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Decision-making in SME internationalization

*The role and use of Control in decisions
made under the uncertainties of foreign
market expansion*

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Abstract

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Small and medium-sized enterprises (SMEs) make the backbone of virtually all economies but most of them are only marginally engaged with global markets, particularly those from developing countries. Our ability to advise these firms is currently limited for two major reasons: on the one hand, conventional International Business literature treats the firm as a black box and does not advance in decision-making dynamics that are critical to SMEs' foreign expansion; on the other, recent SME internationalization studies have achieved important progress but seem dependent on the use of Effectuation theory to represent the decisions that guide SME internationalization. This thesis focuses on closing this gap, developing a treatment of SME internationalization that focuses specifically on characterising internationalization-related decisions as being based on firms' control of their own means, which allow them to proactively create opportunities and take advantage of contingencies (that is, the control principle). Empirically, this thesis builds on a quantitative research design based on survey data collected from 851 SMEs distributed in Brazil, China, Italy, Poland, and Sweden. Analyses of these data were performed with multiple regression equations and structural equation modelling using partial least squares. Results show that SMEs seem more inclined to adopt control-based decisions during internationalization when under uncertainties related to their business networks and when they come from emerging markets. They also reveal that the paths toward the realization of international market performance with control-based decisions seem to involve both firm-level and individual-level dynamics, with social networking playing a critical role. Finally, the findings collectively make it possible to draw a picture that clarifies the conceptualization of the control principle and hints on the multi-level nature of control-based internationalization. Despite limitations, such findings contribute to both International Business and International Entrepreneurship literatures while advancing extant understanding of the nature of the control principle and its role in SME internationalization.

Keywords: SME internationalization, non-predictive strategy, control-based strategy, environmental uncertainty, international market performance

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List of Papers

This thesis is based on the following papers, which are referred to in the text by their Roman numerals.

- I Oliveira, L. Decades of studies on how to make strategic decisions: Structure of the field and research opportunities. To be submitted to *International Journal of Management Reviews*.
- II Oliveira, L.; Bai, W.; Johanson, M.; Ratajczak-Mrozek, M.; Francioni, B. Uncertainty and entrepreneurial decision-making in SME internationalization. An updated version of this paper is under review for *Journal of International Management*.
- III Oliveira, L. F. C.; Bai, W.; Johanson, M.; Ratajczak-Mrozek, M. Effectual internationalization: The role of business and social networks. An updated version of this paper is under review for *Journal of Business Research*.

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1. Introduction

1.1. Context and research gap

Small and medium-sized enterprises (SMEs) offer one of the most challenging puzzles of International Business (IB) research. Despite making the backbone of virtually all economies, most of these firms are only marginally engaged with global markets (Organization for Economic Co-operation and Development [OECD], 2017; Paul, Parthasarathy, & Gupta, 2017; Tan, Brewer, & Liesch, 2016). This is particularly salient in developing countries, where the participation of manufacturing SMEs in international trade is estimated at only 10% of total sales (7.6% in direct exports and 2.4% through intermediaries), against around 27% in larger firms (World Trade Organization [WTO], 2016). Nevertheless, engagement with the international economy could provide SMEs with access to new markets and foreign best practices, and virtuous cycles of learning and innovation, among other benefits (Francis & Collins-Dodd, 2004; Golovko & Valentini, 2011; Pietrobelli & Rabellotti, 2011).

Despite the growing interest in smaller firms that operate across geographic borders and in topics of entrepreneurial internationalization, one could argue that received IB literature offers little support for understanding and advising SMEs' foreign expansion. Accordingly, traditional internationalization research rests on two major paradigms, one with economic foundations and another one marked by behavioral principles¹. The most iconic representation of the first paradigm is Internalization theory, which constitutes one of the pioneering approaches to the analysis of multinational enterprises. The most influential behavioral approach, in turn, is the Uppsala Model of firm internationalization.

¹ There are some specific theories usually recalled in discussions of SMEs internationalization, particularly the Born Global and International New Ventures models (G. A. Knight & Cavusgil, 1996; Oviatt & McDougall, 1994). These models are at the center of the so-called International Entrepreneurship research field (Jones et al., 2011). However, they are of little use in this thesis given that they are more concerned with the process of becoming international and the earliness of this decision, instead of looking the unfolding process of internationalization (Chetty, Johanson, & Martín, 2014).

Initially outlined by Buckley and Casson (1976), and building on transaction cost lenses, Internalization theory explains that firms seek efficient solutions to govern cross-border activities. According to this view, firms become multinationals when they possess advantages for internalizing activities in different countries instead of operating market transactions. The well-known OLI model (or Eclectic paradigm) expanded this discussion to look also at how ownership and location advantages guide firms' foreign expansion (Dunning, 1988, 2000, 2001).

Comparatively, the Uppsala Model was first introduced by Johanson and Vahlne (1977) to represent firm internationalization as a result of intertwined processes of learning and commitment of resources in increasingly distant foreign markets. The model thus outlines internationalization as the output of cumulative decisions taken by bounded rational decision-makers, meaning that these people make decisions with limited information and try to find satisfactory rather than optimal solutions for their problems. The Uppsala Model also acknowledges that each decision is affected by the outcomes of previous ones. Later, this model was updated to accommodate the relevance of networks and network relationships, portraying internationalization as the access to relevant positions in foreign markets through foreign relationship development (Johanson & Vahlne, 2003, 2009).

Both economic and behavioral paradigms tend to treat the firm as a black-box, without detailing the decisions that guide its internationalization efforts (Aharoni, Tihanyi, & Connelly, 2011; Coviello, Kano, & Liesch, 2017; Maitland & Sammartino, 2015). On the one hand, the rational explanations advanced by economic paradigms leave unaddressed how governance choices are actually made by firms (Hennart & Slangen, 2015). On the other hand, the behavioral assumptions of Johanson and Vahlne's Uppsala Model explain the evolution of firms' learning and commitment abroad, but remain silent about the details of the decisions that guide firms through such processes (Coviello et al., 2017; Dow, Liesch, & Welch, 2018). Despite connecting internationalization with firms' decision systems, the Uppsala Model has focused, since its first version, on firm-level discussions without explicitly considering individual decision-makers (Johanson & Vahlne, 1977, p. 26). Such limitations were only reinforced in its later versions (Johanson & Vahlne, 2009; Vahlne & Johanson, 2017).

The mentioned shortcomings are problematic in a general sense, given that a reduced understanding of decision-making in the context of firm internationalization causes "difficulties in delineating internationalization performance effects and the divergence between predicted and revealed internationalization choices" (Maitland & Sammartino, 2015, p. 2). They are particularly problematic for SMEs, given that these firms are marked by scarce

resources and concentrated decision power (Andersson & Florén, 2008; Lefebvre, Mason, & Lefebvre, 1997). In other words, strategic issues such as internationalization are likely to evolve organically for SMEs, guided by the day-to-day decisions of one or a few key individuals (Jones & Casulli, 2014).

Aware of these issues, IB scholars have been increasingly interested in the role of decision-making in firm internationalization, focusing especially on the challenges experienced by SMEs. Some of these researchers have drawn on conventional decision-making literature, considering how the rationality of internationalization decisions affect firms' foreign behavior (e.g., Child & Hsieh, 2014; Deligianni, Dimitratos, Petrou, & Aharoni, 2016). Others have retrieved Effectuation theory from entrepreneurship research to explain the decisions that guide firm internationalization (e.g., Sarasvathy, Kumar, York, & Bhagavatula, 2014; Schweizer, Vahlne, & Johanson, 2010). Recent literature surveys show that this latter approach is becoming increasingly popular and may offer a way to handle limitations of conventional IB theories (Grégoire & Cherchem, 2019; Karami, Wooliscroft, & McNeill, 2020).

Initially proposed by Sarasvathy (2001), Effectuation theory was outlined as an explanation for how entrepreneurs can act under adverse conditions and create new products, new companies, and new markets in this process. By focusing on how decision-makers create opportunities and decision paths by leveraging resources at hand, without anticipating specific goals, Effectuation offers a dramatic contrast with the planning-based reasoning that dominates conventional economic and management thinking (which Sarasvathy (2001) called *causation*). According to Wiltbank and Sarasvathy (2010), Effectuation is not a deviation from rationality, nor is it irrational, but constitutes a logic that is appropriate to uncertain and ambiguous decision situations. Harms and Schiele (2012, p. 97) consider that Effectuation is “a welcome addition to established internationalization theories”, which “fail to effectively capture decision-making under uncertainty”.

Support to Effectuation in internationalization research has been growing steadily (e.g., Galkina & Chetty, 2015; Kalinic, Sarasvathy, & Forza, 2014; Karami, Wooliscroft, & McNeill, 2019; Kujala & Törnroos, 2018; Matta & Mello, 2014; Prashantham, Kumar, Bhagavatula, & Sarasvathy, 2019; Sarasvathy et al., 2014; Schweizer, 2015; Schweizer et al., 2010; Skorupski, Kogut, & Mello, 2019; Vasconcellos, Garrido, & Parente, 2019). For example, researchers have indicated that the adoption of Effectuation principles can help firms overcome the liabilities of not belonging to the local networks of the international markets that they enter (also known as liability of outsidership) (Fiedler, Fath, & Whittaker, 2017; Kalinic et al., 2014; Kujala & Törnroos, 2018). They have also found it useful in entering several markets in a short period (Chetty, Ojala, & Leppäaho, 2015; Galkina & Chetty, 2015;

Prashantham et al., 2019). Such studies build on parallels between the appropriateness of Effectuation in uncertain contexts and the challenges that firms find abroad, especially SMEs. Like in entrepreneurship activity, SME internationalization often entails advancing in unknown territories while dealing with various limitations and having to create business connections from scratch (Ciravegna, Majano, & Zhan, 2014; Schweizer, 2015).

The major advantage attributed to Effectuation is its reliance on firms' capacity to control their own means to proactively create opportunities and take advantage of contingencies, instead of simply trying harder to predict what the future may look like or react to such future as it unfolds (Sarasvathy, 2001; Wiltbank, Dew, Read, & Sarasvathy, 2006). In spite of that, Effectuation is only one example in a broad category of theories that have been called "control-based" or "non-predictive" strategies. Such theories receive this name to the extent that they share the same focus on control in decision-making² (Kuechle, Boulu-Reshef, & Carr, 2016; Mauer, Wuebker, Schlueter, & Brettel, 2018; Wiltbank et al., 2006). Back in the 1980s, Gibb and Scott (1985) already suggested that SMEs' development paths are affected by development opportunities created out of their current business situation.

If the adoption of Effectuation is not the only alternative to investigate control in decision-making, its use in SME internationalization research may represent burdens that could be avoided. Accordingly, by adopting Effectuation, SME internationalization researchers may be required to reconcile their assumptions and research problems with the ongoing development of Effectuation as an entrepreneurship theory (e.g., Jiang & Ruling, 2019; Palmie, Huerzeler, Grichnik, Keupp, & Gassmann, 2019). Such a choice also imposes on those scholars the same theoretical and methodological challenges that Effectuation still faces—like the nature of Effectuation as a process or variance-based theory, and tensions related to its preferred unit and level of analysis (Arend, Sarooghi, & Burkemper, 2015, 2016; Gregoire & Cherchem, 2019; McKelvie, Chandler, DeTienne, & Johansson, 2019). Despite allowing some progress compared to conventional IB theories, therefore, Effectuation theory may distract SME internationalization researchers from addressing what really seems to matter to them—the control principle

² In this thesis, the terms control-based strategy and non-predictive strategy are used interchangeably to designate the strategies marked by the adoption of the control principle.

1.2. Research questions

Following Wiltbank et al. (2006), the concept of control can be identified with the efforts that companies make to create opportunities and shape their surroundings using their own initiative. Empirical research has perceived it in firms' focus on available means for the creation of new opportunities, representing firms' basis for taking action (e.g., Jiang & Ruling, 2019; Reymen et al., 2015). These ideas reflect previous work by March (1982), who addressed the creativity of human action as manifested in its capacity to act in the absence of well-defined goals and preferences. They also resonate with the idea of experience as a result of action, which Weick (1979) incorporated in the concept of enactment.

This thesis defends that a more general treatment of SME internationalization should depend less on Effectuation and focus instead on the role of control in internationalization decision-making. Advances in this discussion should yield both theoretical and practical contributions for debates of SME internationalization, in particular, as well as for broad discussions of firm internationalization. Therefore, the general purpose of this thesis is:

To explore the role of control in internationalization decision-making, leveraging the discussion of SMEs' foreign expansion.

By embracing Effectuation theory as its preferred framework, recent SME internationalization research frequently takes the adoption of effectuation by SMEs for granted under foreign market uncertainty (e.g., Fiedler et al., 2017; Kujala and Tornroos, 2018; Sarasvathy et al., 2014). Although some of the insights obtained in this vein should certainly be useful, the state of things requires that we go back to the basics and verify some fundamental assumptions of this discussion before moving on. Moreover, studies on effectual internationalization are primarily qualitative and usually capture aspects of Effectuation selectively (Gregoire & Cherchem, 2019). This approach limits the possibilities of critically examining available results and making generalizations that help researchers and managers. For that, systematic efforts of data gathering, modeling, and analysis tend to be required. In light of these issues, the specific research questions pursued in this thesis are:

(1) Do SMEs use a control-based strategy to make internationalization-related decisions when under the uncertainties of international markets?

