO	Worked in technical research firms for a few years, and has over ten years' experience in a renowned subsidiary of a Finnish energy company (Wartsila) in Asia.	40Mins 6 pages	Webpage
<b>Delta</b>	CEO	CEO of the company initially started in the company as a sales director. Experience comes from the ICT and industry, sales, and product management.	52 Mins (8 Pgs)	Webpage
<b>Epsilon</b>	CEO	Background in automation and energy technology. Some experience and extensive involvement, international sales, and customer relationship.	46 Mins 8 pages	Webpage

### 3.2 Data Analysis Process and Case Descriptions

The interviews were recorded, transcribed into text, and translated from Finnish to English by a professional translation and transcribing service. In order to then gather, organize, and analyze the data, NVivo, a computer-assisted qualitative data analysis software (CAQDAS). The use of CAQDAS significantly supports the process of interpreting research outcomes, having one significant advantage: the ability to cope with a large amount of data in a fast and reliable way (Roller & Lavrakas, 2015). Most importantly, "if used systematically, it increases transparency as well as methodological rigor" (Saunders et al., 2009, p. 514).

Firstly, the content of each case was thoroughly read and summarized in MS Excel, and each summary was done so that it corresponded to each of the interview questions. We also summarized the data from the interviews to get clear and all-inclusive inferences from interview data. NVivo was implemented to categorize the data further. In NVivo, the content of the interviews was coded thematically, meaning tagging, and labeling the content into units (Miles & Huberman, 1994). The way to code the themes can be called "selective coding," whereby the intention is to identify the main themes and their relation to each other (Saunders et al., 2009). Miles and Huberman (1994) endorse creating a "start list" of codes related to the theoretical part of the study. In other words, the initial codes were designed beforehand to correspond to the initial research questions and frameworks. This was followed by the actual coding of the interview transcripts, and more specific codes were created along the way. We also noticed new and emerging themes and codes for validity reasons during the coding process. The transcripts were re-read to ascertain that no valuable themes or data were left out of the interviews. Template analysis was adopted to code and categorize collected data thematically (Saunders et al., 2009). This method enabled finding both the specific results for one case company, and most importantly, making comparisons between the cases with different codes. The final codes were structured into hierarchical order to find relevant patterns in the interviews.

*Table 2. Summary of Case firms*

<b>Companies</b>	<b>Founded</b>	<b>Category</b>	<b>Employees</b>	<b>Customers</b>
<i>Alpha</i>	2006	Solar power	5	B2C & B2B
<i>Gamma</i>	2008	Power quality	23	B2B
<i>Delta</i>	2001	IoT technology	9	B2B
<i>Epsilon</i>	2007	Recycling technology	5	B2B

## **4 Main Findings**

### *4.1 Case firms and reflections on Business Model Changes*

*Alpha* focused for eight years on the consumer markets made some significant changes by shifting its focus more towards B2B solutions due to the domination of Chinese companies in the consumer markets, who were offering products at more affordable prices. The company depends on diverse networks and partners, such as design, manufacturing, and marketing. The firm uses two main earning logics: initially by direct selling of consumer products, then extended offering services, e.g., consultancy and providing sub-parts for products. However, *Alpha* included Services to their model or later for added value and profits. *Alpha*'s technology and the product were focused on quality, simplicity, reliability, and design. However, continuous improvement is prioritized in their internal processes to ensure production and delivery of superior quality products to minimize extra costs from maintained or returns due to customers in distant international markets. Fairs and seminars. Networking was also highlighted to be vital for channels for promotion and marketing activities.

*Delta* started as a small company focusing on subcontracting and software development projects, from where they have also moved to produce their hardware products. The company started by scaling its offering and providing software development projects for its customers. The company is focused on customer projects and selling their products company was focused mainly on the local market (Finland) and neighboring country, Sweden. They also focus on expanding its international operations to several countries in Europe. *Delta* initially focused on subcontracting and software development projects; consequently, the company-encountered cases where its customers also needed hardware, then they extended to also producing their hardware products. The company sells for the hardware and from the software as a service (SaaS-model). The earning logic is adjusted based on their agreements with the customer, and products were sold as a whole package with a monthly fee, which includes consulting, and other professional services. New international opportunities and customers were identified via direct contact, conferences, and trade

fairs. Delta focuses on developing intelligence to the machines, and there is to the unique applicability of their product and suitability in the harsh environmental conditions. Employees' expertise and specific capabilities are of importance, especially in sales and marketing activities inside the company. Delta showed that flexibility in willingness to make changes in their internal processes is valuable, especially in seeking international opportunities across borders.

