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DETERMINANTS AND EFFECTS OF CORPORATE ENTREPRENEURSHIP IN DEVELOPING ECONOMIES: A MULTILEVEL ANALYSIS

Jairo Orozco

Universitat Autònoma de Barcelona

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Author	Supervisors
Jairo Orozco	David Urbano Andreu Turró

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Preface

Preface

Hoy es siempre todavía y toda la vida es ahora.
Y ahora, ahora es el momento de cumplir las promesas que nos hicimos.
Porque ayer no lo hicimos, porque mañana es tarde.
Ahora.

This verse by Machado sums up the gratifying experience of participating in this doctoral journey. This trip is a promise that I have fulfilled unimaginably. This experience has shaped my way of thinking and teaching and provided me with a new perspective to see the world. The academic world requires enormous effort and a solid emotional capacity to dedicate oneself in a rigorous and disciplined way to make a real contribution to academia and, in my case, to the world of entrepreneurship. It has always been said that studying for a Ph.D. is a "solo" adventure. However, I have received support from many people who have given me their valuable help along the way. Therefore, I would like to acknowledge the following persons:

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at all times. Andreu's support was decisive for my research stay at Utrecht University, an outstanding experience.

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……God above all!!

Jairo Orozco

Abstract

Abstract

The phenomenon of entrepreneurship within firms has valuable consequences for the performance of firms, innovation, and economic development. In developing countries, it provides means through which firms can renovate activities, reconfigure resources, and shift the entrepreneurial attitudes essential to competing in such considerably uncertain environments. Therefore, policymakers and researchers are interested in an improved understanding of this phenomenon. The main objective of this research is to study the environmental, organizational, and individual determinants of entrepreneurial activities and their effects on existing firms in developing countries. The methodology of this research is mainly quantitative with data from the Global Entrepreneurship Monitor (GEM), Heritage Foundation, and the World Management Survey, as well as self-reported data from Colombian firms. The following techniques have been employed throughout this doctoral thesis: systematic literature review, multilevel logistic regression, structural equation model (Partial least squares), and probit with sample selection. The main results highlight the following: (1) research on the field comprises three main thematic classifications: Determinants and effects of corporate entrepreneurship, Determinants of intrapreneurship and performance, Dynamic capabilities and corporate entrepreneurship, (2) Informal institutions (fear of failure and media attention) are relevant predictors of intrapreneurship, in both developed and developing countries. In addition, the moderation of economic freedom as a formal institution differs depending on the economic development context. In developed countries, economic freedom enhances to a greater extent the relationship between social status and intrapreneurship, as well as between media attention and intrapreneurship. (3) We also find that dynamic capabilities mediate the relationship between institutions and corporate entrepreneurship. In addition, institutions boost performance and lead to the development of a set of dynamic capabilities that generate corporate entrepreneurship and improve performance in Colombian firms. (4) In addition, advanced operational practices and target setting practices encourage individuals to become intrapreneurs instead of independent entrepreneurs, and (5) formal institutional context factors such as government programs; R&D transfer; and internal market dynamics affect the main processes and resources that shape the potential competitive advantages that result from intrapreneurship in Latin America.

Finally, this thesis has theoretical and practical implications. We employ an international comparative perspective that may contribute to enhance the literature in a field that needs more research. This research has implications for managers who want to foster corporate entrepreneurship and intrapreneurship in their firms. Similarly, these results may be helpful for governments interested in designing policies to develop economic growth through entrepreneurship activities and innovation in developing countries.

Keywords: Intrapreneurship, corporate entrepreneurship, Institutional economics, dynamic capabilities, developing countries

JEL: B52, L25, L26, M13, O38, O54, O57

Chapter 1
Introduction

1. Introduction

1.1 Problem statement and objectives of the research

Entrepreneurial activities in existing organizations facilitate the firm's efforts to exploit its current competitive advantages and explore tomorrow's opportunities (Antoncic and Hisrich, 2001; Covin and Miles, 1999; Felício et al., 2012; Iacobucci and Rosa, 2010; Parker, 2011; Zahra, 1986). Literature has linked the performance of firms with the development and use of new products, organizational innovation, and the renewal of the firm or industry (Covin and Miles, 1999). Research has focused on factors such as the personal traits and characteristics of intrapreneurs (Martiarena, 2013), job satisfaction by employees (Akehurst et al., 2009), the transformation of ideas by middle managers (Radaelli and Sitton-Kent, 2016), organizational structure and values (Zahra, 1991), factors related to governance and type of ownership (Zahra, 1996) or access to resources (Ireland et al., 2009; Wiklund and Shepherd, 2003). Despite this research, there are still other unknown factors in the field that need more attention. Therefore, it is fundamental to study institutions in developing countries among those unknown factors. A few studies have analyzed the role of institutional factors for entrepreneurship in existing organizations, such as cultural and contextual aspects (Hughes and Mustafa, 2017), media exposure (Turro et al., 2014), or fear of failure and self-efficacy (Douglas and Fitzsimmons, 2013) as triggering factors affecting entrepreneurship within organizations in different economic contexts and regions.