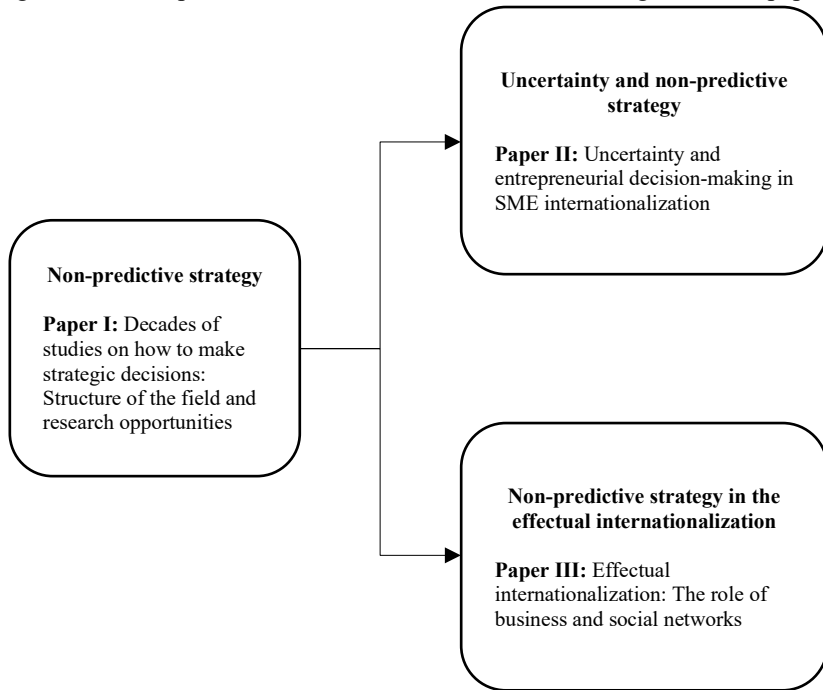
(2) *How can SMEs benefit from the adoption of a control-based strategy to make internationalization-related decisions under the uncertainties of international markets?*

Although *uncertainty* is an important concept in various disciplines, researchers traditionally have problems to define and measure it properly (Alvarez, Afuah, & Gibson, 2018; Liesch, Welch, & Buckley, 2011). In this thesis, uncertainty is understood as what is sometimes called *true uncertainty* or *Knightian uncertainty*, for drawing on the conceptualization advanced by Frank Knight (1921). In other words, it designates situations when it is impossible to acknowledge, *ex-ante*, the existence of alternatives from which to choose or to which probabilities could be assigned. If alternative scenarios for a given decision situation are known and their probabilities exist or can be estimated objectively, in turn, the problem at hand can be interpreted as being one of risk. For International Business (IB) and International Entrepreneurship (IE) researchers, discussions usually address problems of *external environment uncertainty*, highlighting country and industry effects that compromise firm action (e.g., Brouthers, Brouthers, & Werner, 2002; Dimitratos, Lioukas, & Carter, 2004; K. D. Miller, 1993; Sanchez-Peinado & Pla-Barber, 2006). This includes the problems that firms face when dealing with unrelated cultures and regulatory frameworks, as well as when they operate in unstable business networks.

Perceived as a process, internationalization encompasses various kinds of decisions, starting from whether to go abroad in the first place (Bell, McNaughton, & Young, 2001; Li, Li, Goerzen, & Shi, 2018). Firms also need to choose which country to enter (Schu & Morschett, 2017), how fast to do so (Hilmersson & Johanson, 2016; Kalinic & Forza, 2012), what entry mode to adopt (Ahi, Baronchelli, Kuivalainen, & Piantoni, 2017), and what business partners to select (Andersen & Buvik, 2002). Eventually, they also must decide about withdrawing (partially or entirely) from foreign markets (Benito, 2005; Benito & Welch, 1997), and later they may have the opportunity to consider resuming their internationalization (Welch & Welch, 2009). Yet, a major problem for SME internationalization remains represented in the risk of failing once they already operate abroad (Dominguez & Mayrhofer, 2017; Requena-Silvente, 2005). For this reason, this thesis focuses on discussing decisions that help SMEs' survival and entertain a perspective of internationalization as an ongoing expansion process (c.f., Sousa & Tan, 2015; Vissak & Francioni, 2013). This thesis, therefore, focuses on internationalization decisions that SMEs take to expand into new markets once they already have some kind of international activity.

To answering the proposed research questions, this thesis includes three papers, one of them, conceptual, and the remaining two, empirical. Figure 1 indicates the specific research focus of each paper and how they relate to each other to address the general purpose of this thesis.

Figure 1. The empirical focus and construct relations investigated in the papers.



Paper I presents a systematic literature review that seeks to shed light on the overlaps, complementarities, and knowledge gaps among the most influential perspectives of strategic decision-making research. Its results outline three independent theory development routes influencing the research on strategic decision-making produced between 1990 and 2018, reflecting different perspectives on the empirical problem of making strategic decisions. Sarasvathy’s Effectuation, as well as other control-based theories, appear within the route that focus on how decision-makers relate to their environment through their decisions.

Paper II looks into the determinism in the adoption of non-predictive strategy by small and medium-sized enterprises (SMEs) in their foreign activities. More specifically, it tests empirically the effects of regulatory, cultural, and business network uncertainties using data from 755 SMEs from Brazil, China, Poland, Italy, and Sweden. Paper III, in turn, addresses the performance implications of the distinct mechanisms represented by business

and social networks in the effectual internationalization (i.e., in firms' effectual or control-based behavior during internationalization).

By engaging in this investigation, this thesis promotes a debate that advances extant understanding of the nature of the control principle and its role in SME internationalization. Its contributions add to International Business literature, which historically revolve around a few perspectives that do not properly account for the internationalization of SMEs. In particular, results of this thesis may be relevant for behavioral internationalization approaches such as the Uppsala Model, which represent internationalization as a series of decisions and share assumptions with control-based strategy. Moreover, this thesis has also a threefold contribution to offer to International Entrepreneurship literature: it focuses on the discussion of the objective uncertainty existing in the firms' environment rather than that perceived by entrepreneurs, as IE studies often do; it argues against the dependence of SME internationalization studies on Effectuation theory; and it develops a theoretical framework that is concerned with the continued international expansion of SMEs instead of with the initial stages of such a process. From a practical perspective, managers and policy-makers may be interested in this thesis' findings on the way SMEs relate to their surrounding uncertainty and perform under it. Such findings may be useful in the development of decision support systems that help managers address practical matters and support the design of policies aimed at fostering SME internationalization.

1.3. Structure of this summary

I focus Chapter 2 on defining control-based decisions, initially clarifying their differences in relation to conventional decision-making approaches found in the strategic decision-making literature. I also contextualize those decisions in the discussion of SME internationalization, reviewing the streams within this literature that have been inspired by insights such as those offered by Sarasvathy and her Effectuation theory.

Chapter 3 presents the theoretical framework and major concepts underpinning this thesis. The most important of them is uncertainty, whose nature and role in SME internationalization permeates several aspects of my theoretical discussion. Hence, I discuss uncertainty from the perspective of International Business and International Entrepreneurship literatures, and indicate how this concept is approached in my model. In order to capture how firms from different origins may perceive and act in contexts of high uncertainty differently, I introduce Institutional theory as a useful aid to my arguments.

Chapter 4 details the methodological choices taken over the course of my research, which is based essentially on a quantitative survey design. A summary of the papers making this thesis comes in Chapter 5 and, in the sequence, I discuss my main findings in Chapter 6. In this last chapter, I also list implications for theory and practice of my results, as well as limitations and directions for future research, closing with final remarks.

2. Internationalization as a strategic decision

This chapter draws the connection between the literature on decision-making and that on SME internationalization. It starts by defining strategic decision-making, in which definition one can count the decisions that are involved in SME internationalization. Next, it reviews the conventional schools that have been developed within this field and characterizes how the idea of control expands such a picture. The discussion of control-based decision-making is framed with arguments of those authors who originally proposed it and who have worked with this concept within Effectuation-related research. I critically discuss such ideas in a later chapter of this thesis, in light of the results of the literature review embodied in Paper I.

2.1. Strategic decision-making and its conventional schools

Talking about strategy tends to be a difficult task when it comes to SMEs, given the conventional understanding of strategy as a set of decisions that optimize a course of action and are bound by a unifying logic (Van den Steen, 2017). In short, *strategy* is usually associated with planning-based reasoning and there are several studies and arguments to consider that SMEs will have problems implementing such a structured decision-making approach. Among them, it is necessary to acknowledge that these firms oftentimes pursue personal or noneconomic goals before financial objectives, such as job satisfaction, pride, and a flexible lifestyle (Ahmad & Seet, 2009; Walker & Brown, 2004). Also, SMEs are commonly perceived as resource-constrained and more subject to uncertainty (G. A. Knight, 2001), which tends to compromise the feasibility and efficiency of planning efforts. Some scholars still consider that SMEs' leaders are simply too busy running their businesses and end up focusing rather on putting-out-fires and ad hoc problem solving (Hauser, Eggers, & Guldenberg, 2019).

Nevertheless, talking about strategic decision-making has less to do with the content of firms' strategies and more with what such decisions mean to firms. There is little consensus in the literature on what makes decisions truly

strategic, beyond the fact that they tend to be difficult to make and hold relevant consequences for the future of the firm (Csaszar, 2018; Cummings & Daellenbach, 2009; Sharfman & Dean, 1997). Strategic decisions can thus be defined as the infrequent and complex decisions capable of affecting organizational health and survival (Eisenhardt & Zbaracki, 1992; Elbanna, 2006). They are said strategic for their importance “in terms of the actions taken, the resources committed, or the precedents set” (Mintzberg, Raisinghani, & Théorêt, 1976, p. 246).

In this sense, the decisions that guide firms through internationalization can be deemed strategic, to the extent that they are infrequent and complex, and can be threatening to firm survival. This is particularly true to SMEs: in addition to encountering liabilities of foreignness (Zaheer, 1995) and network outsidership (Johanson & Vahlne, 2009), these firms also lack resources and experience due to their smallness and newness (Aldrich & Ellen, 1986; Henderson, 1999). By leading these firms to commit their scarce resources to particular routes of action, decisions involved in internationalization also build path dependence. This means that they produce resource rigidity and institutionalized behaviors, which can make firms hold onto inefficient trajectories (Sydow, Schreyögg, & Koch, 2009).

When discussing SME internationalization from a perspective of strategic decision-making, it is inevitable to consider knowledge received from the traditional schools in that field. The most acknowledged of these schools is the already mentioned strategic planning, which dominates decision-making debates among both academics and practitioners (March, 1982; Sarasvathy, 2001; Wiltbank et al., 2006). Building on ideas such as those defended by Ansoff (1979) and Porter (1980), the strategic planning school assumes that firms’ choices should be done as to better position them in the market (Wiltbank et al., 2006). Planning-based strategies are usually based on an extensive collection of information about alternatives, disciplined evaluation of scenarios, and the pursuit of clearly specified goals (C. C. Miller & Cardinal, 1994).

Advocates of strategic planning claim that such efforts can help firms overcome personal and group biases, spot missing information, examine assumptions before spending resources, match supply and demand, and estimate the timing of resource flows, among other benefits (Gruber, 2007; Wiltbank et al., 2006). Even when plans are inaccurate, planning tools could be useful for the discipline and systematic thinking that they require, which may help firms evaluate emerging opportunities (Wiltbank et al., 2006). Of course, strategic planning in SMEs tends not to be equal to that of large enterprises, since the former group of firms tends to employ shorter time-horizons, less formality, higher involvement of external participants such as

consultants, and reduced regularity and comprehensiveness (McKiernan & Morris, 1994). As uncertainty grows, however, prediction efforts seem to lose validity in a general sense and firms oftentimes have to explore strategies including adaptation, flexibility, creativity, and networking (Magnani & Zucchella, 2019).

The traditional counterpoint to strategic planning is made by theories based on the so-called adaptive learning school (Wiltbank et al., 2006). According to these theories, firms may be better off when focusing on quickly recognizing and adapting to changes in their external environment. This can be achieved with simple incrementalism, for instance, which leads firms to act only after reflecting upon and learning from external feedback (Mintzberg, 1978; Quinn, 1980). Fast decision-making, in turn, may help executives to develop more alternatives and keep pace with change in their environment (Eisenhardt, 1989). Such theoretical solutions gain relevance mainly in sectorial and market contexts marked by intense dynamism and complexity (Mintzberg & Waters, 1985; Mosakowski, 1997). In those contexts, change is so dramatic that it is easy for firms to make poor strategic judgments that drive them out of business (Bourgeois & Eisenhardt, 1988).

Compared to sophisticated forecasts and plans, quick decisions and emerging strategies seem to be more useful when firms are forced to deal with incomplete information and face the challenge of capturing unanticipated opportunities. At least, firms employing such techniques seem better at outcompeting others that try to deal with the uncertainty of their own future in a structured way (Fredrickson & Mitchell, 1984). In spite of that, history shows abundant empirical evidence supporting both the strategic planning and adaptive learning schools of decision-making (Mauer et al., 2018; Wiltbank et al., 2006). This scenario has produced one of the academy's longest debates, in spite of attempts to bridge both traditions (e.g., Bodwell & Chermack, 2010; Brews & Hunt, 1999; Eisenhardt & Sull, 2001; Grant, 2003).

2.2. The need for non-predictive strategy

Adaptive learning theories help companies position themselves when the future cannot be fully anticipated. They also seem to minimize the problems that one faces when talking about strategizing in the context of SME internationalization, given these firms' resource scarcity, their unconventional priorities, and their limited adoption of the techniques traditionally associated with strategic planning. Yet, adaptive learning theories tend to put firms in a passive attitude and assume, to some extent, that they operate in environments that are exogenous to their actions – just like assumed by prediction-based

theories (Wiltbank et al., 2006). Emerging strategies, for instance, represent decisions that only take shape after firms learn a little more about their environment in the course of their actions. Fast decision-making tries to reconcile the extremes of planning and passive adaptation, balancing the use of systematic decisions with the readiness to change strategy depending on the environment. Examples may include the adoption of accelerated decision-making processes and the search for agility in the review of strategic planning.

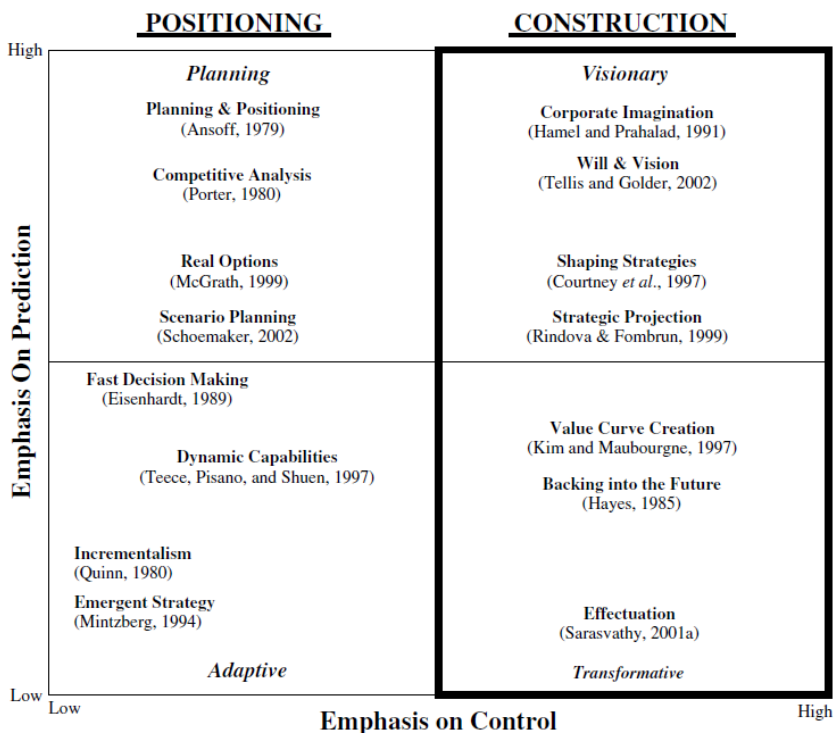
Comparatively, new strategic options emerge when one recognizes that firms' deliberate actions are capable of producing the very restrictions and opportunities that they encounter in their environment (Weick, 1979). This is one of the starting points of Sarasvathy's (2001) Effectuation theory, which argues that firms can better deal with uncertainty by leveraging resources to which they have direct or indirect access to create new opportunities, rather than investing in structured plans and well-defined objectives. In the case of entrepreneurial activity, such plans and objectives may prove irrelevant, since firms often operate in markets that are poorly defined or entirely new. Effectuation is just an example of what Wiltbank et al. (2006) dubbed control-based (or non-predictive) strategies: strategies that emphasize firms' control over the result of their decisions, or yet efforts to create and influence the evolution of the markets in which they operate, without implying the pursuit of goals or reactions to changes in the external environment.