*Epsilon's* main product is pyrolysis machinery, which turns organic waste into oil. The company has searched for some potential international markets and customers in Sweden by visiting them and contacting them directly. Epsilon has also leveraged relationships and personal networks (e.g., Latin America), and other existing contracts. The company intends to work alongside agencies to look for more customers and explore more internationalization options in the future. Initially, the company started developing machinery for treating electronic waste. However, their initial product was considered ahead of the time at the time of the establishment of the firm. The company shifted its focus to developing a different product (pyrolysis product), for which they recognized a demand. It was interesting to note, however, that the initial product is still maintained in the background of the operations, and the company hopes that in the future, when for instance, the legislation towards cheap labor improves, the market would become ready for the product. Employees' capabilities and cultural advantages (e.g., employees originating from Latin America) are leveraged towards market capture in specific markets. However, the company adopts efficient to use and environmentally-friendly in their technology, safety of employees and stakeholders. More so, due to limited capital, Epsilon has not been able to implement some of their ideas for revenue. However, they are currently focusing on the direct selling of the product and services. Epsilon depends on their networks and contacts to augment in areas of limited resources and capabilities. The company gains publicity and opportunities with potential partners and customers *via* fairs, international events, and conferences. Word of mouth through TV, newspapers, and radio, and other portals are also important channels to reach customers

*Gamma* was Initially established to improve the quality of renewable energy. Gamma operates in a niche market; thus, the company identified early that it needed to find potential customers abroad. Gamma's first two international breakthroughs were in Asia and were based on the founder's other personal and existing networks. The company was initially planning to offer solutions for improving the quality of renewable energy but shifted its focus to other industries' energy quality solutions, in order words, to other customers. Another reason for the change was that the initially targeted market was not ready for their product. In addition, the company has widened its offerings and now offers also maintenance service, not only for its own but also for competitors' products. This service was added due to customers' demand, which also demonstrates that the company is focusing on customers' demand and thus on its customer-centric processes—Gamma's collaboration with partners and stakeholders to support their firm activities and international operations. The company used direct selling channels and works closely with distributors, and the company offered the technical solution and support and the distributor to handle other operations. Gamma prioritized, being experts in the field, is valuable for the company with a keen focus on optimizing their process and satisfying customer needs.

Table 3. The change in business model elements in the case companies.

	Value Proposition				Value Creation				Value Capture	
	Offerings	Customers	Channels	Customer relationships	Technology	Partners	Process	Competences	Revenue Model	Cost Structure
Alpha										
Gamma										
Delta										
Epsilon										

#### 4.2 *Recognized international opportunity and significance to changes occurring in the business models*

##### *International opportunities were manifest by identifying unsolved and latent customer needs*

The firms recognized a need in the market and were willing to modify their business model when they identified an unsolved customer need. A typical reflection of this was when Delta encountered situations where its customers needed additional hardware. The company widened its offerings by making relatively significant changes to its existing offerings (projects) and broadening its product selection. Delta modified its internal processes to be ready to react to international opportunities. They did so by focusing on improving their value proposition, *things we are good at, eliminating inefficient processes, and actively searching for new international market opportunities and careful selection of relevant market opportunities*\_Founder Delta.

Similarly, Alpha changed its value proposition, and the company re-focused its product and value offerings (mainly on system designs related to solar energy). The CEO of Alpha mentioned that before making any product-related decisions, they had to find out the market need, the usage situations, and the operational requirements. Thus, the companies recognized opportunities pre-emptively by sensing the need and changes in customer demand and went further to carefully plan and evaluate recognized opportunities based on the resources available. Although aware of the relevance and potential benefit of international opportunities, the managers demonstrated restraint in exploiting them due to the consciousness of their inherent capabilities and resource constraints; thus, they prioritized potential opportunities expediently and as the need arises. Company Alpha, for example, also highlighted that they put in extra focus, especially in R&D, marketing, sales, and outsourcing of manufacturing activities to other channels as avenues to exploit such recognized opportunities, which may be difficult to tap on.