Recent research has clarified the different scopes of entrepreneurial activities in existing organizations: (1) corporate entrepreneurship refers to activities emerging from the top management as part of the organizational strategy, (2) intrapreneurship refers to entrepreneurship activities emerging from the individual employee (Stam, 2013).

As a result, firms may obtain better profitability, growth, and innovation outcomes. In addition, governments can benefit because of the economic impact caused by new jobs, expansion of markets, and the expansion of industries. Nevertheless, organizations and countries experiment with resource constraints and unpredictable market conditions that create significant organizational survival and economic development challenges. These conditions have fostered a greater need for firms to be innovative (Kuratko et al., 2014).

Thus, a better understanding of the entrepreneurial process within such environments is necessary, especially in highly turbulent environments such as developing countries (Phan et al., 2009). Developing countries are institutionally different from the most advanced countries (Bradley and Klein, 2016; Cardoza et al., 2016). Entrepreneurial activities are increasing in many developing countries as a critical path for poverty alleviation (Bruton et al, 2008).

Regarding opportunity entrepreneurship, the Global Entrepreneurship Monitor (GEM) consistently indicates that entrepreneurship is already high in developing countries (Naude, 2009). Indeed, Naude (2009) finds an empirical association between the increasing entrepreneurial opportunities in developing countries (Ho and Wong, 2007), and the high opportunity-motivated entrepreneurship rate. However, Leff (1979) indicates the rising entrepreneurial activities in developing countries may have increased oligopoly capitalism (Naude, 2009). The latter argument implies the way in which entrepreneurship is allocated may constrain development (Baumol, 1990). The institutional characteristics and rent-seeking incentive structures in many developing countries may explain the relative economic performance of developing countries (Stiglitz, 2006; Naude, 2009).

Furthermore, recent scholars have emphasized the different institutional conditions (entrepreneurial ecosystem) for entrepreneurship around the world (Guerrero et al., 2021), and they call for a better understanding of the institutional conditions that influence the exploration, exploitation, and consolidation of entrepreneurial initiatives per type of economy (developed vs. developing economies) (Guerrero and Urbano 2019). Accordingly, Welter (2011) highlights the diversity of entrepreneurship and entrepreneurs in terms of context and the necessity to understand their nature, richness, dynamics, and why those differences matter. This includes the rich diversity of institutional environments among developing countries (Basco et al., 2020) that provides valuable information for managers in international firms interested in expanding their operations in developing countries .

In the context of developing countries, firms also experiment with resource constraints (Guillen and Garcia-Canal, 2011) and unpredictable market conditions that create significant challenges for organizational survival and economic development (Acemoglu et al., 2005; Puente et al., 2017; Welter and Smallbone, 2011).

Despite the increasing number of papers regarding corporate entrepreneurship and intrapreneurship, there exist research gaps to be filled. Especially a combined perspective of analysis between corporate entrepreneurship and intrapreneurship is necessary to understand the role of institutions, firms, and employees in the performance of firms. Moreover, how firms interact with the external environment with the internal capabilities to motivate entrepreneurial activities is a perspective that has not been widely researched (Blanka, 2019). This integrative approach needs to mix environmental, organizational, and individual levels of analysis (Hill and Birkinshaw, 2008; Liebregts, 2018). Thus, linking the different levels of analysis of entrepreneurship in firms and connecting the top-down corporate entrepreneurship and bottom-up intrapreneurship approaches provides insights into enhancing the performance of firms in developing countries. This doctoral thesis attempts to contribute to the field by studying different factors (especially institutions) at different levels of analysis.

Overall, the main objective of this research is to study the environmental, organizational, and individual determinants of entrepreneurial activities and their effects on existing firms in developing countries.

The specific objectives for this doctoral research are the following:

1. To explore the content and evolution of entrepreneurship within firms' literature focused on developing countries to provide elements for future research.
2. To analyze the extent to which formal and informal institutions interact to gauge the likelihood of an employee becoming an intrapreneur in developed and developing countries.
3. To study the extent to which firms use their dynamic capabilities to mediate the institutional context and establish successful corporate entrepreneurship activities.
4. To analyze the extent to which management practices affect the allocation of entrepreneurship and intrapreneurship across countries.
5. To analyze the extent to which the entrepreneurial context conditions intrapreneurship in Latin America.