March (1982) had already acknowledged that individuals and organizations sometimes need to act before they even think about it or establish clear goals. He maintained that this requires some level of "foolishness" from the part of decision-makers, in order to deviate from what normative decision-making theories conventionally associate with intelligence or rationality. March suggested that this attitude incorporates issues such as valuing experimentation, intuition, and experience as a form of learning, accepting deviations as part of transition moments, and avoiding to be dominated by the need to be consistent with past behavior. Previously, March (1978) had also argued that, under vague or unstable objectives, the decisions that can be considered good are those that enrich the decision-making process itself, with the generation of new alternatives and the cultivation of openness to new opportunities. Sarasvathy e Dew (2005) associate this perspective with three logics, which they call *effectual*: a focus on one's own identity, as opposed to preconceived preferences; a focus on action, as opposed to expectations; and a focus on relationships and commitments (as opposed to transactions and contracts). All of these elements can be considered among the means available as inputs to strategic decisions.

Although Sarasvathy and colleagues have discussed control essentially as a component of Effectuation, inspired by studies of experienced

entrepreneurs, Effectuation is not the only theoretical model in the category that Wiltbank et al. (2006) called control-based strategies. In the same category, one can find other models focused on firms' creative capacity such as Hayes' (1985) Reverse Planning and Kim and Mauborgne's (1997) Value creation curve. For the first of these models, traditional strategic planning tends to compromise firms' competitiveness due to its focus on an “objectives-means-resources” logic, making them pursue quantitative and short-term goals, become rigid, and devote much of their attention to financial resources. When considering existing resources as a starting point, companies would take responsibility for their trajectories, cultivating internal skills and privileging flexible initiatives. For Kim and Mauborgne (1997), in turn, firms are able to outperform their rivals by breaking out of their industry’s assumptions and creating new offers that maximize the value perceived by consumers, minimizing or eliminating other investments. Figure 2 indicates how Wiltbank and colleagues position control-based theories relative to other decision models.

Figure 2. Decision models and their focus on prediction and control



Source: Wiltbank et al. (2006. p. 984)

The control principle can also be seen in other models not mentioned by Wiltbank et al. (2006). In the 1990s, for example, Brown and Eisenhardt (1997) proposed that successful innovation projects combine a limited structure of responsibilities and priorities with extensive communication and freedom to experiment and improvise. Such a strategy would intentionally promote unstructured and continuous changes, which should be valuable in rapidly changing environments. Perhaps to a lesser extent, another theory that acknowledges the idea of control as an exercise of creative influence over the environment is Upper Echelons Theory. This theory addresses the role of top management in firms' competitive actions, either induced by competition movements or undertaken spontaneously (Hambrick, Cho, & Chen, 1996; Hambrick & Mason, 1984).

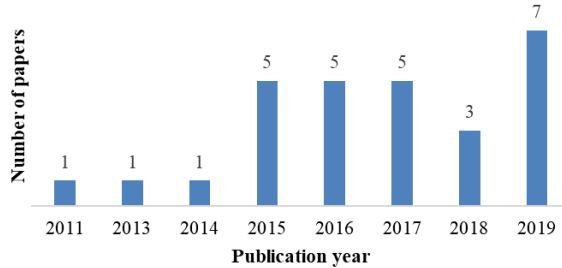
In general, control-based strategies assume strategic flexibility, while defending heuristics that guarantee companies' greater control over their decisions (Wiltbank et al., 2006). Such heuristics may help companies navigate conditions of uncertainty with the use of short-term experiments, allowing them to explore different decision-making routes with minimal commitment from their resources. (Chandler, DeTienne, McKelvie, & Mumford, 2011; Frese, Geiger, & Dost, 2019; Tasic & Andreassi, 2008). They may also include improvisation efforts (Alsos, Clausen, Mauer, Read, & Sarasvathy, 2019), which materialize transformative and creative actions that deliberately build new resource bases, instead of reorienting or reinterpreting pre-existing resources and reference models (Evers & O'Gorman, 2011; Weick, 1998). By improvising and experimenting with their decisions, firms are more likely to face unanticipated paths and to expand their network of relationships in an unstructured way, which potentially gives them access to new resources, knowledge, and opportunities (Magnani & Zucchella, 2019; Meyer & Skak, 2002).

2.3. Non-prediction in firm internationalization

According to Web of Knowledge's Core Collection, 28 papers were published until 2019 having *effectuation* among their topic words, together with at least one of the expressions: "*international expansion*", "*foreign expansion*", "*internationalization*", or yet, "*internationalization*". The earliest of these papers is dated from 2011 (Evers & O'Gorman, 2011). As illustrated in Figure 3, the research on what can be termed "effectual internationalization" (i.e., the identification of firms' effectual behavior during internationalization) is relatively recent and still nascent. This result is coherent with the number of

papers identified by recent efforts aimed at surveying Effectuation-related research in firm internationalization (c.f., Grégoire & Cherchem, 2019; Karami et al., 2019).

Figure 3. Yearly evolution of publications on effectual internationalization



The search represented in Figure 3 is limited by the fact that *topic words* in Web of Knowledge only include papers' titles, abstracts, and keywords, and by the idea that some papers only tap on Effectuation as a useful argument in unrelated discussions (Arend et al., 2015). Nevertheless, these selective results already allow for an assessment of the convergence between effectuation and internationalization research. Broadly speaking, the retrieved papers can be interpreted as representing three distinct *generations*, as indicated in Table 1.

The first generation discusses Effectuation adoption in internationalization studies largely based on a more traditional entrepreneurship literature. It is inaugurated with Evers and O'Gorman's (2011) qualitative investigation of firms featuring a very particular profile: small size, export aspirations from start-up, and at least 25% of sales abroad within 6 years of inception. Firms like these are often called international new ventures (INVs) (Oviatt & McDougall, 1994) or born globals (G. A. Knight & Cavusgil, 1996), in reference to their early and substantial foreign activities. The internationalization of such firms is usually too abrupt and unconventional compared to traditional internationalization paradigms, thereby providing scholars with useful arguments for defending Effectuation as a major theoretical lens.

Table 1. Internationalization research using effectuation theory

	First generation	Second generation	Third generation
Timeframe	2011-2016	2012-...	2015-...
Empirical focus	International new ventures	New market entries of traditional SMEs	Traditional SMEs' entry and further expansion in new foreign markets
Major theoretical influences	Entrepreneurship literature	Entrepreneurship literature IB literature	IB literature, enriched with comparisons with the entrepreneurship context
Example studies	<ul style="list-style-type: none"> - Evers and O'Gorman (2011) - Evers, Andersson, and Hannibal (2012) - Nowiński and Rialp (2013) - Crick and Crick (2014) - Fuerst and Zettinig (2015) - Hannibal, Evers, and Servais (2016) 	<ul style="list-style-type: none"> - Harms and Schiele (2012) - Kalinic et al. (2014) - Chetty et al. (2015) - Fiedler et al. (2017) - Kujala and Törnroos (2018) 	<ul style="list-style-type: none"> - Schweizer (2015) - Galkina and Chetty (2015) - Ahi et al. (2017) - Chandra (2017) - Vasconcellos et al. (2019) - Prashantham et al. (2019)
Major findings	<ul style="list-style-type: none"> - Utility of effectuation in different aspects of the creation of international new ventures 	<ul style="list-style-type: none"> - Possibility of alternating between causation and effectuation in new market entries - Positive outcomes associated with the use of effectuation 	<ul style="list-style-type: none"> - Possibility of adopting different degrees of emphasis on effectuation - Positive outcomes often assumed to result from effectuation adoption, but some results indicate that causal modes can also provide benefits

Evers and O’Gorman (2011) highlighted the importance of both the founders’ prior knowledge and their existing networks in their case firms’ internationalization, perceiving evidence of the Effectuation process described by Sarasvathy (2001). Other examples of studies with comparable empirical settings can be found in Evers, Andersson, and Hannibal's (2012) investigation of capability building in INVs from Ireland, Sweden, and Denmark; Nowiński and Rialp's (2013) characterization of the internationalization of Central and Eastern European INVs; Crick and Crick's (2014) assessment of the internationalization strategies of rapidly internationalizing high-tech UK SMEs; Fuerst and Zetting's (2015) study of knowledge creation in Latin American INVs’ internationalization; and Hannibal, Evers, and Servais' (2016) discussion of university spin-offs from Denmark and Ireland.

Studies in this first generation concur in finding Effectuation useful to different aspects of the creation of international new ventures. Maybe because of scope limitations, they seem to have lost momentum after 2016. Conversely, the utility of Effectuation for other SME profiles started to be discussed in a separate group of publications, with the incorporation of a more conventional internationalization research body. The *second generation* of Table 1 started almost together with the first one and the *third generation* can be identified some years later. In the former group, publications address SMEs in general but focus mostly on these firms’ first entry in a new foreign market; publications in the latter group, conversely, adopt a more comprehensive view of these firms’ foreign expansion. This segmentation reflects a gradual incorporation of Effectuation theory from pure entrepreneurship into IB and IE, and the appropriation of internationalization-related discussions using Effectuation by scholars belonging to these groups.

An early example of the second generation is Harms and Schiele's (2012) study, which still focused on INVs but was more interested in the new-market entries of smaller firms as a phenomenon. While this study found no benefit in the adoption of Effectuation, other studies in this generation revealed a different picture. One of these studies is Kalinic, Sarasvathy, and Forza's (2014) investigation of the first FDI of traditional SMEs from Italy: these authors found that switching from causation to effectuation allowed their case firms to build their networks in markets where they had no previous connections. Other studies in this generation are represented by Chetty, Ojala, and Leppäaho's (2015) investigation of entrepreneurial SMEs expanding from Finland and New Zealand; Fiedler, Fath, and Whittaker's (2017) examination of SMEs from New Zealand expanding into China, and Kujala and Törnroos' (2018) analysis of SMEs from Ghana entering the United States. Studies in this generation focus on the possibility of alternating between causation and

effectuation in new market entries, as well as the positive outcomes associated with the use of Effectuation.

The *third generation* of internationalization research drawing on Effectuation theory comprises studies that are not limited to foreign-market entry events, but also advance more comprehensive consequences for SMEs' internationalization process. One of these contributions is Schweizer's (2015) single case study involving a Swedish medical technology firm, which focused on how and why the firm's preference for causation and effectuation changed over the course of its internationalization process. His conclusions indicated that the decision mode choice followed the perceived nature of the problems at hand, influences from existing routines and heuristics, and the idiosyncratic nature of each foreign expansion. The major firm-level decisions included in his study go from new market entries and production outsourcing to the firm's market specialization.

Other studies followed similar ambitions, as it was the case of Galkina and Chetty's (2015) investigation of Finish SMEs entering and expanding into the Russian market, Ahi's et al. (2017) analysis of Finish and Italian SMEs' decision-making process during internationalization, Chandra's (2017) study of Australian SMEs' foreign opportunity development, and Vasconcellos' et al. (2019) discussion of how Brazilian SMEs acquire international business competence through Effectuation. Prashantham's et al. (2019) discussion of the impacts of Effectuation on internationalization speed focuses on INVs but is positioned within this generation because it focuses on the development of INVs' internationalization and interacts with references from SME internationalization literature. In addition to the possibility of adopting different degrees of emphasis on effectuation, studies in this generation acknowledge that positive outcomes can come from both effectual and causal decision modes.

By questioning whether and how SMEs use control to make decisions in association with the uncertainties of international markets, this thesis joins the scope of the second and third generations of studies that have investigated the role of effectuation in SME internationalization. It revisits assumptions that are often taken for granted in studies of such generations, reframing the problem of internationalization decision-making as one of control adoption instead of Effectuation adoption. The benefits of repositioning this debate, as indicated in the introduction, include a greater autonomy to studies of SME internationalization and a better appreciation of the concept of control in decision-making problems.

3. Theoretical framework

This thesis is grounded on a theoretical framework that investigates SMEs' decision-making behavior under uncertainty. In order to substantiate such a discussion, this chapter first presents the theoretical underpinnings of uncertainty from a perspective of international entrepreneurship and international business. Next, it discusses the institutional foundations of country differences that may induce different attitudes towards uncertainty due to the country contexts that firms experience.

3.1. Uncertainty and firm internationalization

According to Sarasvathy et al. (2014), cross-border uncertainty represents one of the major drivers of the adoption of effectuation by SMEs in their international activity. As in other disciplines, the concept of uncertainty has played a major role in explanations of firm activity in international entrepreneurship and international business studies (Johanson & Vahlne, 2009; Liesch et al., 2011; Magnani & Zucchella, 2018). Yet, uncertainty is often represented as an unclear concept, sometimes confused with the notion of risk, and oftentimes addressed only indirectly, through its effects on more tangible constructs such as knowledge, networks, and foreign market commitment (Alvarez & Barney, 2005; Liesch et al., 2011).

As put by Folta (2007, p. 97), “most would agree that a reasonable starting point for establishing an emphasis on risk and uncertainty is the work of Frank Knight”. Frank Knight (1921) defended that risk, for being quantifiable, represents situations against which one can get insurance and other similar safeguards. Risk analysis is usually the core component of what researchers tend to associate with the idea of “rationality”, in terms of formal approaches to decision-making that maximize expected results and minimize foreseeable threats (K. D. Miller, 2007; Sarasvathy, 2001; Schendel, 2007). Conversely, uncertainty is what surrounds firms and decision-makers that entertain radical innovation projects or enter new business territories, offering them unknown mixes of failure possibilities and above-average returns (F. Knight, 1921; Schendel, 2007).