Furthermore, in response to growing market demand, we identified that adding a new product or service to the firms offering brought about new opportunities. Here a unique situation was observed what we consider a "double-edged process" because the entrepreneurs seemed to be willing to approach business model changes in iterative cycles with recognized opportunities. For example, Epsilon mentioned the willingness to leverage new opportunities if the opportunity is feasible continuously.

##### *International focus and active search for viable opportunities to foster scalability.*

Due to the small size of the firms' home market, they would benefit from intensifying and extending internationalization activities to promote the growth and scale of their products and services on a global scale. Thus the companies expanded their efforts to scale their business models by exploring new markets and customer base in the international markets. Gamma, for example, adopted a consistent and systematic search to figure out the best markets and industries that best fit its products. They did so by searching for possible partners and by creating custom profiles that determined the partners' requirements—revealing that some of the preliminary information needed for international operation or customer acquisition still comes from the network of partners, directly or indirectly. Another example is Alpha's initial opportunity identification and approach to market entry. An example of how the opportunity was identified and created was through a collective effort by all the individual employees to seek potential clients, after which all ideas were collectively evaluated in terms of the proposed value of the opportunity, resources, and if the idea was interesting for the company. Delta also emphasized that it was worthwhile to search for suitable partners and agents in target markets and focus on direct contact. On the other hand, Epsilon initially focused its business on developing its presence in the domestic markets. Although it had not yet made actual international sales, it had already begun to receive requests for quotations. It had begun negotiations with prospective clients from many countries for future business. Overall the firms made an effort to seek new market opportunities based on the realization that the domestic market was becoming saturated relatively fast and thus began incrementally started seeking growth opportunities from international markets.

#### *Leveraging on prior experience and networks to speed up internationalization*

The companies relied on their contacts, networks and/or agents in their initial IOR approaches and then later included active searches and brand building when seeking new opportunities abroad. Based on the responses, strong network relationships were valuable in searching for potential customers and international opportunities, mostly at the beginning of firm operations. The firms leveraged their networking capability and strategic relationships to speed up their initial internationalization activities. For example, Delta mentioned that it capitalized on international opportunities via its growth programs from external agencies to grow in international markets. Gamma also highlighted that they engaged in brand development, which is executed via trade fairs and social media activity and created awareness through winning competitions. Networking capabilities and leveraging support from networks fostered the business processes in both the domestic market and, most importantly, in the international target market. For example, through employees' joint efforts, Alpha sought new international opportunities and entered new international markets through active and deliberate market-specific investigation. They also recognized and accumulated knowledge and their existing partner network relationship and stakeholders around the world. Social and personal networks were also a useful avenue through which the companies sought to facilitate international expansion.

#### *Opportunity recognized fostered marketing efforts and development of new channels for growth in the foreign market*

Considering the novelty of cleantech products and services, the firms also sought customers, visibility and pivoting their technology to potential customers. More so, Customer acquisition and opportunity identification were based on the recognition that there are growing opportunities, and the international markets were changing quickly; thus, adapting rapidly to these changes (ideally faster than the competitors) was important. However, entrepreneurs faced challenges in meeting the international market requirement. The Firms were sensitive to customer requirements and needs, which also influenced the business model adopted in international markets. Other avenues for seeking new markets had been via fairs and seminars and cooperating with firms organizing growth programs. The firms put extra efforts towards gaining new potential clients and agents through industry cluster activities, marketing, conferences, events, internet platforms, and different publication outlets to gain market potential on a global scale. By participating in such social events and activities, the firms were able to collaborate and share knowledge and information between firms within similar clusters, which have implications on the business model and favorable for creating visibility and awareness in terms of potential customers. This is in line with Zahra et al. (2014), which suggests that Knowledge spillovers within and across industries are beneficial towards providing valuable clues about relevant types of innovations that could be developed and commercialized, primarily through entrepreneurial and network creation activities.