The main theoretical framework for these five objectives is institutional economics (North, 1996) which is used to analyze entrepreneurship within firms, its determinants, and its effects. In this regard, the thesis places particular interest in employing different levels of analysis, specific geographical contexts, and methodologies. These objectives aim to understand the formal and informal institutions that affect entrepreneurship within firms. Mainly, they focus on corporate entrepreneurship and intrapreneurship in comparative international entrepreneurship research by providing results from a cross-country perspective.

The methodology for this doctoral thesis is quantitative. We combine information from different sources: Global Entrepreneurship Monitor, The Heritage Foundation, World Management Survey, and World Bank Database. We also surveyed 386 managers from Colombian firms. The period covered in the different chapters ranges from 2014 to 2020. For this doctoral thesis, we also combined different techniques of analysis: systematic literature review, multilevel logistic regression, partial least squares (PLS), and maximum-likelihood probit model with sample selection.

1.2 Research contributions

The objectives described in the previous section outline some areas that may need further research development. This thesis contributes to the discussion of entrepreneurship within firms by showing the effect of a set of environmental and internal factors. Additionally, some factors, such as management practices at a country level, have not been tested before. Furthermore, some of these factors link the different levels of analysis of entrepreneurship in firms and connect the top-down corporate entrepreneurship and bottom-up intrapreneurship approaches to provide insights to enhance the performance of firms in developing countries. Finally, our results contribute to comparative international entrepreneurship research (Terjesen et al., 2016) by comparing the results in different institutional contexts (developing versus developed countries, Colombia, and Latin America)

This section justifies each objective and describes the main theoretical and practical contributions developed in this thesis.

In Chapter 2 (objective 1), this doctoral thesis provides an overview and synthesis of how prior research has theorized about the concepts around corporate entrepreneurship focused on developing countries. Most of this research has been focused on developed countries; hence, more empirical results in developing and emerging countries are required to generalize the findings (Phan et al., 2009). Therefore, reviews are relevant to relate the concepts related to corporate entrepreneurship (Covin and Wales, 2019; Zahra et al., 2013) and to expand the understanding to facilitate scholars to compare findings across studies and build on each other's work (Kuratko et al., 2015). Finally, this chapter contributes to developing potential future research opportunities to advance the literature on corporate entrepreneurship in developing countries.

Chapter 3 (objective 2) studies the environmental determinants of intrapreneurship in developed and developing countries. A topic that has not been widely studied using institutional economics (Urbano and Turro, 2013; Gómez-Haro et al., 2011). Also, it is necessary to examine the interaction between formal and informal institutions and the differential effect of institutions on intrapreneurship. Additionally, to understand how these institutional factors may explain variations of intrapreneurship across economic development levels. The contributions of Chapter 3 of the research are two, to contribute to the literature in institutional economics and to discuss the interplay of formal and informal institutions to increase intrapreneurship in different economic development. Moreover, this chapter measures the extent to which economic freedom (formal institution) directly or indirectly affects human attitudes like fear of failure, media attention, and the perception of the status of entrepreneurs (informal institutions).

In Chapter 4 (objective 3), this doctoral research suggests that the firm's environment should also be taken into account while examining the relationship between the corporate entrepreneurship strategy and performance (Antoncic and Hisrich, 2001; Covin and Slevin, 1991). Ağca et al. (2012) studied this relationship in Turkish manufacturing industries. They recommend the necessity of other performance measures beyond financial outcomes (objective performance) and employee satisfaction (subjective performance). Also, they demand to study this relationship in firms from different industries, cultures, and sizes. As well as institutional economics, dynamic capabilities view may be a valuable perspective to link the complexity of environmental change in developing countries with the configuration

and use of the substantial capabilities to build effective corporate entrepreneurship strategies. Chapter 4 offers theoretical contributions by advancing the application of institutional economics in the field of corporate entrepreneurship and practical contributions by providing useful insights for the design of tailor-made public policies for fostering entrepreneurship within firms, and for developing an appropriated corporate entrepreneurship strategy to succeed in developing countries.

The objective of Chapter 5 is to analyze the extent to which management practices across countries affect the allocation of entrepreneurship and intrapreneurship across countries. Accordingly, research has identified several reasons why new opportunities might be exploited via intrapreneurship rather than entrepreneurship or vice versa (Douglas and Shepherd, 2002; Kacperczyk, 2012; Parker, 2011; Pinchot, 1985). The variation in the allocation of entrepreneurial talent over intrapreneurship and entrepreneurship across countries is also a research interest (Koster and Rai, 2008; Murphy et al., 1991; Stam, 2013). Although managerial practices are identified as a critical antecedent of intrapreneurship (Rigtering and Weitzel, 2013) and spinout decisions (Kacperczyk, 2012), country-level studies have focused on different sets of formal and informal institutions (Boudreaux et al., 2019; Judge et al., 2015; Knörr et al., 2013) and neglected the role of managerial practices in explaining the allocation of entrepreneurial talent over intrapreneurship and entrepreneurship. In this regard, this chapter contributes to comparative international entrepreneurship research (Terjesen et al., 2016) by explaining how the international patterns of management practices may be associated with the allocation of entrepreneurial talent. Hence, we contribute relevant insights into the relationship between operation management, performance monitoring, target setting, talent management practices, and entrepreneurial activity. Once the individual discovers the opportunity, he/she decides how it can be exploited via intrapreneurship or entrepreneurship.