Knight's approach to uncertainty has been historically questioned for focusing on events that are truly unique and exceptional. This could mean that, by definition, they cannot be comprehended and implicitly render scientific analysis useless due to the impossibility of mapping or mitigating uncertainty-related phenomena (Jarvis, 2010). Yet, Knight's approach remains useful to frame the challenges of firm internationalization if one recognizes that internationalization is not necessarily about the "management of uncertainty" but rather about "managing under uncertainty" (Vahlne, Hamberg, & Schweizer, 2017, p. 92). This means that internationalization scholars will be mostly interested in understanding how firms behave and perform under the influence of a given level of uncertainty. It is true that managers can not only operate under the effects of uncertainty but also actively create or reduce environmental uncertainty through their actions (Jauch & Kraft, 1986). Nevertheless, SMEs' intrinsic limitations and their marginal roles as actors of the international economy make it reasonable to consider that such strategies are not accessible to them. In this thesis, therefore, I address uncertainty as an aspect of firms' international environment.

3.1.1. Uncertainty in (international) entrepreneurship research

International entrepreneurship (IE), being the study of the entrepreneurial activity that crosses national borders (McDougall & Oviatt, 2000; Oviatt & McDougall, 2005), tends to focus on the experience of entrepreneurs and their ventures (Magnani & Zucchella, 2019). For authors like Liesch et al. (2011), IE highlights how firms are not necessarily affected by the uncertainty of foreign markets, reporting about inexperienced firms that are able to venture abroad successfully at a very young age. Still, uncertainty represents the "natural condition" of the decisions studied by IE scholarship as much as in the study of entrepreneurship processes (Magnani & Zucchella, 2019, p. 132).

Drawing on the entrepreneurship tradition, uncertainty can be more properly identified with a situation of opportunity creation than with processes of opportunity discovery or recognition (K. D. Miller, 2007). This means a situation in which opportunities come into existence as a direct result of entrepreneurial action, deriving from decisions that are made under conditions of insufficient information (Alvarez & Barney, 2007). Since the international environment offers more challenging conditions to potential entrepreneurs, the uncertainty associated with creating opportunities abroad can be considered to be more pronounced (Butler, Doktor, & Lins, 2010). Some of the problems leading to such a discomfort caused by uncertainty abroad include the liabilities of being a foreigner (Zaheer, 1995) and lacking relevant connections in international markets (Johanson & Vahlne, 2009).

In light of the uncertainty underlining opportunity creation processes, the success of an entrepreneurial venture is considered to be “difficult or impossible to predict” (Goss & Sadler-Smith, 2018, p. 222). Nevertheless, the way entrepreneurs perceive uncertainty and their ability to function properly in uncertain environments is believed to be relevant in defining whether they can thrive or not in an international setting (Butler et al., 2010). This idea reflects IE’s roots in entrepreneurship literature, which leads scholars to understand the fate of (international) new ventures as highly dependent on entrepreneurs’ experience, unique competencies, and individual cognition (Jones & Casulli, 2014; McDougall, Shane, & Oviatt, 1994). If a new venture is successful, it is (at least partially) because the entrepreneur had a unique creative insight, leveraged the available resources, and set up a business with the proper motivation and ability, despite the odds against it.

Maybe because of this perspective, (international) entrepreneurship literature tends to focus on phenomena involving perceived uncertainty rather than objective uncertainty (c.f., Jiang & Tornikoski, 2019; Magnani & Zucchella, 2018; McKelvie, Haynie, & Gustavsson, 2011; Packard, Clark, & Klein, 2017). In other words, it addresses uncertainty and its effects as seen by the eyes of the individual entrepreneur instead of understanding objective drivers of uncertainty and their potential effects. Such a perceived uncertainty is identified, for instance, in entrepreneurs’ ability to understand their (international) environments, predict the impacts of environmental events on their firms, and predict the likely consequences of alternative response choices (McKelvie et al., 2011; Milliken, 1987).

3.1.2. Uncertainty in conventional firm internationalization

Perceived distance is not only addressed by IE studies but also finds its place in conventional IB literature. This is exemplified by the initial versions of the Uppsala Model (Johanson & Vahlne, 1977; Johanson & Wiedersheim-Paul, 1975) and the connection that they make between uncertainty and psychic distance – i.e., the subjective differences that individuals or groups perceive to exist between countries (Håkanson & Ambos, 2010). Such a distance is likely higher for markets distant from the firm’s home country, but it is not necessarily connected to physical distance. As firms become more familiar with their host environments, psychic distance decreases and firms feel more comfortable to make higher commitments because of the reduced perceived uncertainty.

In addition to that, IB also talks objectively about uncertainty instead of focusing solely on how firms and decision-makers perceive their world. In this case, IB has approached uncertainty mostly as representing constraining

factors on firms' actions in an international setting (Liesch et al., 2011). While perceived uncertainty can be reduced with increasing knowledge about the foreign market (Hilmersson & Jansson, 2012), accumulated knowledge is less likely to decrease objective uncertainty because foreign market environments can be perceived as inherently complex and dynamic. This idea makes room for acknowledging that the environment may undergo frequent unknown changes, making the outcomes of any chosen course of action unpredictable (Packard et al., 2017).

According to Aharoni et al. (2011, p. 135-136), conclusions about actions of multinational firms usually derive from the uncertainties that these firms face in variations "in institutional, cultural, and market conditions across countries and from organizational complexity resulting from international expansion". Institutions can be understood as the set of restrictions that define the "rules of the game" to which companies and decision-makers are subject in a given location (North, 1990). Such restrictions are historically constructed and manifest both formal and informal components. Formal aspects of an institutional framework are expressed in market governance tools such as laws, regulations, and tariffs. Culture is one of the most abiding and examined elements in IB studies (Caprar, Devinney, Kirkman, & Caligiuri, 2015) and can be perceived as an informal pillar of a country's institutions (North, 1990).

In this sense, *regulatory uncertainty* is imposed by hazardous governance frameworks in firms' host markets, meaning that the formal rules of the game are not clear there. *Cultural uncertainty*, in turn, exists when firms find unrelated languages, values, or social structures abroad, which make it impossible to anticipate correctly the behavior of foreign actors (Ahsan & Musteen, 2011; López-Duarte & Vidal-Suárez, 2010). Internationalization can also make firms face market and technology problems, which may affect the network of business relationships in which firms are embedded (K. D. Miller, 1993). This can lead them to experience *business network uncertainty*, which regards instability in the future behavior of counterparts, in the outcome of present cooperation, and that which relationships between any two firms can trigger in the network. When business relationships break too often or are frequently disrupted by such instability, firm activity can be compromised due to the interdependence of network relationships and the costs of business relationship development (Ford & Mouzas, 2010; Leonidou, Barnes, & Talias, 2006; Sarasvathy et al., 2014).

Altogether, it seems clear that IE and IB literature assume different perspectives and offer different treatments to the problem of uncertainty in firm internationalization. Although the former seems to be a more natural domain to locate a study involving SMEs, the latter presents better tools to a

discussion of internationalization decision-making addressing the uncertainty that is inherent to firms' international activity. This is the case of this thesis, which studies the adoption of the control principle by SMEs under the uncertainties imposed by internationalization.

In fact, one can consider that Sarasvathy (2001) was actually thinking of objective uncertainty when she first formulated Effectuation theory. Hence, a focus on objective uncertainty in an investigation involving the control principle seems natural. Sarasvathy's (2001) real-life examples of uncertainty include "dealing with environmental pollution, global warming, genetic cloning, and commercialization of innovations—particularly radical innovations" (p. 251). One should agree that these examples configure situations that are uncertain for their own nature, regardless of who looks at them. Her illustration of the Effectuation process then proceeds as follows, based on the allegory of a player who draws balls out of a urn:

"I do not care what color the balls are in the urn or what their underlying distribution is. If I am playing a game where drawing a red ball wins \$50, I will go acquire red balls and put them in the urn. I will also look for other people who have red balls and induce them to put them in the urn and play the game as my partners. As time goes by, there will be so many red balls in the distribution as to make almost every draw a red ball. Furthermore, if neither I nor my acquaintances have red balls, but only green ones, we will put enough of them in the urn so as to make the original game obsolete and create a new game where green balls win." (Sarasvathy, 2001, p. 252)

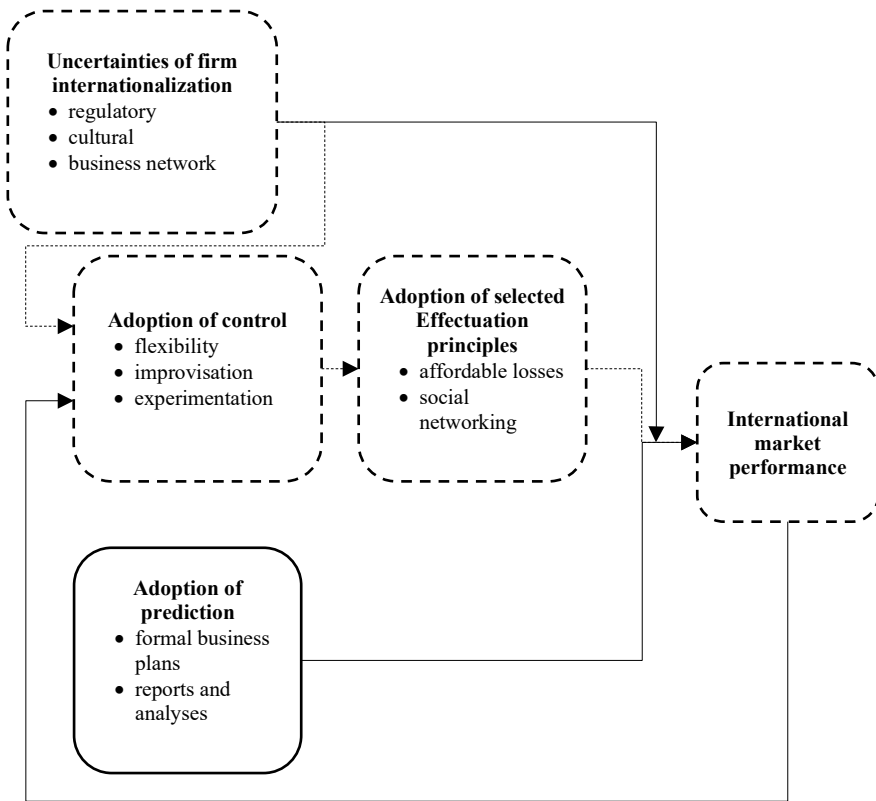
Again, the urn out of which someone draws balls offers an uncertainty that exists objectively, regardless of who is playing this game. Sarasvathy talks about objective uncertainty because she is considering external environments that are inherently non-deterministic. Such an attribute is what makes room for the agency of the entrepreneur whose efforts may create new products, new firms, and new markets. Like in the cases discussed by Sarasvathy, operating in international markets exposes SMEs to contexts that are far from being deterministic and make plenty of room for creative action. This perspective does not seem to be the preferred one in IE research, for which reason this thesis draws on conventional IB knowledge.

3.2. A general theoretical framework for this study

In this section, I present a general theoretical framework that covers the key theoretical constructs discussed in this thesis and their proposed theoretical relationships. As Figure 4 indicates, the framework defines a chain of relationships, from the impacts of the uncertainties of firm internationalization

through the adoption of control-based strategies, leading ultimately to international market performance. Only a subset of the theoretical relationships in that figure is examined in the three papers considered in this thesis, namely the constructs and paths represented by dashed lines. The purpose of this model is to map a comprehensive (but not exhaustive) explanation of the role of control in SME internationalization, setting up the theoretical context for this thesis and laying the foundations for additional papers that can continue this investigation. The proposed theoretical relationships are discussed below.

Figure 4. A general theoretical framework



As it has been assumed in Effectuation-related research, the uncertainties of internationalization promote a context in which firms may find it beneficial to adopt control-based strategies. Such uncertainties are not only related to cross-border differences in terms of regulatory and cultural problems but also include the network dynamics that are more challenging in an international setting (Sarasvathy et al., 2014). I consider this network component in the

concept of network uncertainty, which is listed among the uncertainties of firm internationalization. Generally speaking, uncertainty-heavy environments hinder firms' attempts to look into the future and establish formal goals and structured plans to achieve those goals (Magnani & Zucchella, 2019). It is in this scenario that Sarasvathy (2001) outlined the utility of Effectuation, considering that it helps firms create their own futures without depending on strong assumptions about their environments. Given that the control principle makes the centerpiece of Effectuation theory (Sarasvathy, 2001, 2008), and it is what actually makes this approach to decision-making different from previous traditions (Wiltbank et al., 2006), it is reasonable to expect that control remains useful under the uncertainties of internationalization, regardless of the other principles of Effectuation.

In spite of this thesis' focus on the control principle, it is impossible not to consider the empirical evidence that has been accumulated on the benefits of Effectuation for firms, particularly for SMEs. In particular, affordable losses, being Effectuation's preferred criterion for choosing among alternatives, seems to: i) allow SMEs to improve their survival chances by focusing on their cost structure; and ii) make better resource allocation decisions by following incremental commitments (Dew, Sarasvathy, Read, & Wiltbank, 2009; Martina, 2020). Social networking should also be beneficial, leading to unstructured interactions that are likely to expand firms' resources and to help them materialize novel opportunities in a serendipitous way (Bai & Johanson, 2018; Dew, 2009; Engel, Kaandorp, & Elfring, 2017). For this reason, I consider that such principles of Effectuation participate in the mediation of the performance effects stemming from control-based strategies.

Besides these relationships, it is reasonable to acknowledge that international market performance (Katsikeas, Leonidou, & Morgan, 2000) does not depend exclusively on the adoption of control-based strategy but may also benefit from some use of formal planning. On one hand, advocates of planning efforts have historically defended the utility of planning even under conditions of uncertainty (Wiltbank et al., 2006). On another hand, studies of Effectuation have started to agree that causation (i.e., planning-based reasoning) can also be useful to SMEs under some circumstances (e.g., Smolka, Verheul, Burmeister-Lamp, & Heugens, 2018; Yu, Tao, Tao, Xia, & Li, 2018).

It is similarly reasonable to consider that the uncertainties of firm internationalization not only drive firm behavior but also interfere with the efficiency of the strategies that these firms adopt. Accordingly, the different institutional, cultural, and network challenges that they encounter abroad translate into business environments with distinct quality (Doh, Teegen, & Mudambi, 2004; Luthans, Stajkovic, & Ibrayeva, 2000), communication

problems and difficulty to interact with customers (Hong & Lee, 2015; Malhotra, Lin, & Farrell, 2016), and high costs for maintaining, developing, and managing foreign business networks (Johanson & Vahlne, 2009; Leonidou et al., 2006; Street & Cameron, 2007). This seems to be valid regardless of the strategy adopted by SMEs.