#### *New industry, new customers, and tactical experimentation in the international market*

The founder's approaches to business opportunities were influenced by tactically experimenting with their business models. For example, Epsilon adopted a strategic approach by tailoring its services to customers to ensure optimal productivity.

*"Development is nevertheless quite a long-term thing, so we have to have some fixed point to follow.*

*If we keep shifting from one thing to another, we will never get anything done\_ Epsilon CEO.*

Alternatively, due to resource constraints, the managers portrayed that recognizing a potential opportunity does not necessarily mean that implementing the idea will be successful or even lead to superior performance. (Guo et al., 2017). For example, Alpha's CEO highlighted *that for a small, hungry company, it is often hard to say no. "Then you do things, with a mindset that is too positive, and then you get burned"*. Thus, the company has a strict filter for the opportunities they were willing to exploit. More so, due to the newness of the industry the companies were operating in, the small size of the firms, and limited resources, the SMEs unveiled a likelihood to be averse to risks. As well as the willingness to approach new market prospects regardless of the lucrativeness opportunity.,

Gamma stated that: *"if our revenue was 100 million, then we would be able to handle projects worth 5 million, but if our revenue is 5 million, then a project worth of 5 million is too big a risk"*. Likewise, Epsilon stated that *"there are always those kinds of things where you instantly have to say this is too big for us."*

These statements are in line with empirical studies that confirm that except appropriate action is taken, SMEs may not always exploit recognized opportunities. In the same vein opportunity recognition, does not always lead to superior performance (Ireland et al., 2003; Guo et al., 2017).

*Out there in the markets, there are a lot of opportunities that are such big projects that our financial resources are not able to handle them or it's not sensible to try that, so even though we have the functioning technology...it might not make sense because the risks related to those projects are so great that it doesn't make sense. (Gamma CEO).*

*Value creation and proposition reconfiguration and renewal in capturing opportunities*

Furthermore, we identify the role of the value proposition (e.g., technology) and the need to innovate or change existing technology or service as an important avenue through which opportunities are leveraged. For most high-tech startups, especially in highly competitive industries like cleantech, the need and complexity of the technology behind the firm's operations is considered the factor that influences the scalability of the BM due to the unique requirements of customers. Hence, it could be seen that the case firms were willing to supplement and changes (although in some cases they suspended commercialization of the original product/service fixed) or even create totally new products in order to capture new market opportunities that were recognized in tandem with their initial value offering (one central point being the technology, which thus creates limits for the firm's opportunities).

*"...Our technology and process is not the simplest. So you cannot keep shifting all the time".*

*We have found our markets elsewhere and, of course, we have not abandoned this original, noble idea but, this kind of a growth company, we need to get revenue and income so that we can keep on growing and, the solutions related to connecting renewable energies to the grid could not give us that at the beginning". (Gamma)*

## **5 Discussions**

Deliberate search for new market opportunities was a common tactic the firms adopted to create visibility and market awareness through public forums to gain new markets. For example, value marketing, exhibition, and trade activities, either via agents or with sales partners, are valuable for international operations and seeking new opportunities. This shows that the entrepreneurs usually sense opportunities from customer moves and demands, adding that customers and other stakeholders tend to be valuable suppliers of information in international opportunity sensing, recognition, and identification (Al-Aali and Teece 2014; Zucchella et al., 2018). Identified market opportunities were largely information from contacts, networks, relationships, especially when seeking new customers abroad. The findings support studies that suggest that exploiting networks and other management capabilities foster the identification of opportunities (Zucchella et al. 2018; Guo et al., 2017; Child et al. 2017; Onetti et al. 2010). The firms also capitalized on the industrial category of (clean technology) and the unique value proposition that clean technology offers to customers to increase their visibility and profitability across borders. Network relationships, deliberately searching for new market opportunities, were helpful towards creating visibility and market awareness through public forums to gain new markets and the size and influence of stakeholders. Funding from or by investors such as venture capitalists influenced the willingness to internationalize or adjust their business plan and thereby the BM to satisfy investors' demands.