Chapter 6 (objective 5) of this doctoral thesis analyzes the conditions in which the formal entrepreneurial context influences employees' entrepreneurial behavior. Based on the literature on the entrepreneurial ecosystems and contexts mainly focuses on understanding the dynamics of high-growth startups' or 'scale-ups' as an essential source for innovation, productivity growth, and employment (Mason et al., 2014; Shane, 2009; Stam et al., 2011). However, this approach seems too exclusive, intrapreneurship can also be a form of

productive entrepreneurship (Baumol, 1993; Elert and Stenkula, 2020), and it merits further study. In addition, different studies have concluded that intrapreneurs seem to be more prevalent in developed countries than in developing countries (Bosma et al., 2013). Although, some developing countries, such as Israel, S. Korea, and Singapore, have experienced a notable transformation in innovation, economic growth, and institutional development in the last few years. Latin American region has been less successful in improving economic performance (Acs and Amorós, 2008). As a result, intrapreneurship cannot grow at sustainable rates and produce effects in innovation and development. This chapter contributes to intrapreneurship research and provides information about whether and how the formal entrepreneurial context facilitates intrapreneurship in Latin America. Also, this chapter offers relevant insights for public policy to look at intrapreneurship as an appropriate development motor to encourage innovation and productivity.

The next section of this introduction reviews the conceptual framework of entrepreneurship within firms with a particular interest in developing countries. Then we describe the main theoretical framework and the structure of the research.

1.3 Entrepreneurship within firms in developing countries

Scholars have investigated entrepreneurship within firms as a pillar in organizational efforts intended to improve product innovativeness, risk-taking, and proactive responses of the firm to environmental changes (Covin and Slevin, 1989; Pinchot, 1985; Thornton, 1999; Zahra, 1991). This phenomenon in the literature has been named in diverse ways, such as intrapreneurship (Parker, 2011), corporate entrepreneurship, and corporate venturing (Kuratko and Audretsch, 2013; Zahra, 1991. However, previous research has emphasized differences in the aforementioned concepts. Corporate entrepreneurship and the intrapreneurship concept are closely related but not the same (Amo, 2010). Stam (2013) clarifies two lines of research that differentiate the concepts related to entrepreneurship within the firms. First, "corporate entrepreneurship studies deal with venturing activities that are initiated by the top management of an organization, not with venturing activities that emerge bottom-up by entrepreneurial employees" (Stam 2013, 898). The second line of

research is intrapreneurship, "only new business activities initiated by the individual employee are included in entrepreneurial employee activity, and this individual should be in a leading role in recognition of the opportunity or the pursuit of the opportunity." (Stam 2013, 891). Summarizing, corporate entrepreneurship can be seen as an innovative process initiated from the top-down of the organization (organizational-level), whereas intrapreneurship can be seen as a bottom-up approach related to the entrepreneurial behavior of employees (individual-level) (Åmo and Kolvereid, 2005; Blanka, 2019; Rigtering and Weitzel, 2013).

However, other scholars define that intrapreneurship occurs at both the organizational and individual levels (Mair, 2005). Wakkee et al. (2010) labeled intrapreneurship for the organizational level and entrepreneurial behavior for the individual level to analyze the value created in pursuing opportunities. Similarly, Gawke et al. (2019) depict the different roles employees have within the organization. Senior-level managers are expected to play a central role in "creating an organizational vision and architecture that facilitate intrapreneurship" (2019, 2). Middle-level managers may play an evaluative role in communicating and facilitating bottom-up ideas to senior management, and endorse intrapreneurship strategies coming from the senior level. First-level managers and their employees operationalize and experiment with resources the organization provides to exploit opportunities (2019). Finally, non-managerial employees may contribute to intrapreneurship by "generating and nurturing innovative ideas before formally revealing them to management" (2019,2).

Corporate entrepreneurship in existing midsize and large organizations (Kuratko and Morris, 2018) ends in strategic entrepreneurship and new business or corporate venturing (Kuratko and Audretsch, 2013). Firstly, strategic entrepreneurship refers to organizational efforts focused on achieving significant changes in the business processes, that is, the strategy of the firm, new products, novel served markets, internal organization, or reconstruction of the business model (Gómez-Haro et al., 2011; Kuratko and Audretsch, 2013). Secondly, the new business or the corporate venture is achieved through capitalization via equity investments. Finally, this attainment could be classified as internal when the corporation derives the new entity from inside the organization as spinouts, and otherwise is external (Kuratko and Audretsch, 2013; Parker, 2011).