Finally, one can expect that international market performance feeds back into the decision-making process associated with internationalization. In fact, the capacity for learning from the past and overcoming failures is a relevant aspect of international expansion (Dominguez and Mayrhofer 2017; Gunasekaran et al. 2011; Welch and Welch 2009). The experiential knowledge derived from such events can be an important piece in firms' subsequent internationalization decisions (Eriksson et al. 1997) and, especially for SMEs, this learning may represent the difference between survival and bankruptcy (Shepherd et al. 2000).

In spite of that, the empirical papers in this thesis focus on the relationships between uncertainty and control-based decision making (Paper II), and the performance effects of such decision-making approach as mediated by selected principles of Effectuation (Paper III). The constructs and relationships focused on those papers appear in dashed lines in Figure 4. The conceptual paper (Paper I) helps to position control-based strategies in the broad domain of strategic decision-making research and to critically discuss the way control and Effectuation have been addressed in the literature. The remaining relationships represented in Figure 4 will be explored in future papers.

3.3. Country as context: The role of institutions

Because the uncertainties of firm internationalization differ in terms of their operating mechanisms and dynamics, they are likely to trigger different behaviors in SMEs depending on their background and experience with uncertainty. In a general sense, any role such uncertainty types play in determining SME decision-making abroad may depend on the unique institutional mix and resource endowments that shape firm behavior in emerging and developed economies (Cuervo-Cazurra, Ciravegna, Melgarejo, & Lopez, 2018). Even though both IB and IE literature have for a long time considered that smaller firms from emerging and developed economies tend to differ in their strategic behavior, such a comparative analysis is seldom made in received research (Ciravegna, Lopez, & Kundu, 2014; Jones, Coviello, & Tang, 2011; Kiss, Danis, & Cavusgil, 2012).

In this thesis, I enrich the discussion of the framework outlined in Figure 4 with comparisons between results for SMEs from emerging and developed countries. Although such a comparison may seem too aggregated, it allows one to draw on insights from conventional IB literature regarding the unique behavior of developed and emerging country firms and their specific contextual influences. This includes, for instance, the recognition that developed market firms tend to enjoy superior advantages relative to their emerging country counterparts, and that companies internationalizing from emerging countries tend to face specific disadvantages when operating in the foreign market (e.g., Cuervo-Cazurra, 2012; Hernandez & Guillén, 2018; Madhok & Keyhani, 2012; Meyer & Peng, 2016; Ramamurti, 2012; Wright, Filatotchev, Hoskisson, & Peng, 2005).

Following the World Bank's classification based on Gross National Income per capita, emerging markets can be defined as countries listed as either lower-middle-income economies (\$1,026 to \$3,995) or upper-middle-income economies (\$3,996 to \$12,375) (World Bank Data Team, 2019). A total of 107 countries satisfy this definition, including BRIC (Brazil, Russia, India, and China) countries. Other classifications are available, including one by the International Monetary Fund (based on per capita income level, export diversification, and degree of integration into the global financial system) and another one by the United Nations Development Programme (based on Human Development Index) (Advocates for International Development, 2020), in addition to lists provided by international rating agencies.

Behind the different country classification systems, there are efforts to seize the development degree of the institutional environment in different countries. The development degree of institutions affects the efficiency of the activities of the companies submitted to those institutions. Influences of the institutional environment could be practically ignored until recently, while researchers had their attention focused on companies based in developed countries. They could ignore the relevance of institutions precisely because of the relatively clear and functional rules that these countries usually feature. With the increasing interest in emerging economies and their companies in recent decades, however, the contextual influence of institutions becomes an essential element in understanding phenomena involving firms from these locations (Meyer & Peng, 2016; Wright et al., 2005).

Well-developed institutions offer stability and reduce the costs of economic activity, due to a better availability of resources and information and greater security for establishing contracts (North, 1990; Williamson, 2000). In emerging markets, the low effectiveness or absence of institutional support often creates obstacles such as excessive bureaucracy, legal barriers, funding restrictions, lack of qualified labor, and competition problems (Khanna,

Palepu, & Sinha, 2005; Monticelli, Calixto, Vasconcellos, & Garrido, 2017). To overcome these issues, companies often need to make use of specific organizational solutions that internalize such inefficiencies (Doh, Rodrigues, Saka-Helmhout, & Makhija, 2017), or rely on informal practices that appeal to trust and relationship building (Puffer, McCarthy, & Boisot, 2010). The speed and unpredictability with which regulations change and crises occur in these locations, however, represent an important source of contextual uncertainty and affect the ability of managers to deal with market requirements and commit to long-term investments (Meyer, 2001; Nicholls-Nixon, Castilla, Garcia, & Pesquera, 2011).

4. Research design and methodology

This chapter presents the methodological choices adopted in this thesis. It begins by describing the quantitative research design selected, after which it details the sampling and data collection procedures and the analysis techniques employed.

4.1. Research design

The choice between quantitative and qualitative methods must observe which is the more pressing issue in the investigation: the acquisition of close and contextualized understanding, or the search for distant and generalizable evidence (Birkinshaw, Brannen, & Tung, 2011). To this extent, this thesis relies on a large-scale survey research project, which I was able to join during my stay as a Visiting Researcher at Uppsala University in 2017. Survey research involves the collection of structured data about the individuals in a sample, from which generalizations or inferences about their original population can be made (Ghuri & Gronhaug, 2010). Such generalizations result from the examination of patterns and regularities in variables operationalized with the surveyed data, using quantitative techniques to assess relationships hypothesized among those variables.

Table 2 shows the collection of studies included in this thesis. Paper I is a conceptual paper that combines traditional data collection and analysis techniques employed in structured literature reviews, on the one side, with topic modeling tools, on the other. Topic modeling is a computer-aided method increasingly employed by management and social sciences for inferring the thematic structure latent in large collections of documents (Blei, 2012; Hannigan et al., 2019; Storopoli, 2019). Both Papers II and III draw on data coming from the same survey project to evaluate relationships hypothesized for the population of SMEs with international activities, but focus on different subsets of that data. Moreover, they also differ in their data analysis techniques, which were selected according to the type of relationship investigated in each paper.

Table 2. Overview of papers included in this thesis

Study	Objective	Data	Analysis
Paper I	To structure a systematic literature review of strategic decision-making, in order to subsidize critical discussions of the place of Control and Effectuation in this field.	Bibliographic data	Author co-citation analysis Topic modeling
Paper II	To examine a single relationship between one dependent variable (adoption of control-based strategies) and a set of independent variables (uncertainties of firm internationalization)	Survey data on emerging and developed country SMEs	Multiple regression analysis
Paper III	To examine relationships between control-based strategies, selected principles of Effectuation, and international market performance	Survey data on emerging country SMEs	PLS-SEM

While Paper II draws on survey data from both emerging and developed country SMEs, Paper III focuses on survey data from emerging country SMEs only. Such a choice was motivated by the fact that (SME) international performance is a complex phenomenon with several potential determinants (G. A. Knight, 2001; Pangarkar, 2008; Prange & Pinho, 2017). If data from both emerging and developed country firms entered the estimation of the model discussed in Paper III, the chances that results could mask the influence of omitted variables would escalate. The focus on emerging country SMEs thus limits the influence of extraneous factors on the relationships under discussion in that paper, as long as the generalization of findings respects the scope of the data. The same is not a problem in Paper III, given that discussions about the adoption of control-based strategies have almost exclusively focused on the uncertainty levels that firms face. This means that the use of the whole sample benefits Paper III: it makes it possible to explore larger ranges of uncertainty effects, given that the data represents firms with a more diversified set of home and host countries.

Paper II employs a multiple regression analysis for its focus on a single relationship between one dependent variable (adoption of control-based strategies) and a set of independent variables (uncertainties of firm

internationalization). Paper III addresses multiple relationships involving control-based strategies and selected principles of Effectuation, focusing on explaining international market performance. For that purpose, it uses Partial Least Squares modeling (PLS), which is a variance-based structural equation modeling (SEM) technique that has achieved increased popularity due to its capacity to handle different data types and inadequacies (Hair, Hult, Ringle, & Sarstedt, 2014) and support predictive and theory development research (Henseler et al., 2014; Richter, Sinkovics, Ringle, & Schlägel, 2016). One can consider that PLS-SEM operates like a multiple regression analysis, selecting regression parameters that maximize the variance explained in the endogenous variables (Hair, Hult, et al., 2014).

4.2. Quantitative survey research

4.2.1. Sampling and data collection procedures

By the time I joined the survey research project in Uppsala, interviews had already been conducted with SMEs in China, Poland, and Sweden, and another survey wave was about to start in Italy. Local researchers implemented data collection in each country, following shared guidelines. My participation in that survey project made me responsible for collecting data from Brazilian SMEs.

The set of countries included in the survey project constitutes a relevant sample for the analyses required in this thesis, allowing for useful comparisons between groups of countries representing emerging and developed markets. Accordingly, Brazil, China, and Poland represent the most important emerging markets in Latin America, Asia, and Central Europe (PwC, 2017). While the former two are maybe two of the most iconic emerging markets, Poland, even though it has been upgraded to a “developed market” status in September 2018, could still be considered an emerging market at the time of data collection. Italy and Sweden, in turn, represent traditional developed countries with mature SME ecosystems that have received significant attention in internationalization studies (Ciravegna, Lopez, et al., 2014; Oparaocha, 2015). Altogether, homogeneity in multi-country samples allows the control of external factors, while the deliberate introduction of heterogeneity in the sample can increase the internal validity of the study and contribute to the generalization of the results (Reynolds, Simintiras, & Diamantopoulos, 2003; Yang, Wang, & Su, 2006).

Due to the absence of comprehensive databases for the identification of SMEs, especially in emerging markets (Batjargal et al., 2013), several sources

were used to compile a list of companies that could fit the survey research project, including government databases, consultancy reports, and online search engines. Data collection took place in China and Sweden in 2015, and in Poland in 2016, while it started in Brazil and Italy in mid-2017 and progressed until 2018, as detailed in Table 3.

Table 3. Information about data collection in each country

	Year	Data source	Geographic coverage	Initial sample	Interviews	Response rate
Sweden	2015	- Statistics Sweden	Two of Sweden's main cities and surroundings	Unknown	168	Unknown
China	2015	- Foreign Trade Commission of each city - Ministry of Commerce of the People's Republic of China - Customs in each city	Five cities in China's most developed regions, where private SMEs are dominant	1,288	228	17.7%
Brazil	2017-18	- Center for Studies and Research in Administration - Ministry of Industry, Foreign Trade and Services - Consulting reports - Online search engines	National territory	1,270	143	11.3%
Italy	2017-18	- AIDA Database	North and Central regions of the country	5,124	185	3.6%
Poland	2016	- Central Statistical Office of Poland - Market research company	Top 10 cities in Poland and surroundings	450	152	33.8%

Except for China, the European SME criterion based on firm size was adopted in all countries (up to 250 employees) (European Commission, 2005). In accordance with local legislation, Chinese companies with up to 300 people were considered as SMEs (Xiangfeng, 2008). Observing such local specificities is important, given that SMEs ultimately represent an artificial

category of companies induced by industrial and commercial policy thresholds (WTO, 2016). In addition to firm size, the sampling criteria focused on firms with manufacturing activity, engaged in international trade (ie, with foreign sales in the last three years), featuring domestic ownership, and with independent operations (ie, with decision-making autonomy over their international activities).

In each country, firms were randomly selected from a compiled list of potential companies for the implementation of the interviews. Each company received an initial phone contact, in order to confirm its adequacy with the sampling criteria and obtain the name and e-mail of the person responsible for its international operations. Then, a standard invitation was sent to the identified email addresses, detailing the context of the interview and promising anonymity in all material produced from the study. This digital invitation was followed by phone contacts after one and three weeks, on average, in order to obtain better response rates.

The response rate varied between 3.6% in Italy and 33.8% in Poland, which can be considered adequate in an international research context (Harzing, Reiche, & Pudelko, 2013). The interviews followed a structured questionnaire (Appendix) and were carried out by telephone or in-person (Leeuw, 2005), by a member of the survey project or by a trained analyst. They followed a structured script and lasted, on average, 40 minutes, involving interviewees with managerial functions and those responsible for the external operations of their companies (Coordinator, Manager, Director, or CEO/Owner). The questionnaire was developed in English and then translated into the language of each country, with the review of experienced native researchers not involved in the research. In addition, reverse translation was also used to guarantee the equivalence of questions between countries (Brislin, 1970).

After excluding incomplete questionnaires, the final sample added to 851 SMEs, including 133 companies from Brazil, 215 from China, 183 from Italy, 152 from Poland, and 168 from Sweden. The demographic profile of the companies present in the final sample of each country appears in Table 4. Papers II and III draw on subsamples of such dataset according to their focus on emerging and developed economies and the availability of data for the variables of interest in each paper. Unfortunately, additional profile information, such as industry classification, is not available for all countries and, hence, it is not discussed here.

Due to the efforts taken to ensure sampling equivalence among the selected countries, the country differences reported in Table 4 can be believed to reflect variations in the profile of the SME population in each location. Hence, Brazilian and Chinese SMEs seem to be the largest firms in the sample, with approximately twice the number of employees of European firms. Chinese

companies are the youngest ones, while Brazilian companies are more similar to the older SMEs in the sample, which can be found in Italy and Sweden. Polish SMEs exhibit intermediary ages. Interviewees' firm experience follows a similar distribution, with Chinese managers displaying the lowest levels of firm experience in the sample whereas Italian and Swedish managers have the longest tenures.

Table 4. Sample profile (standard deviations in parenthesis)

	Brazil (n=133)	China (n=215)	Italy (n=183)	Poland (n=152)	Sweden (n=168)	Total (n=851)
Size (number of employees)	102.88 (85.25)	100.88 (86.00)	49.89 (54.08)	50.66 (51.34)	45.27 (60.62)	70.28 (74.11)
Firm age (years)	30.33 (19.84)	8.90 (6.28)	36.15 (25.19)	16.60 (11.02)	39.90 (30.31)	25.61 (23.70)
Firm experience (years)	11.25 (9.15)	5.11 (3.52)	17.91 (10.77)	12.08 (7.14)	15.55 (10.29)	12.13 (9.64)

4.2.2. Survey research analysis

As previously mentioned, data analysis in the empirical papers followed different techniques. Paper II implemented linear regression analysis whereas Paper III implemented PLS-SEM. These choices reflect differences in the model estimated in each paper, in terms of number and type of relationships (see Table 2). Nevertheless, PLS-SEM implements a logic that selects regression parameters in a system of multiple regression equations in order to maximize the variance explained for the dependent variables (Hair, Hult, et al., 2014). This means that the methodologies adopted in both papers follow similar paradigms from a statistical perspective. Such a scenario would be different if one of the papers adopted conventional covariance-based SEM (CB-SEM), which seeks to estimate how close a theoretical model is to the covariance matrix observed in a given sample.