BMs provide stability for firm development and commercial activities and the flexibility to accommodate change, with the latter encouraging the recognition, exploration, and seizure of opportunities (Cavalcante

et al., 2011). Studies highlight that BM change may foster modifications to a firm's activities over time through innovation, value creation, and adaptation (Clauss, 2017; Osterwalder & Pigneur, 2010; Reuber et al., 2018). Similarly, the concept of opportunity is broad, and scholars suggest the need for in-depth studies in explaining how entrepreneurs search and recognize opportunities from foreign markets, especially in international contexts (Ardichvili et al., 2003; Chandra et al., 2009; Kontinen & Ojala, 2011; Reuber et al., 2018). In this study, we looked for themes and codes by focusing on the most commonly introduced factors such as knowledge, network structure, and deliberate search, along with different entrepreneurial characteristics or behavior (e.g., Ardichvili et al., 2003; Chandra et al., 2009; Kontinen & Ojala, 2011). We also considered factors not as commonly mentioned in the opportunity recognition literature, including marketing efforts such as trade exhibitions (Konal, 2013; Shane & Venkataraman, 2000), the value of the entrepreneurial opportunity (Kirzner, 1973), access to resources, and the willingness to exploit a specific opportunity (Peiris et al., 2011). In our analysis, we took into consideration the three main components of business models (value creation, value proposition, and value capture) to explore the dynamics of SME business change and how it influences SMEs' IOR. Based on our findings, we note that, from the three main BM components, the value proposition has been the most adjusted component in all of the cases: more specifically, the components "offerings" and "customers or markets." We also identify that reaction to potential threats and opportunities were found to drive changes to the BM. For example, difficult competitive situations, low demand, and a transforming market were seen as threats, while customers' unmet needs were seen as opportunities.

The findings indicate that most of the changes have been occurring in the "value proposition" component, and more specifically, related to the "customers" and "offerings" subcomponents. The least amount of changes was made to the value creation component. This type of change can be described as a business model extension (Cavalcante et al., 2014). For instance, new customer segments, revenue models, or services were added into operations. In other words, it was evident that the companies are willing to adjust other BM components but not necessarily make massive changes in their value creation component. We presumed this to be so because the companies are technology-oriented. Therefore changing the core technology was a more daunting and challenging task when compared to the offerings in general. Also, owing to the novelty of the industrial cluster or category (Cleantech) and the technology as it was a competitive advantage for the companies; thus, the extent of change to their technology was more incremental, especially in the value creation component. Another implication for this seemed to be that the firms prioritized their technological advantages (cleantech) by operating with their initial BMs, then subsequently sought potential market opportunities to suit the BMs. Most of the implemented BM changes were targeted towards profitability and business growth rather than to disrupt the market activities.

Furthermore, the firms recognized new opportunities by identifying satisfying latent customer needs based on accumulated information and customer feedback. However, BM changes were reactive and incremental. Managers changed their business models reflective of the nature of opportunity recognized, availability of resources to exploit the associated commercial opportunities modified their business model. Thus changes made were not necessarily evident in all of the elements of the BM simultaneously. These results suggest that firms may reactively adjust their BMs when they encounter market opportunities or even potential threats from their environment (cf. Saebi et al., 2016). Likewise, cleantech SMEs operate in a niche market and have already invested a lot in the existing technology may also be the underlying reason for minimal BM changes (Asemokha et al. 2019a).

Therefore, most companies are more willing to explore opportunities that suit their operative BMs by extending (adding activities to an existing business model) the business model, thereby mainly finding and seizing the international opportunities suitable for their BMs. Even though some of the companies mentioned that they contemplate acting the other way around, in some parts of the BM, the value created, especially the core technology, has still limited the extent of the IOR. Thus, for the case companies, the BM acts as the limitation creator by which potential opportunities are recognized. This in line with studies that

argue that entrepreneurs usually sense opportunities from customer moves and demands, adding that customers and other stakeholders tend to be valuable suppliers of information in international opportunity sensing recognition and identification (Al-Aali and Teece 2014; Zucchella et al., 2018). The data further suggested the companies did not make radical or innovative changes in their BMs. The most discussed value creation sub-component was identified to be technology, but as all the other components were also mentioned, this indicates that technology alone is not enough to create superior value. For most companies, the earning logic largely remained the same since the beginning. The changes made to the "value capture" component originated from widening the offerings.