Another organizational-level approach is the classification of intrapreneurship in four dimensions (Antoncic, 2007): the first is creating a new firm, also called a corporate venture (Stopford and Baden-Fuller, 1994; Gawke et al., 2019). Second, the innovativeness dimension refers to product and service innovation (Covin and Slevin, 1991). Third, self-renewal as a reconfiguration of the firm (Stopford and Baden-Fuller, 1994; Zahra, 1991). Finally, the proactiveness dimension includes initiative and risk-taking (Covin and Slevin, 1991).

The individual-level entrepreneurship approach in existing organizations is developed in two subsequent steps. First, the organization stimulates entrepreneurial behavior when the employees can develop and identify opportunities. Second, the employees become active in new projects (intrapreneurship) (Blanka, 2019).

Furthermore, the consequences of entrepreneurship on the performance of firms are different between developed and developing countries because the environment affects how these activities are designed and executed (Zahra, 1991; Zahra and Covin, 1995). Corporate entrepreneurship and intrapreneurship facilitate the firm's efforts to exploit its current competitive advantages and explore tomorrow's opportunities (Covin and Miles, 1999). As a result, firms may obtain better profitability, growth, and innovation outcomes. In addition, governments can benefit due to the economic impact caused by new jobs, market expansion, and industry expansion. Nevertheless, intrapreneurs experiment with resource constraints, cultural norms, regional characteristics, and unpredictable market conditions that create significant challenges for organizational survival. These conditions foster a greater need for firms to be innovative (Kuratko et al., 2014) and, thus, a better understanding of the entrepreneurial process within such environments.

This phenomenon is relevant in developing countries and regions (Luo and Junkunc, 2008; Turro and Urbano, 2016). It provides a means through which firms in those contexts can renovate activities, reconfigure resources, and shift the entrepreneurial attitudes essential to competing in unpredictable environments (Yiu and Lau, 2007). Published studies show that firms in developing countries lack the kind of intangible assets characteristic of developed and more innovative countries (Guillen and Garcia-Canal, 2011).

1.4 Linking institutional economics, entrepreneurship within firms, and dynamic capabilities

Institutions consist of both informal constraints (sanctions, taboos, customs, traditions, and codes of conduct) and formal rules (constitutions, laws, property rights) (North, 1991, 98). A nation's complex set of formal and informal institutions interact to form the basis of its economic and social system (Williamson, 2000) and is a cause of differences among countries. Veciana and Urbano (2008) explain the origins of the institutional arguments in Germany in the nineteenth century by the historical school. The historical school agreed that the economy is shaped by cultural and historical forces (Veciana and Urbano, 2008). Thorstein Veblen, Wesley Mitchell, and John R. Commons are considered the "founders" of institutionalism as they provided much intellectual inspiration and development for institutionalism. Other relevant authors thought institutionalists are Weber (1968), who defined institutions as "involuntary associations," and Selznick (1949), whose theories argue that organizations are tools for society. Nevertheless, each organization has a life of its own. Selznick's theories and work were considered old institutionalism, and the later analyses were new institutionalism (Powell and DiMaggio, 1991; Lammers and Garcia, 2017).

The new institutionalism began with the work of Meyer and Rowan (1977) which described the concept of institutionalization as the process by which "social processes, obligations, or actualities come to take on a rule-like status in social thought and action" (1977, 342). New institutionalism scholars consider that institutions shape firms across countries and conform to their expectations by coercive pressure (stem from societal expectations and inter-organization interdependence), normative pressure (arising from professionalization), and mimetic pressure (deriving from uncertainty) (DiMaggio and Powell, 1983). Firms across countries are subject to similar coercive, normative, and mimetic pressures. They tend to develop similar sets of administrative structures. Hence, institutional forces result in organizational homogeneity (DiMaggio and Powell, 1983). In this view, we cannot separate an understanding of organizational structures and actions from a sense of their social environment (Martinez and Dacin, 2016). While firms adopt structures that conform to institutional requirements, demonstrate their conformity to social norms, and thereby obtain legitimacy for their operations. Legitimacy indicates an organization's reputation for its

actions and integrity in its dealings, factors that help the firm be attractive to resources from a wide variety of individuals (Yang and Konrad, 2011).