PLS-SEM models still offer the advantage of softening demands that methods such as CB-SEM impose on measurement scales, sample size, and residual distributions, while remaining robust against inadequacies such as multicollinearity, asymmetry, and omitted variable biases (Cassel, Hackl, & Westlund, 1999; Hair, Hult, et al., 2014). These characteristics make PLS a choice particularly appropriate when the research involves exploratory and theory development objectives (Henseler et al., 2014; Richter et al., 2016). This is the case of Paper III, which not only deals with an unconventional construct such as control-based strategies but also implements

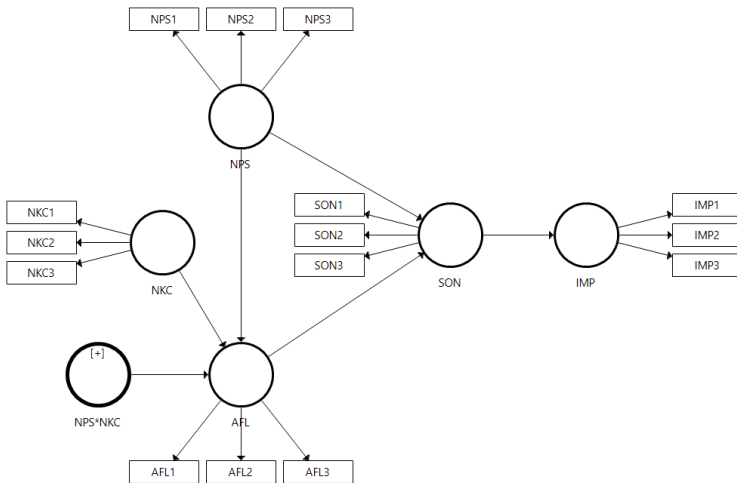
operationalizations of selected principles of Effectuation without employing established scales (Grégoire & Cherchem, 2019). The software adopted in the analysis of Paper III was SmartPLS 3 (Ringle, Wende, & Becker, 2015), whereas Paper II relied on SPSS 22 (Field, 2013).

Paper II assesses the relationship between control-based strategy (also called non-predictive strategy, NPS) as the dependent variable, and regulatory uncertainty (RQ), cultural uncertainty (CCL), and business network stability (BNS) as independent variables. BNS is taken as a reverse proxy for business network uncertainty. Country of origin (EM) is evaluated as a moderator for the independent variables. The regression equation estimated in Paper II thus takes the form of Eq. 1 (control variables omitted). In that equation, each construct is a factor extracted from the dataset based on a confirmatory factor analysis, whose adequacy is assessed in terms of validity, reliability, and fit statistics (Hair, Black, Babin, & Anderson, 2014). Also, β_0 is the intercept and $\beta_1 \dots \beta_7$ represent regression parameters, while ε is the residual.

$$NPS = \beta_0 + \beta_1 RQ + \beta_2 CCL + \beta_3 BNS + \beta_4 EM + \beta_5 RQ * EM + \beta_6 CCL * EM + \beta_7 BNS * EM + \varepsilon \quad (\text{Eq. 1})$$

Paper III evaluates a system of relationships involving control-based strategy (or non-predictive strategy, NPS), affordable losses (AFL), social networking (SON), and the constraining effect of business network knowledge circulation (NKC). These constructs are organized in a structural model such as that of Figure 5 (control variables omitted), with international market performance (IMP) as the main dependent variable.

Figure 5. Path model of Paper III



The estimation of a PLS model solves a system of multiple regression equations that has as many equations as the number of endogenous variables, which represent independent variables in each equation. Hence, the model represented in Figure 5 translates into a system with three regression equations, numbered Eqs. 2 to 4. Each construct is associated with latent variable scores computed by the PLS software, based on the values of the associated observed variables and their respective estimated weights and measurement errors. Additionally, the parameters β_1' ... β_3''' represent path coefficients estimated by the PLS software and ε' ... ε''' are error terms. The PLS algorithm runs on standardized raw input data and latent variable scores (Hair, Hult, et al., 2014), for which reason there are no intercepts available in Eqs. 2 to 4.

$$IMP = \beta_1' SON + \varepsilon' \quad (\text{Eq. 2})$$

$$SON = \beta_1'' NPS + \beta_2'' AFL + \varepsilon'' \quad (\text{Eq. 3})$$

$$AFL = \beta_1''' NPS + \beta_2''' NKC + \beta_3''' NPS * NKC + \varepsilon''' \quad (\text{Eq. 4})$$

The evaluation of a model like that in Figure 5 starts with the assessment of its constructs in terms of their validity and reliability. After that, the path coefficients that represent the hypothesized relationships can be discussed.

4.2.3. Assessment of biases in the survey data

The possibility of biases affecting the survey data represents concerns requiring attention in the analysis. First, there is the possibility of non-respondent bias, meaning that respondents differ substantially from those who did not respond to the survey, which would compromise the representativeness of the sample (Armstrong & Overton, 1977). A popular way of assessing this bias is by comparing early and late respondents of the survey, considering that incentives and motivations intrinsically different between both groups make late respondents a proxy for non-respondents (Rogelberg & Stanton, 2007). Responses from this group are usually obtained after expected deadlines and only thanks to one or more reminders. After comparing groups of initial and final respondents in each country using t-tests, both in terms of age and size of companies, I found no evidence of such bias.

Another potential bias could result from relying on only one interviewee per firm, which may produce misleading data (Bowman & Ambrosin, 1997). One complicating issue with this type of bias is that it usually cannot be detected through conventional quantitative techniques (Roh, Whipple, & Boyer, 2013). Nevertheless, one can assume that the influence of single

respondent bias in the considered data is limited. This is a reasonable assumption given that SMEs are marked by concentration of decision power (Andersson & Florén, 2008; Lefebvre et al., 1997), meaning that individual decision-makers can be expected to be well informed about their businesses. Moreover, one can assume that interviews involved the most knowledgeable individuals available in each company given that invitations were sent to the person responsible for international operations at each of them (Kumar, Stern, & Anderson, 1993).

Despite issues with the reliability of the selected interviewees, the fact that the primary data used in this thesis comes from a survey instrument applied at a single point in time, involving self-report measures, may raise concerns regarding the influence of what can be termed *common method bias* (CMB) (Chang, Van Witteloostuijn, & Eden, 2010). When contaminated by CMB, data tend to exhibit artificial or inflated correlations that reflect the way the data was collected rather than variance attributable to the constructs and their measures. In a survey context, artificial correlations may arise out of respondents' consistency motifs, mood states, acquiescence propensity, and social desirability expectations, among other influences (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Podsakoff & Organ, 1986).

Some researchers have argued that the problem of CMB is often overstated and has become an urban legend (Chan, 2009; Spector, 2006). Still, there is strong agreement about the importance of employing the available means for ruling out the possibility of CMB influences confounding the analyses (Chang et al., 2010; Conway & Lance, 2010; Pace, 2010). To reduce the exposure of this thesis to CMB, I implemented both *ex-ante* and *post-hoc* approaches recommended in reference literature (Chang et al., 2010; Podsakoff et al., 2003). I started by guaranteeing anonymity to the interviewees and ensuring that there were no right or wrong answers. This is useful for obtaining honest answers, reducing the possibility of having the interviewees manipulating their rates or trying to imagine what answers would be expected from them. The questions that measure latent variables were also distributed throughout the questionnaire, thereby limiting potential artificial correlations.

The fact that the data came from a survey project with interviews implemented by different researchers in each country further helps in the prevention of CMB. Such an implementation strategy protects the data against personal biases arising from the particularities and expectations of a single interviewer. In order to assess the potential presence of CMB, I performed *post-hoc* analyses for each of the data sets employed in Papers II and III. First, a Harman single factor test indicated that the first factor of the non-rotated solution of an exploratory factor analysis did not account for the total variance in the data. Low zero-order correlations and value inflation factors (VIFs)

were also interpreted as signs of limited multicollinearity. While in Paper II VIFs were obtained from SPSS' outputs for the multiple regression analysis, in Paper III they came from the complete collinearity test that Kock (2015) recommended to assess CMB in PLS-based studies. In Paper II, the combination of primary and secondary data in the operationalization of the main constructs further contributes to minimizing the possibility of CMB.

An additional concern in multi-country studies like this thesis is the existence of invariance in the adopted measures, which means considering whether item measurements are consistent across national subgroups (Steenkamp & Baumgartner, 1998; Vandenberg & Lance, 2000). To address this issue, bootstrap samples were used to compare item loads across the various pairs of countries making the samples of each empirical paper (Cheung & Lau, 2012), using Bonferroni adjustment to obtain results with 95% of statistical confidence without inflating Type I errors in the multiple comparisons (Hair, Black, et al., 2014). This method allowed to compare the confidence intervals for the items observed in each country group, without any previous assumption about the distribution profile of the data. If the country-specific confidence intervals for a given indicator overlap among groups, it can be assumed that there are no significant differences between countries for that item (Sarstedt, Henseler, & Ringle, 2011). With this procedure, I identified no concerning invariance problem.

5. Summary of the papers

This chapter summarizes the three papers considered in this thesis. An overview of the papers, including the specific research question addressed in each paper, as well as the dependent and independent variables focused by each of them and their main findings, is presented in Table 5.

Paper I: Decades of studies on how to make strategic decisions: Structure of the field and research opportunities

The first paper seeks to shed light on the overlaps, complementarities, and knowledge gaps among the most influential perspectives of strategic decision-making research. Strategic decisions are the infrequent and complex decisions capable of affecting organizational health and survival, whose importance emanates from the actions, resource commitment, and precedents that follow them. Despite historical interest in strategic decision-making, fragmented and conflicting approaches hamper theory development in the field. Such a fragmentation stems, at least in part, from the variety of disciplines examining decision problems independently. On the one hand, competition between scholarly traditions causes confusion about concepts, makes it harder to work collaboratively, and produces conflicting criteria for evaluating research. On the other hand, an integrated view of decision problems is critical as technologies revolutionize the very act of making decisions, and as firms operate under increasingly more volatile, uncertain, complex, and ambiguous environments.

In light of that, Paper I systematically reviews the received literature on strategic decision-making, in order to make sense of its structure and find ways of moving forward. It departs from a multidisciplinary sample of 3,204 papers retrieved from Web of Science, combining author co-citation and topic modeling analyses to systematize the academic production that has influenced strategic decision-making research over time. Author co-citation analysis is a bibliographic technique used to group cited authors according to patterns in how they are cited, revealing clusters of scholars that tend to share topics,

frameworks, and research interests. The topics underlining each of such clusters are identified with topic modeling, which is a computer-aided method increasingly employed by management and social sciences for inferring the thematic structure latent in large collections of documents. Such a systematic and quantitative approach answers calls for strengthened methodological rigor in management reviews and is suitable to approach and map the impressive body of knowledge that exists in the research domain in focus.

Results provide a map of the strategic decision-making field and suggestions that should help future research on decision-making and also on broader management issues. In particular, they outline three independent theory development routes influencing the research on strategic decision-making produced between 1990 and 2018: *Environment-oriented*, *Competitiveness-based*, and *Attitude-centered*. Such routes reflect different perspectives on the empirical problem of making strategic decisions, with their own vantage points and preferred frameworks and theories. Sarasvathy's Effectuation, as well as other control-based theories, appear within the Environment-oriented route, which focuses on how decision-makers relate to their environment through their decisions. The paper outlines research opportunities by discussing how scholars can: i) work with the different routes in the context of multilevel research programs; or ii) appreciate the internal diversity and uniqueness of each route for theory development.

Paper II: Uncertainty and entrepreneurial decision-making in SME internationalization

The second paper investigates the determinism in the adoption of non-predictive strategy by small and medium-sized enterprises (SMEs) in their foreign activities. Non-predictive strategy (NPS) gets its name because it deemphasizes prediction efforts and other attitudes that take the environment as given. Instead, it promotes firms' efforts to control how their decision paths unfold by leveraging any available resource and taking the most from unexpected events. NPS has received increasing attention as a decision-making approach useful to help firms navigate the uncertainties of firm internationalization, especially for SMEs. In spite of that, NPS was originally conceived essentially as an option available to firms needing to handle uncertainty-heavy situations. Its adoption was not considered a direct product of external uncertainty as outlined by recent SME internationalization studies.

In general, International Business and International Entrepreneurship researchers have been mostly interested in external environment uncertainty. The model proposed in Paper II, therefore, tests the effects of regulatory,

cultural, and business network uncertainties using data from 755 SMEs from Brazil, China, Poland, Italy, and Sweden. Because such uncertainty types differ in terms of operating mechanisms and dynamics, they may trigger the adoption of NPS differently. Moreover, the way firms react to a given uncertain environment will likely depend on their home market background, due to accumulated experience and competences. The conceptual model thus considers SMEs' home country (developed versus emerging) as a moderator for firms' strategic attitudes in the face of uncertainty.

Results show a negative relationship between regulatory uncertainty and NPS, which is weaker for SMEs from emerging markets than for those from developed markets. They also show a positive relationship between business network uncertainty and NPS, which is stronger for SMEs from emerging markets than for those from developed markets. No significant relationship is identified between cultural uncertainty and NPS, nor the moderating effect of SMEs' home market on this relationship. One could consider that these results reflect the distinct difficulty of effectuating change under regulatory, cultural, and business network uncertainties. NPS seems to be applicable in dealing with business network uncertainty, where human agency has a space to play. Regulatory and cultural uncertainties seem beyond the effectuating influence of human actions in the short term. In terms of the distinct behavior of emerging and developed market SMEs, it is possible that SMEs from the first group of countries perceive NPS as a necessary tool to create and develop business opportunities because of the environment where they grow.

Paper II advances a fine-grained understanding of the relationship between uncertainty and entrepreneurial behavior in SME internationalization. It shows that it is not enough to know that uncertainty matters; it is the specific uncertainty type that matters. The theoretical and empirical comparisons of emerging and developed country SMEs also represent an important contribution, given that such a comparative analysis is rare despite the fact that both IB and IE literature acknowledge its importance. In this sense, Paper II underlines the importance of both host and home markets in shaping how firms act in the face of uncertainty.

Paper III: Effectual internationalization: The role of business and social networks

The third paper addresses the performance implications of the distinct mechanisms represented by business and social networks in the effectual internationalization (i.e., in firms' effectual behavior during internationalization). Despite the growing interest in applying Effectuation's

principles to internationalization studies involving small and medium-sized enterprises (SMEs), potential problems emerge from this convergence between Effectuation theory and internationalization research. While Effectuation addresses opportunity development primarily from the perspective of individuals and their social networks, internationalization theory focuses on firms and their business relationships.