Our findings further elucidate that international opportunity recognition of the firms is fostered through the founder's contacts and partners' relationships play a vital role in seeking new customers abroad. Marketing efforts such as exhibition and trade activities either with agents or with sales partners are valuable for international operations and seeking new opportunities. Thus, supporting studies suggest that exploiting networks and other management activities fosters the exploration and discovery of opportunities (Zucchella et al. 2018; Guo et al., 2017; Child et al., 2017 Onetti et al. 2010). Although networks are significant towards fostering internationalization, we recognize that networks alone are not enough in the long run to find potential opportunities from the international markets. Hence, regardless of the firms' approach, either through network relationships or active search for IOR, the firms combined various marketing approaches to gain visibility, remain profitable, and gain new customers.

The founders also implied that changing their core technology was more difficult for the firms compared to changing other offerings in general. The reason for this seemed to be that the firms prioritized their technological advantages (cleantech) by operating with their initial BMs, then subsequently sought potential market opportunities to suit the BMs. Another reason for this could be because the companies are already operating in a niche market. The current BM may already offer customers all that they are expecting—having fewer resources influences the possibilities for the SMEs to adjust their BM even though there would be an opportunity for expansion. For small firms with limited resources, the evaluation of potential or recognized opportunities depends on the opportunity's viability and equivalent available firm resources to execute that opportunity. This may be due to the "newness of the industry that the companies operated, where the criteria for international markets and target customers may differ (Asemokha et al. 2019). Thus, as seen in the context of this study, the firms may instigate change initiatives within the capacity of their available resources and value creation components and were also willing to make changes mainly within those limits (Sapeinza et al. 2006). Following this logic, and being small firms with limited resources, it was easier for the firms to be flexible in modifying parts of the value dimension components of the BM rather than making radical changes to them. In line with the notion that compared to large firms, SMEs struggle with the liability of smallness and limited resources; thus, the importance of recognized opportunities vary amongst and not all SMEs implement pursue or even profit from identifying opportunities (Ketchen et al., 2007; Ireland et al., 2003, Guo et al., 2017).

## **6 Conclusion and Theoretical Implications**

The results suggest that the SMEs are limited to their operative business model, only finding and seizing the international opportunities suitable for their business models. The results contribute to the literature on two main fronts. Firstly, this is one of the first studies illustrating BM changes in the context of international entrepreneurship and SME internationalization. Secondly, the results provide an increased understanding of the ways internationalizing enterprises recognize opportunities and how the IOR is related to BM modifications. In addition to these two main contributions, further knowledge is provided from drivers leading to BM change along the entrepreneurial internationalization process. We have considered BM to change a moderator of business model activities that can occur either through innovative or adaptive

activities. We find a juxtaposition within our results that, while firms seem to seize international opportunities suitable for their BMs, they also tend to make "the most comfortable changes" or moderations to their BMs to capitalize on the international opportunities that present themselves in situ.

In the international entrepreneurship literature, most opportunity-related research is mostly focused on two main aspects, i.e., how international opportunity is used to establish new international ventures and/or how international opportunities are adopted and exploited, especially when firms internationalize (Zahra et al., 2005). In this study, we consider that while opportunities are developed based on entrepreneurial creativity, the ability to investigate and sense customer needs, as well as appropriate deployment of resources, determines if an opportunity will be pursued or not (see Ardichvili et al., 2003; Reuber et al., 2018). Also, having established that opportunities are identified in response to an explicit or latent customer needs (Hulbert et al. 1997; Bao et al., 2019), opportunity recognition progresses a step further when entrepreneurs can identify the resource or capabilities to pool together to help satisfy that need. The results of this study suggest that business model changes made as SMEs recognize international opportunity, especially in the early stages, are framed around resource fungibility (Sapienza et al. 2006) capabilities and commercial viability of such opportunity.