In the entrepreneurship field, institutional economics theory is helpful to the research on entrepreneurship determinants (Bruton et al., 2010; Urbano et al., 2019). It also suggests that entrepreneurial organizations adopt structures, processes, regulations, and culture with consequences for firms, innovation, and economic progress (Bruton et al., 2010). For instance, a fixed system of formal and informal rules and constraints clearly defines property rights. It ensures a fair judicial system and reduces social and economic uncertainty. Intrapreneurs also face society's rules, and firm-level factors likely often interact with society's institutions to shape intrapreneurial incentives (Mahoney and Thelen, 2010). As a result, firms obtain comparative advantages (D'Ingiullo and Evangelista, 2020). The implication is that policymakers address efforts to change the formal institutions without considering the characteristics of informal institutions (i. e. cultural elements) that are incompatible with such efforts (Turro et al., 2014).

Institutional economics is also important because the behavior of firms cannot be separated from their institutional environment because they are embedded in the broader socio-political environment in which competition takes place (Dixon et al. 2010). Accordingly, Teece and Pisano (1994) introduced the concept of dynamic capabilities. Dynamic capabilities emerge from the organizational and strategic routines that the top managers integrate, build, reconfigure and renew the firm's substantive resources to generate outcomes in rapidly changing environments (Eisenhardt and Martin, 2000; Teece and Leih, 2016). Three elements are characterized in dynamic capabilities literature (Zahra et al., 2006). The first is the ability to solve a problem, expressed as a substantive capability. Second, the existence of rapidly changing problems (a characteristic of the environment), and third, the ability to change how the firms solve their problems in this rapidly changing environment (dynamic capability). In countries where the environment is characterized as turbulent, firms are especially challenged to revise their routines (March, 1991). In addition, developing countries face their economic reform processes and experience substantial and complex changes in their institutions, including government, economic systems, and economic structures. Thus, firms use their substantive capabilities to create new products, services, and strategies to enter new markets (Zhou and Li, 2010).

1.5 Structure of the research

This section provides a detailed outline of this doctoral thesis's contents. This thesis comprises five main chapters (plus introduction and conclusions chapters). This research starts with a systematic literature review to propose future lines that shape the dynamics of the field, useful to researchers, managers, and policymakers interested in developing countries. Then, based on these future lines, chapters 3, 4, 5 and 6 focus on analyzing different aspects of corporate entrepreneurship and intrapreneurship at different levels of analysis (environmental, organizational, and individual). Following this, the next section highlights the objectives and methodologies of each chapter.

Chapter 2 is a systematic literature review of 85 articles complemented by a co-word analysis. To control for quality, we reviewed the articles with an impact index higher than 1.000, according to the 2020 Journal Citation Reports (JCR). As a result, we provide an overview of the different ways prior research has conceptualized corporate entrepreneurship concepts, depicting the landscape of the academic literature, research topics, and theoretical lenses employed in the literature focused on developing countries. The analysis enables us to establish that the corporate entrepreneurship research in developing countries comprises three main thematic classifications: determinants and effects of corporate entrepreneurship, determinants of intrapreneurship and performance, and dynamic capabilities and corporate entrepreneurship. This research concludes by explaining a future research agenda, which is the base of the following chapters.

Chapter 3 examines the interaction effects of formal and informal institutions on intrapreneurship in developed and developing countries (environmental and individual levels). For this purpose, we use a multilevel logistic regression technique, data from the Global Entrepreneurship Monitor (GEM) for the years 2014-2020 with information on 31 developing countries (177,201 observations) and 29 developed countries (237,053 observations). This dataset is complemented with data from the Heritage Foundation. The main findings highlight that institutions, such as economic freedom, fear of failure, media attention to entrepreneurs, and social status are significant predictors of intrapreneurship in developed and developing countries. In addition, we show that formal institutions may be

more relevant than implied in previous research since they also have a moderating effect. Therefore, we contribute to the literature on the determinants of intrapreneurship by emphasizing the role of institutions. Finally, our results imply that intrapreneurship policy should be adapted to the individual perception of the informal environment to obtain desirable results.

Chapter 4 tests a framework that describes how firms use their dynamic capabilities to assess the institutional environment to deploy the corporate entrepreneurship strategy (environmental and organizational level). For this purpose, we employed the technique of PLS to test the proposed relationships in a sample of 326 Colombian firms. The main findings highlight the contextual approach for corporate entrepreneurship and the necessity of enhancing dynamic capabilities to increase performance. This research offers theoretical contributions by advancing the application of institutional economics in corporate entrepreneurship research and practical contributions by providing valuable insights for designing tailor-made public policies for fostering entrepreneurship within firms and developing an appropriate corporate entrepreneurship strategy to succeed in developing countries.