Business and social networks emphasize distinct mechanisms and, therefore, should be distinguished accordingly. This is achieved with the conceptual model explored in Paper III, which departs from Effectuation's overarching principle of non-predictive decision-making and the analysis of affordable losses as the preferred criterion for selecting between action paths. On the one hand, this model considers the role of business networks as contextual boundaries for the individual-level action addressed by Effectuation. Such boundaries are represented by the knowledge circulating in the firms' business networks. On the other hand, the model acknowledges the mediating role of social networking activity in the realization of the performance effects of firms' decisions. The model is tested with data surveyed from 469 SMEs from Brazil, China, and Poland, which are high-profile emerging markets in Latin America, Asia, and Central Europe.

Results support a positive relationship between the use of non-predictive strategies and affordable losses by SMEs, which is negatively moderated by the knowledge circulating in their business networks. Moreover, social networking exerts a full mediation of the effects resulting from both non-predictive strategies and affordable losses, in terms of international market performance. The moderating role of business network knowledge circulation highlights specification issues: the link between SMEs' use of Effectuation and their international performance does not exhibit the same shape in all contexts. The full mediation of social networking pictures social relationships not only as enablers, but also as constraints on firms' international performance: there seems to be no room for performance outcomes from Effectuation outside the dynamism of SMEs' social networks.

Paper III provides a rich understanding of the mechanisms behind the performance of SMEs' effectual internationalization, distinguishing between the roles of business and social networks. In doing so, the paper brings the business network perspective into SMEs' effectual internationalization. The paper also provides quantitative evidence of the impacts of effectuation principles on firm internationalization, which has mostly relied on qualitative evidence. While qualitative studies are certainly important to capture the mechanisms behind processes in a contextualized perspective, quantitative results are necessary to ground more generalizable arguments.

Table 5. An overview of individual papers

Paper	Research question	Explaining concepts (independent variables)	Explained concepts (dependent variables)	Main findings
I	How can the various scholarly traditions of strategic decision-making research be positioned in relation to each another and what are the research opportunities offered by their synergies and differences?	NA	NA	Three theory development routes influenced the research on strategic decision-making produced between 1990 and 2018: Environment-oriented, Competitiveness-based, and Attitude-centered. Such routes reflect different perspectives on the empirical problem of making strategic decisions, with their own vantage points and preferred frameworks and theories. Sarasvathy's Effectuation, as well as other control-based theories, appear within the Environment-oriented route.
II	How do regulatory, cultural, and business network uncertainty influence the adoption of non-predictive strategy by SMEs from emerging and developed economies?	Regulatory uncertainty Cultural uncertainty Business network uncertainty Home market	Non-predictive strategy	The relationship between uncertainty and non-predictive strategy is not strictly positive as implied by recent SME internationalization research. The relationship is negative for regulatory uncertainty and positive for business network uncertainty. Also, SMEs from emerging markets seem to be more generally inclined to adopt non-predictive strategy than those in developed countries.
III	What are the performance implications of the distinct mechanisms represented by business and social networks in the effectual internationalization?	Non predictive strategy Affordable losses Social networking Business network knowledge circulation	International market performance	Business networks represent contextual constraints for the individual action considered in the effectual internationalization, given the knowledge circulating in such networks. Performance effects of that individual action, in turn, are fully mediated by social networking efforts.

6. Concluding discussion

This thesis aims at developing a more general treatment of SME internationalization, depending less on Effectuation and focusing instead on the role of the control principle in internationalization decision-making. The general purpose of this thesis was established as *to explore the role of control in internationalization decision-making, leveraging the discussion of SMEs' foreign expansion*. In order to fulfill this purpose, this thesis investigated the following research questions: (1) Do SMEs use a control-based strategy to make internationalization-related decisions when under the uncertainties of international markets? and (2) How can SMEs benefit from the adoption of a control-based strategy to make internationalization-related decisions under the uncertainties of international markets?

While Paper I supports a critical understanding of the place and role of the control principle in received literature, Paper II addresses the relationship between the adoption of control and the uncertainties that SMEs face during internationalization, and Paper III focuses on the materialization of performance outcomes of such strategy. The three papers were summarized in the previous chapter, in terms of their specific research questions, dependent and independent variables of interest, and main findings. Whereas detailed discussions of these findings and the associated contributions can be found in each paper, in this chapter I bring them together in light of the purpose and research questions of this thesis.

6.1. Main findings

The starting point of this thesis was the limitations of extant internationalization scholarship for understanding and advising SMEs' foreign expansion. With the research reported here, I acknowledge the efforts of those who have applied Effectuation theory to solve this puzzle but I also propose what seems to be a necessary reformulation of this debate. I do so by refocusing the discussion of SME internationalization on the use of control in decision-making and evaluating fundamental assumptions so far overlooked by other scholars.

Paper I revealed that Sarasvathy's Effectuation, as well as other theories that similarly build on the control principle, appear within what can be called Environment-oriented route of theory development on strategic decision-making. This name derives from the theories encompassed in this route, which are generally concerned with how firms relate to their environment through their decisions, elaborating on attitudes that range from flexible adaptation to entrepreneurial creativity. Such a focus makes this route distinct from others mapped in the literature review, among which one route includes conventional planning-based theories and focuses on the role of strategic assets and competencies in decision-making (Competitiveness-based route).

Such a finding of Paper I reinforces the contrast between Effectuation and other control-based theories, on the one side, and theories that Sarasvathy called *Causation*, on the other. It also draws attention to the existence of other control-based theories, like Brown and Eisenhardt's (1997) continuous change and Donald Hambrick's Upper echelons theory (Hambrick et al., 1996). Both of these theories reflect the control principle for their recognition of the creative potential of human action: the former defends intentional and continuous change as a way of addressing the challenges of rapid-changing environments; the latter perceives firms as a reflection of their top managers, in terms of their reactive and creative initiatives. Paper I locates these theories in the same route that features theories related to the adaptive learning paradigm of decision-making, although positioned in a less influential branch. This result shows that Effectuation may not feature all the novelty level that some researchers have attributed it. It also indicates that researchers have largely underestimated the role of control in decision-making.

Researchers have not only underestimated the role of control in decision-making, but they have also oversimplified the contextual applicability of such a principle, as indicated by Paper II. In fact, results of the second paper show that the relationship between uncertainty and non-predictive strategy is not strictly positive as usually implied by recent SME internationalization research. This paper stresses the importance of distinguishing the different uncertainties that firms may face during internationalization, addressing specifically those with origins in regulatory, cultural, and business network issues. The importance of such a differentiation appears once one realizes that only the relationship between business network uncertainty and control was confirmed as positive in the results. The relationship involving regulatory uncertainty reported a negative effect, while the one regarding cultural uncertainty resulted non-significant.

Given that regulatory uncertainty was measured as the difference between regulatory quality (RQ) levels at the home and host countries, as in $RQ_{\text{home}} - RQ_{\text{host}}$, high regulatory uncertainty exists when firms enter countries with

regulatory levels lower than those present in their home countries. Accordingly, it seems reasonable to assume that firms can access and learn about formal institutions and written rules more easily when these are at least as good as those to which they are used in their own country. This means that a Chinese firm will face higher regulatory uncertainty when going into countries with regulations worse than China, like Vietnam, than if it ventures into countries with regulations better than China, like Sweden. The findings of Paper II indicate that such a Chinese firm is more likely to employ a control-based (or non-predictive) strategy when entering Sweden than when going into Vietnam. Although perhaps surprising, this result makes sense if one considers that high regulatory uncertainty may force firms to put more effort into collecting information and doing some preliminary planning in order to be able to operate in a foreign location in the first place.

The assessment of home market effects in Paper II also indicated that emerging market SMEs seem to be more inclined to adopt control than their counterparts from developed countries. Hence, the Chinese firm considered in the above example will be more likely to adopt a control-based strategy than would a developed country firm, regardless of the host country considered. This finding highlights the importance of the focus of Paper III on the experience of emerging market SMEs in the utilization of control, and the related performance outcomes. According to that paper, there is a positive relationship between control-based strategy and international market performance, mediated by selected principles of Effectuation. Two paths were identified, one through social networking and another one going sequentially through the adoption of both affordable losses and social networking.

In this sense, social networking seems to play a key role in the effectual internationalization. On the one hand, it may help firms expand their resources and possible action paths, using pre-commitments to align partners. This role accounts for the mediation of the performance effects of SMEs' focus on the control principle. On another hand, social networking may also provide critical knowledge for firms to understand the value of their resources and reduce their biases in decision-making. This second role accounts for the mediation of the performance effects of control when first considered the adoption of affordable losses as Effectuation's preferred approach to making choices.

In fact, Paper III also found a positive relationship between control and affordable losses, in line with expectations that the control principle leads firms to focus on existing means and makes the cost-side of opportunities more salient to them. Yet, another find of Paper III is that the knowledge circulating in SMEs' business networks is a contingency that makes such a

relationship weaker. Such knowledge increases firms' understanding of what is happening in various parts of their business networks, which may make them more aware of the upside of opportunities and their potential returns (instead of focusing solely on losses). A surprising finding was the identification of a positive direct relationship connecting business network knowledge circulation and affordable losses. One possible interpretation for this finding involves considering that firms may perceive the control of internal costs as the major way to thrive in the market when there is an extensive availability of sensitive knowledge in their business networks.

6.2. The nature of the control principle

The control principle represents a central pillar of this thesis and the three papers that make it. It is examined indirectly in the systematic review reported by Paper I and represents a construct in the theoretical models of Papers II and III (also called non-predictive strategy in these papers). The operationalization of the control principles in these empirical papers does not follow established measurement scales previously established, although it can be related to previous measures of Effectuation and its principles. Yet, the measures adopted in this thesis create coherence among the papers and help in the consolidation of how the control principle can be perceived.

Initially outlined as a general idea behind the Effectuation process (Sarasvathy, 2008), the control principle later became more closely associated with firms' focus on the means available for the creation of new opportunities (e.g., Jiang & Ruling, 2019; Reymen et al., 2015). The empirical operationalization of control in this thesis built on three items, starting from the idea that control implies the incorporation of changes in a firm's strategy, allowing for the accommodation of new decision paths (Mauer et al., 2018). Hence, the first item was: (1) *Entering foreign markets often means that we have to be flexible (NPS1)*. Because control also entails creativity and purposeful creation of alternatives from the resources available to the firm (Sarasvathy, 2001; Wiltbank et al., 2006), the second item was defined as: (2) *Entering foreign markets often means that we have to go out of the box (NPS2)*. Finally, improvisation efforts contribute to promoting and seizing unexpected opportunities and creating new decision paths (Alsos et al., 2019; Evers & O'Gorman, 2011), from which the third item was: (3) *Entering foreign markets often means that we improvised solutions to problems (NPS3)*. Such operationalization was tested and validated in two empirical papers (Papers II and III), employing different methodologies and somewhat distinct samples.

By acknowledging that control manifests flexibility in decision-making (NPS1), this thesis points to an aspect that it shares with theories that emphasize flexible adaptation. From the lessons of Paper I, control-based theories can be positioned in the same theoretical tradition as theories that promote adaptive learning, such as those advanced by authors like Mintzberg and Quinn (Mintzberg, 1994; Quinn, 1980). In fact, both control-based and adaptive theories emphasize the way firms and decision-makers relate to their environment when making decisions. This strategic flexibility is important to accommodate new decision paths and to change routes when appropriate. The key message here is that Effectuation is not so different from extant theories as some may think. At least, it is not so distinct from flexible adaptation than it is from causation.

By indicating that control manifests creativity (NPS 2) and improvisation (NPS3), in turn, this thesis draws attention to two mechanisms that highlight the uniqueness of the control principle: its proactive approach to generating decision options. These mechanisms acknowledge that decision-makers using control are capable of escaping past path-dependencies and events of their surrounding environments to create something new. They materialize decision-makers' discretion in shaping their destiny and working on solutions for their problems. In particular, these mechanisms may be used to connect Effectuation to other control-based theories and coordinate them from a conceptual standpoint. Regardless of coming from entrepreneurship or other fields, it seems fair to expect that any theory stressing the possibility of human action over their environments should be able to acknowledge such aspects.

More than referring to heuristics listed in Effectuation-related studies, therefore, the operationalization of control in this thesis resonates with the already mentioned discussions by March (1978, 1982), about human creativity, and by Weick (1979), about enactment. These are some of the references that Sarasvathy (2001, p. 254) acknowledged as belonging to the intellectual lineage of ideas influencing Effectuation theory. Among other benefits, making such references explicit is important to the extent that other authors criticize Effectuation-related studies exactly for lacking connections with preexisting research (Arend et al., 2015).

6.3. The levels of analysis of the control-based internationalization

Another aspect that is transversal to the papers in this thesis is the discussion of the control-based internationalization across different levels of analysis. As put by Hitt, Beamish, Jackson, and Mathieu (2007), most management

problems involve multilevel phenomena, which are likely to require a convergence rarely seen between macro and micro-level thinking. It is impossible not to talk about multi-level phenomena when it comes to firm internationalization, which configures firm-level action subject to market (or network) and country-level situational influences. This is even more complex when it comes to SME internationalization, which invites researchers to think about the role of individual executives and entrepreneurs, with their particular behaviors, preferences, and biases.

Addressing connections between external uncertainty and the adoption of control in decision-making, Paper II looked at SME internationalization under the influence of uncertainty constraints at the level of networks and countries. As argued by Williamson (2000), these levels represent different aggregations of firms' transaction environments and are not equally subject to the agency and dominance of human action. Constraints at each of those levels were represented in terms of business network uncertainty, at the network level, and regulatory and cultural uncertainties, at the country level. The general interest of this thesis on external rather than internal uncertainty allowed Paper II not to look at levels even more detailed than those, such as that of the individual decision-maker. The focus of this research on objective instead of perceived uncertainty also contributed to that. Accordingly, the discussion was not about how individuals react to perceived levels of uncertainty but rather how objective uncertainties of firm internationalization create a need for the adoption of control.

In Paper III, the debate turned to an analysis involving individual and network-level of analysis. This third paper focused on the performance impacts of the effectual internationalization, leveraging the understanding that a potential conflict between the types of networks acknowledged in Effectuation and internationalization theories remained unsolved. While Effectuation's primary focus is on individuals and their social networks (Reuber, Fischer, & Coviello, 2016, p. 537), internationalization theory's focus is on firms and their business relationships (Galkina & Chetty, 2015, p. 655). As put by Slotte-Kock and Coviello (2010), business and social networks emphasize distinct mechanisms and therefore should be distinguished accordingly. Indeed, the results of Paper III indicate support for considering that those networks play different roles in the effectual internationalization that starts with the adoption of control. Business networks set the context under which firms calibrate their adoption of Effectuation's principles; social networks provide the channel for the materialization of international opportunities and their associated performance outcomes.