We also acknowledge that opportunity recognition is only the first phase of a continuing process. It also includes assessing the opportunities recognized and the actual opportunity development; all these steps are necessary to succeed (Ardichvili et al., 2003). Extant opportunity recognition literature highlights that factors fundamental to the opportunity recognition process are knowledge and network structure (e.g., Ardichvili et al., 2003; Chandra et al., 2009; Kontinen & Ojala, 2011). As seen with our findings, entrepreneurial actions aimed towards internationalization led to moderate BM changes. Thus, our findings contribute to BM and IOR literature that suggests that opportunity development and opportunity recognition can coexist simultaneously when entrepreneurial efforts are enacted (Ardichvili et al., 2003; Zahra et al., 2005).

Managers may select potential opportunities by considering the extent to which such opportunities align with the existing business model, especially in the context of cleantech firms. SMEs operating in the cleantech sector, their technology pioneers venture creation, and most customers may not be ready for their technology. Thus it may take time to find suitable customers. Therefore, capitalizing on all recognized opportunities, no matter how lucrative, maybe cost-intensive and require substantial resources from firms (Johnson et al. 2008). Thus, managers may need to strategically select novel international opportunities and frame them around their current market knowledge and core processes (Cavalcante et al. 2011) and business models.

Furthermore, the resource fungibility of small and early internationalizing firms may influence or restrict the extent to which they may be willing to capitalize on new recognized opportunities (Sapienza et al., 2006). As a result, the viability of the opportunity (such as customer requests or demands) also determined if the managers would consider an opportunity and the extent of change made to the value offerings to capitalize on such opportunity. Thus, internationalizing SMEs may often adjust their BM mainly when they encounter viable market opportunities or even due to potential threats from their environment (cf. Saebi et al., 2016). The findings contribute by identifying that SMEs may be willing to re-engineer new product and services or make minimal or non-fundamental changes to their BMs depending on the potential commercial benefit and performance implication of the recognized opportunity (Childs et al. 2017; Guo et al., 2017; Cavalcante et al., 2011; Ketchen et al., 2007; Ireland et al., 2003).

The results also further accentuate the importance of networks in international entrepreneurship and SME internationalization: IOR in the case companies often arose through their networks and contacts, knowledge of foreign markets, and queries and solicitation by foreign customers or distributors (Ardichvili et al., 2003; Chandra et al., 2009; Kontinen & Ojala, 2011; Reuber et al., 2018). Similarly, the results provide further

support to Hilmersson and Papaioannou's (2015) findings, as most of our case companies used to search as a way to recognize international opportunities. Besides, our findings are in line with studies that suggest that SMEs tend to initiate actions towards internationalization at early stages to seek competitive advantages through commercialization of their products and services abroad, through innovation, and through collaboration with network partners (Coviello, 2006; D'Angelo et al., 2013; Knight & Cavusgil, 2004).

Overall the study points out that business model changes are not taken lightly by SMEs. Given the size of Small ventures, small or even micro-changes to their business model may have big effects. Therefore, business model changes tend to be an incremental, continuous and unpredictable process that is unique and specific to every firm. Every entrepreneurial venture is unique and has its own unique identity, its business models of a firm. Furthermore, the changes that occur in a business model reflect the decisions and activities of the individual(s) who runs it. Although studies highlight that small firms may act similarly due to their similar characteristics, no two people are the same, in the same way, no two firms are the same regardless if they operate in the same industry.

#### *Managerial implications*

Our findings contribute to managerial practice in several ways. First, SMEs may find new opportunities and benefits from networks and contacts or even via employees (or employing personnel) who may have established contacts. SMEs may leverage their resources and capitalize on marketing and stakeholder relationships to speed up IOR and the internationalization process in general. Through this study, we found that subsequent IOR efforts, developing criteria to assess potential customers, or searching for the best possible customers may help direct the focus to the most potential customers/partners and facilitate the evaluation process of recognized opportunities. Moreover, a search as an activity and direct contact may wear out many resources, especially for a small company. Thus, it is advisable to use these criteria/profiles to implement the resources given efficiently.

We also identify the importance of pre-empting the potential of a business model. Our findings showed that it is crucial to ensure that the BM adopted is well-thought-out and well-established because this helps to secure subsequent or future opportunities recognized. Additionally, based on the findings, "offerings" and "customers" are components that have experienced the most changes. Thus, it is advisable to focus on those changes that are easier to achieve. In other words, even though the core of a BM may remain the same (e.g., the technology used), companies should endeavor to be flexible with other aspects and components of their BMs as required.