Chapter 5 focuses on analyzing to what extent country-level management practices across countries affect the mode of opportunity entrepreneurship exploitation by individuals (environmental, organizational, and individual levels). The institutional conditions influence the perceptions of entrepreneurial activity and, ultimately, which individuals will be involved in intrapreneurship activity and independent entrepreneurship, respectively. We test the hypotheses about how managerial practices affect the type of opportunity exploitation using a sample of 201.267 individuals across 20 countries from developed and developing countries. For this purpose, we use GEM Data (2016) World Management Survey (2004-2015). In addition, a maximum-likelihood self-selection probit model is used to correct for non-random self-selection into innovative entrepreneurial activity. The main findings highlight that different management practices indicators may result in various intensities and forms of entrepreneurial activity. Consequently, countries with a predominance of distinct sets of management practices favor one type of entrepreneurial activity. This study contributes to comparative international entrepreneurship literature and provides valuable insight for policymakers

Finally, Chapter 6 (objective 5) aims to analyze the extent to which the formal entrepreneurial context conditions intrapreneurship in Latin America. The interconnected actors and factors that comprise the entrepreneurial ecosystem are conditions of entrepreneurial activity. Research has mainly focused on startups and ambitious entrepreneurs, but the effects of the entrepreneurial ecosystem on entrepreneurial employees have been overlooked in the literature. In addition, the region still lags in critical areas relevant for intrapreneurship, such as education, knowledge creation, and economic reform that are negatively affecting economic progress. Therefore, this research tests the hypotheses about how the formal factors of the entrepreneurial ecosystem affects intrapreneurship in Latin America in a sample of 73,062 individuals across ten countries. For this purpose, we use the National Expert Survey GEM data from 2016 to 2018. Furthermore, we use a maximum-likelihood self-selection probit model to correct for non-random self-selection into entrepreneurial activity. The main findings highlight that, effectively, factors such as government programs, R&D, and internal market dynamics significantly affect employees' decisions for intrapreneurship; therefore, this research contributes mainly to revealing the insights necessary to turn the attention to developing public policy to encourage intrapreneurship.

In summarizing, mentioned above chapters are oriented to accomplish the nature of this doctoral thesis, to analyze entrepreneurship within firms employing different levels of analyses, as seen in Table 1.1

Table 1.1. Structure of the research

Chapter	Objective	Level of Analysis	Data source
Chapter 2: Corporate entrepreneurship research in developing countries: a review and agenda for future directions	To explore the content and evolution of entrepreneurship within firms' literature focused on developing countries to provide elements for future research.	Environmental, Organizational and Individual	Web of Sciences
Chapter 3: The effect of institutions on intrapreneurship: An analysis of developed Vs. developing Countries	To analyze the extent to which formal and informal institutions interact to gauge the likelihood of an employee becoming an intrapreneur in developed and developing countries.	Environmental and Individual	GEM (APS) and The Heritage Foundation (Index of economic freedom)
Chapter 4: Institutions, dynamic capabilities, and corporate entrepreneurship-performance: An analysis in a developing country	To study to the extent to which firms use their dynamic capabilities to mediate the institutional context and establish successful corporate entrepreneurship activities.	Environmental and organizational level	Survey
Chapter 5: Management practices in the allocation of entrepreneurship and intrapreneurship across countries	To analyze the extent to which management practices affect the allocation of entrepreneurship and intrapreneurship across countries.	Organizational and Individual	GEM (APS) and World Management Survey
Chapter 6: Entrepreneurial context and Intrapreneurship in Latin America	To analyze the extent to which the formal entrepreneurial context conditions intrapreneurship in Latin America.	Environmental and individual	GEM (APS and NES)

Chapter 2

Corporate Entrepreneurship research in developing countries: A review and agenda for future directions

2. Corporate Entrepreneurship research in developing countries: A review and agenda for future directions

2.1 Introduction

As mentioned before, recent research agrees that entrepreneurship is critical in stimulating the growth and performance of established organizations (Bierwerth et al., 2015; Rigtering et al., 2017; Finkle, 2020). Scholars engaged in the topic of entrepreneurship and management have studied several factors affecting the phenomenon from an environmental (Gupta and Batra, 2016; Schneider and Engelen, 2015; Urbano and Turro, 2013), organizational, and individual perspectives (Antoncic and Hisrich 2001; Thornton 1999). Most of this research has been focused on developed countries, so it is a must to count with more empirical results in developing and emerging countries in order to generalize the findings (Phan et al., 2009). Such works have built the concepts of corporate entrepreneurship (Covin and Miles, 1999; Kuratko and Audretsch, 2013), intrapreneurship (Neessen et al., 2019; Parker, 2011), and entrepreneurial orientation (Wales et al., 2020). However, it is how these concepts relate to each other what is a subject to an ongoing debate in the literature (Covin and Wales, 2019; Zahra et al., 2013) and it prevents scholars from comparing findings across studies and building on each other's work (Kuratko et al., 2015). Recent literature has made efforts to clarify the constructs and structure of theoretical and empirical knowledge on the topic (Lampe et al., 2020). It provides an overview and a synthesis of the different conceptualizations of entrepreneurship within firms (Covin and Lumpkin, 2011; Phan et al., 2009). However, the efforts to expand the concepts within developing countries remain underdeveloped (Hitt et al., 2011; Luo and Junkunc, 2008).