Although no specific multi-level methodology was employed in this thesis³, the identification of significant effects connecting variables at the different levels in each of these papers reinforces the multi-level nature of the control-based internationalization. It shows that such a phenomenon is not only about the way individual decision-makers act entrepreneurially to take their firms abroad and expand into new markets. It is also not only about how firms experience an internationalization process while embedded in business networks and country markets. It is about all of that at once.

6.4. Implications for theory

This thesis addresses an object of investigation that is more often seen in international entrepreneurship studies (SMEs) and examines a principle closely related to an entrepreneurship theory (Effectuation). Yet, it establishes connections with more conventional theories found in International Business scholarship in order to examine objective uncertainty and country differences. By leveraging the strengths of each field to cover for the limitations of the other, this thesis develops a discussion that contributes to both IB and IE disciplines.

6.4.1. Relevance to International Business

IB research on firm internationalization usually revolves around a few traditional perspectives, particularly the behavioral internationalization process described by the Uppsala Model in its different versions (Johanson & Vahlne, 1977, 2009) and the economic tradition embodied in the Internalization theory (Buckley & Casson, 1976) and the Eclectic paradigm (Dunning, 1988, 2000, 2001). However, none of these theories properly accounts for the internationalization of SMEs, given that they do not pay enough attention to the relevance that individual action and decision-making issues have for these firms. The unique empirical challenges faced by SMEs (OECD, 2017; WTO, 2016) and the fact that these firms oftentimes do not pursue solely financial goals (Ahmad & Seet, 2009; Walker & Brown, 2004) indicate that SMEs are not simply firms on a path to become larger companies. They may require customized solutions, which makes SMEs and their

³ It is important to mention that tests were performed to identify the possibility of multi-level effects represented in the way firms are aggregated within countries. These tests involved the estimation of linear mixed models employing random variables to account for country-level variance. However, such analyses identified no relevant effect.

internationalization the right phenomenon to be leveraged if one wants to extend conventional IB theories.

In the same way that previous research has retrieved Effectuation theory to explain how SMEs make the decisions that guide their internationalization, this thesis advances in the specification of how such firms employ and benefit from the adoption of control in their internationalization decisions. As explained, the focus on control seems to be a step necessary in emancipating SME internationalization research and unlocking its potential. The papers considered in this thesis characterize SME internationalization as a process that, depending on the surrounding uncertainties, may or may not proceed through the adoption of the control principle. When it does follow control-based strategies, particularly in the case of their application by emerging market SMEs, the performance effects of firms' decisions seem to depend on the individual action characterizing effectual internationalization.

Among conventional internationalization theories, that which may benefit more directly from findings in this thesis is maybe the Uppsala Model. Accordingly, besides representing internationalization as a series of decisions, Johanson and Vahlne (2009, p. 1423) already acknowledged that "internationalization resembles entrepreneurship and may be described as corporate entrepreneurship". Theoretical linkages between Effectuation and internationalization research have also been made mostly in connection with the Uppsala Model. For instance, Fiedler et al. (2017, p. 263) used effectuation to shed lights on "the interplay between commitment, trust creation and learning about opportunities" associated with that model, while Chetty et al. (2015) compared the uncertainty management nature of these two theories to develop their discussion of decision-making in firms' foreign-market selection and entry mode choice. Similar connections were additionally made by Galkina and Chetty (2015), Kalinic et al. (2014), and Ahi et al. (2017). Considering that control is at the heart of Effectuation and is at the center of the discussion developed in this thesis, it makes sense to consider that the findings reported here can have a similar theoretical relevance.

6.4.2. Relevance to International Entrepreneurship

This thesis focused on the international experience of SMEs, which creates potential connections to be explored within the domain of IE scholarship. Yet, it deviates from conventional IE research in several aspects to fulfill the thesis' goals. These precise deviations offer the opportunity of extending the IE domain in a number of ways. First, this thesis deviates from IE by focusing on the discussion of objective rather than perceived uncertainty. Second, it argues against the dependence of SME internationalization studies on Effectuation

theory. Third, it focuses on a theoretical framework that is concerned with the continued international expansion of SMEs instead of with the initial stages of such a process.

As previously argued, IE research tends to put its attention on the experience of entrepreneurs that lead their ventures to cross borders. Its roots in the entrepreneurship field traditionally lead to research questions formulated from the perspective of the individual entrepreneurs: the success of the entrepreneurial firm is framed as closely related to the way those individuals perceive uncertainty and their ability to function properly in uncertain environments. This thesis had to escape such a formulation in order to investigate the adoption of the control principle by firms under the uncertainty that is inherent to firm internationalization. Such uncertainty is objectively imposed onto firms by the reality of venturing abroad, like when entering new countries and dealing with new business actors. Nevertheless, the perspective adopted in this thesis is coherent with Sarasvathy's (2001) early ideas about the adoption of Effectuation in environments that are intrinsically non-deterministic. In this sense, the results of this thesis related to the control principle can help IE researchers formalize and test their assumptions about the conditions for SMEs' adoption of Effectuation during internationalization, which is a choice that they often take for granted (e.g., Fiedler et al., 2017; Kujala & Törnroos, 2018; Sarasvathy et al., 2014).

Despite the potential to help IE researchers interested in applying Effectuation to SME internationalization, this thesis makes the case for emancipating the study of such an empirical phenomenon from that theory. After all, if the control principle is the core piece of Effectuation (Sarasvathy, 2001, 2008) and is what opens new theoretical possibilities in the planning-adaptation debate (Wiltbank et al., 2006), researchers only limit themselves when they tie their research problems to all the principles and assumptions of Effectuation. They also get exposed to the same theoretical and methodological challenges that Effectuation still faces (Arend et al., 2015, 2016; Grégoire & Cherchem, 2019; McKelvie et al., 2019). The results of this thesis indicate how it is possible to theorize around the control principle and relate it to selected principles of Effectuation, which future IE scholars interested in SME internationalization may find useful.

Last, this thesis also focuses on a framework that is concerned with SMEs' continued internationalization. This deviates from standard IE scholarship, which conventionally looks at the first internationalization stages or even the decision to become international in the first place – with some important exceptions, like Oviatt and McDougall (2005). The research reported in this thesis takes a broader look at SME internationalization, discussing rather decisions that help SMEs expand into new markets once they already have

some kind of international activity. The knowledge gained with such a discussion can help IE scholars discuss how firms handle the continuation of their internationalization after the first stages of this process. Such a discussion may add to efforts in bridging IE models such as Born Globals and International New Ventures, on the one side, and established internationalization theories such as the Uppsala Model, on the other (Coviello et al., 2017; Kalinic & Forza, 2012; Paul & Rosado-Serrano, 2019).

6.5. Implications for practice: A microdata analysis perspective

Besides theoretical contributions, the findings of this study deliver practical implications that can be useful for both managers and policy-makers interested in SME internationalization. Such contributions are emphasized by the fact that this study draws on a large survey research project systematically implemented in five countries. For this reason, and in light of the problems that researchers usually face to collect large quantities of reliable primary data from SMEs (Batjargal et al., 2013; Dess & Robinson, 1984), this study configures a unique opportunity to understand how SMEs act when they operate abroad – and extract practical lessons from it.

By highlighting the fact that different types of uncertainty may induce or require different kinds of responses from firms, this investigation motivates managers to reflect upon the nature of their environments and their own ways of dealing with environmental uncertainty. Moreover, this thesis also indicates one way in which SMEs may employ control together with selected principles of Effectuation to pursue international market opportunities, depending on their business network contexts. In particular, such findings may be useful in the development of decision support systems to aid managers in making decisions under difficult and confusing environments abroad.

Decision support systems are computer-based tools that help managers address complex decisions problems by interacting with data and analytic models, increasing “the speed and accuracy of data analysis, while reducing costs, enabling the effective and efficient analysis of large volumes of quantitative data” (Martinsons & Davison, 2007, p. 287). They are largely used in corporate functional management and, within this application domain, mostly in the fields of production and operations management and marketing, transportation, and logistics (Eom & Kim, 2006). These are functional areas closely related to virtually any internationalization process.

It is usual to see decision support systems being discussed in association with planning-based activities (e.g., Dutta, Gupta, Mandal, & Tiwari, 2018;

Koutsoukis, Dominguez - Ballesteros, Lucas, & Mitra, 2000; Völkner & Werners, 2000). Yet, previous researchers have also highlighted approaches to developing decision support systems that capture not only problem-specific knowledge available but also creative thinking provided by the decision-makers (Elam & Mead, 1987; Forgionne & Newman, 2007) and improvisation reasoning (Mendonça, 2007; Mendonça, Beroggi, & Wallace, 2001; Stein, 2011). It is possible, therefore, to argue that decision support systems can be developed even for decision strategies employing non-predictive thinking. Such a tool should be useful to assist managers in the process of making the most varied decisions that they face when they take their firms abroad.

To policy-makers, the findings of this thesis should provide insights that can be used in the design of development policy aimed at fostering SME internationalization. The central role of SMEs in any economy, their role as job creators, and the list of benefits that these firms may get from international activities mean that governments may be, in general, interested in helping these firms to succeed abroad (European Commission, 2010; OECD, 2009, 2017; WTO, 2016). In many countries, this intention materializes in the implementation of export promotion programs targeted at SMEs (Malca, Peña-Vinces, & Acedo, 2019). For such incentives to be effective, however, policy-makers need to understand how SMEs behave in an international setting and what kinds of leverages may be available to support this process. This thesis provides them with information on that sense, which can be used in the development of simulations and counterfactual analyses that should benefit policy development and implementation (Lane, 2020). According to Besley and Davies (2019, p. R49) “a data-driven approach is vital in all areas of public policy, but is particularly important in the context of industrial strategy.”

6.6. Limitations and future research

It is important to notice that the findings presented in this thesis are not free of limitations. One of them is the fact that this thesis addressed SMEs' internationalization-related decisions in a general sense, without a focus on specific decisions such as the decision to go international, foreign market selection, or entry mode choices. It was also not identified whether the SMEs' decisions referred mainly to the maintenance of existing international businesses or to their expansion. These details could be relevant, as past studies have shown that SMEs can use different decision models depending on the type of decision considered (Chetty et al., 2015) or the stage of their international expansion (Kalinic et al., 2014), although sometimes these

results are contradictory (Karami et al., 2020). The measures used here only allow speculation about the most usual way in which SMEs approach international problems broadly defined. Future studies can advance such understanding by investigating individual decisions of SME internationalization.

In addition, I discuss the uses and effects of control-based decisions without explicitly accounting for the potential influence of other strategic approaches, like casual planning. Such effects are acknowledged in my general theoretical framework (Figure 4) but did not find room in the narrow scope of my current papers. Although it was important to focus these papers on the specifics of control-based decision-making in order to give it proper attention, future SME internationalization studies could consider alternative strategic approaches to making decisions in situations of uncertainty, exploring how SMEs combine or alternate between them. A plethora of decision theories are available from the literature review reported in Paper I. Acknowledging such alternative approaches is particularly important as extant research suggests, for instance, that causal reasoning and control-based decisions are not mutually exclusive (e.g., Smolka et al., 2018; Yu et al., 2018).

Another important limitation refers to the use of data coming from a cross-sectional research design to support my analysis. This represents a serious limitation especially in Paper III, where the lack of time lag between the independent and dependent variables prevents the analysis of causal relationships leading to international market performance. Paper II is less impacted since it takes contextual, more stable factors as independent variables. In order to work around the limitations presented by my cross-sectional data, I focused on process linkages implied by theory to understand scenarios where correlation could imply causality. Yet, future studies should prioritize analyses with panel data in order to understand the exact way in which context affects control-based decisions in SME internationalization, leading ultimately to international market performance.

6.7. Final remarks

Received SME internationalization research has made important progress by incorporating Effectuation theory from Entrepreneurship literature to explain the decisions that guide that process, particularly in terms of its use of the control principle. However, this literature has fallen short of acknowledging that adoption of Effectuation is not the only alternative to show control in decision-making. This thesis has focused on closing that gap, exploring specifically the role of control in internationalization-related decisions of

SMEs. The findings of the individual papers showed that SMEs seem more inclined to adopt control-based decisions during internationalization when under uncertainties related to their business networks and when they come from emerging markets. They also revealed that the paths toward the realization of international market performance with control-based decisions seem to involve both firm-level and individual-level dynamics, with social networking playing a critical role. Moreover, those same findings made it possible to draw a picture that clarified the conceptualization of the control principle and hinted on the multi-level nature of control-based internationalization. In spite of their limitations, they hold potential for contributing to International Business and International Entrepreneurship literatures.

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Appendix Survey questionnaire

Interviewer:
Date:
Place:
Company name:
Respondent:
Respondent position in the company:
Respondent experience (years) in the firm:
Respondent experience (years) of doing business internationally:

Could you please answer the statements below:

1=Completely disagree, 7=Completely agree

In our market...

1. The relationships with the customers tend to exist for several years
2. The relationships with the suppliers tend to exist for several years
3. Stability is typical for relationships between firms

Could you please answer the statements below:

1=Completely disagree, 7=Completely agree

1. It is difficult to keep commercial secrets in our market
2. Information flows easily between companies in our market
3. In our market, everyone knows everyone

Could you please answer the statements below:

1=Completely disagree, 7=Completely agree

In order to expand internationally...

1. Put effort to reach and develop relationships with the right people abroad
2. Interact with business acquaintances to access new information.
3. Interact with personal friends and acquaintances to access new information

Rate the following statements concerning your company:

1=Completely disagree, 7=Completely agree

Entering foreign markets often means:

1. That we have to be flexible

2. That we have to go out of the box
3. That we improvised solutions to problems
4. That we think what we could lose if we fail
5. That we think about consequences for the remaining business if we fail
6. That we think about how much we could risk to invest

Could you please rate the following statements concerning your company's international operations:

1=Completely disagree, 7=Completely agree

1. We are pleased with how the profitability of our international operations have developed over the last three years
2. We are pleased with our market-share over the last three years in the international markets where we operate
3. We have over the last three years had a leading position in our industry in the international markets where we operate

Note: The questionnaire reported here features only the questions employed in the operationalization of the constructs used in the papers listed in this thesis. The complete questionnaire applied during the interviews included a larger number of questions, divided into sections: Market characteristics, Internationalization process, Firm characteristics, and Internationalization outcomes.