#### *Limitations and further research*

We recognize that there are several limitations and potential future research avenues arising from this study. For one, the definition of an SME, according to the European Commission, is a company with fewer than 250 employees. Nevertheless, in this study, most sample companies were small enterprises, with personnel varying from five to 28 persons. Smaller SMEs usually have smaller resources, at least human resources; for example, having only one salesperson responsible for all the international sales compared to having more employees can impact the speed and number of sales.

Secondly, smaller sizes can result in being able to be more flexible, decreasing the need to adapt to the BM. When a company then grows, it may be that more specific changes are needed in the BM to make sure every employee is aware of the changes. Thirdly, having more resources can impact the possibilities to implement new opportunities requiring changes in the BM. In other words, having just enough resources for the current activities forces the companies to neglect potential opportunities that would require BM adaptation. Therefore, the business models should also be studied from the viewpoint of medium-sized

enterprises (100 –250 employees) to large companies to see whether the size of the company impacts the findings.

Another limitation of generalizability is the chosen research context. Hence, findings may not be generalizable to SMEs in general. Nonetheless, although we can extensively apply our findings to cleantech SMEs, we do that with caution. This is because the case companies were functioning in varying fields of industry. Generally, the variation of different industries may also have an impact on the case companies' operations. For instance, as Asemokha et al. (2016) introduced in their article, some factors distinguish cleantech SMEs as a separate phenomenon, most important being the varying institutional environment (e.g., the regulatory environment). Thus, it may be possible that there are also differences in the regulatory environment inside the cleantech industry. For instance, the question remains as to whether or not the same regulations concern the IoT-field and the clean energy field. To continue adding insights into the cleantech companies' nature, it is vital in further research to focus on specific fields within the cleantech or renewable energy industry.

According to the findings of this study, internationalizing SMEs can change their BMs, but not necessarily to the extent that the change could be called a BMI but rather in a more incremental way that can be termed adaptation. Future research could seek other areas in which outright BMI could influence the internationalization process and, for instance, whether or not there are different drivers in BMI compared to adaptation. For further research, the impact of BMI compared to BMA could be a promising avenue to follow. Despite the fact that the companies are in different stages of the internationalization process, there were no distinct differences between the companies when it came to adjusting the BMs due to international opportunities. Thus, we conclude from the results of this study that the role of IOR in BM changes is not very clear and should be further researched. However, we can say that the firms seem to make the most comfortable BM alterations or moderations in response to looming threats or (better still) to capitalize on international opportunities that present themselves.

In the extant literature, different entrepreneurial characteristics have been noted to influence the opportunity recognition process: for instance, Oyson and Whittaker (2015) found that the whole discovery process can be seen as a cognitive process, and Wasdani and Mathew (2014) found that cognitive style had an impact on the opportunity recognition process in every stage of operations. As this study did not concentrate on the characteristics of the individual entrepreneurs specifically, this is one additional area that future research could assess in more detail. Even though entrepreneurs must discover opportunities firstly, it is not enough. From these discovered opportunities, first, it has to be decided which one should be exploited, and later on, this should be exploited, including the acquisition, recombination, and organization of the resources available (Shane, 2003, p. 10). Moreover, it is essential to remember that being successful in recognizing opportunities does not automatically lead to successful exploitation. For instance, being over-optimistic can make an entrepreneur exploit opportunities easily yet also fail (Shane & Venkataraman, 2000).

Studies attest that predicting the future, exploring opportunities, and executing them is a continuous and challenging endeavor for most international entrepreneurs due to market uncertainty and risks and including the international dimension adds more complexities when exploring opportunities in relation to business models (Zucchella et al., 2018). Through this study, we recognize that limited resources, capabilities, and other factors may limit and predict the extent to which entrepreneurs are willing to change their business model. Thus, further research will profit by using effectuation logic to properly predict how entrepreneurs utilize resources and capabilities under diverse market constraints to explore opportunities if those opportunities were implemented. In turn, they influenced their business models (Sarasvathy 2014; Zucchella et al., 2018).

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