Compared to developed countries, developing countries differ institutionally (Bradley and Klein, 2016; Cardoza et al., 2016). Firms in developing countries experiment with resource constraints (Guillen and Garcia-Canal, 2011) and unpredictable market conditions that create significant challenges for organizational survival and economic development (Acemoglu et al., 2005; Puente et al., 2017; Welter and Smallbone, 2011). These characteristics may limit the entrepreneurial activities within firms (Wakee et al., 2010). Managers and employees are exposed to an environment that is highly dynamic, complex, and uncertain. They face the

need to quickly choose among multiple courses of action, especially when there is insufficient information to decide more rationally (Busenitz and Barney, 1997).

Developing countries are characterized by low income and high economic growth, which mainly relies on economic liberalization (Bruton et al., 2010). Six developing countries (Brazil, China, India, Indonesia, South Korea, and Russia) will account for half of the world's economic growth by 2025 (Li, 2011; Bruton et al., 2013). Despite the importance of developing countries in the world's economy, scholars often fail to recognize that these countries challenge theories developed to explain phenomena in the advanced countries, which are relatively stable and efficient (Bruton et al., 2008). From this perspective, Zahra et al. (1999) call for comparative studies on corporate entrepreneurship across multiple countries and cultures, as cultural and economic contexts may lead to a differential intensity of entrepreneurship activities and their antecedents and consequences. The arguments above drive the search for a better understanding of the entrepreneurial process within such turbulent environments. Accordingly, the aim of this chapter is to fill this gap by means of a systematic literature review on entrepreneurship in firms operating in developing countries. This chapter provides an overview and a synthesis of the different ways through which prior research has conceptualized the concepts around corporate entrepreneurship, landscaping the academic literature, research topics, and theoretical lenses employed in the literature focused on developing countries, and drawing on these findings to build potential future research opportunities to advance the literature on corporate entrepreneurship in developing countries. This research contributes to the field in two ways. First, it provides a better understanding of the concepts and dimensions of corporate entrepreneurship within developing countries. We identify the main papers, journals, and scholars that have made significant contributions to the field within the mentioned context of developing countries. We present this quantitative analysis describing indicators, such as the number of publications, citations, the different theoretical and methodological perspectives, topic trends, and thematic maps. Second, this research also contributes to developing a research agenda for those interested in this field. We employ bibliometric methods to monitor and chart scientific processes. Mainly, we use diverse measures: indicators of publication activity, a co-word technique as an advanced data-analytical method, and other complementary analyses of full-text content. We present the agenda qualitatively, and it deepens the main clusters and contributors to the field. This

analysis allows us to establish that research on corporate entrepreneurship (and related concepts) in developing countries comprises three main thematic classifications: determinants and effects of corporate entrepreneurship, determinants of intrapreneurship and performance, and dynamic capabilities and corporate entrepreneurship. After unveiling the main themes, this research proposes future lines that may shape the dynamics of the field. Thus, this study provides new perspective and an updated overview of the intellectual structure of the field to researchers and managers interested in developing countries.

2.2 Methodology

We conduct a systematic literature review (SLR) complemented by a co-word analysis to explore the current and suggest avenues for future research on corporate entrepreneurship in developing countries. The SLR provides an overview of previous research, a diverse perspective on the literature, and the different streams on the topic. Furthermore, this review contributes to the development research on corporate entrepreneurship in developing countries by identifying the different research streams and proving possible future research agendas. A systematic review approach is characterized by its thoroughness and rigor, which leads to legitimacy and the objectivity of results (Jesson, 2011; Tranfield et al., 2003). Tranfield et al. (2003) suggest the following steps as a reference framework for conducting an SLR in the field of management and business: (1) planning the review, (2) conducting the review, and (3) reporting and disseminating the review. The first step was accomplished by obtaining a general view of relevant concepts in the field of corporate entrepreneurship. The aim was to identify relevant journal articles referring to corporate entrepreneurship and intrapreneurship. We select these two keywords because they are widely used in the entrepreneurship literature in established organizations and cover other terms more closely related, such as entrepreneurial orientation and entrepreneurial leadership.

For the second step, the criteria for the article to be part of the review includes: the title, abstract, or keywords of an article that had to contain the search terms "corporate entrepreneurship" OR "intrapreneurship." Using this approach, we identify an initial sample of 2,063 articles. We select articles from the journals included in the Web of Sciences (WoS)

core collection database, from the domains of social sciences and sciences and technology, in the area of business economics, and written in English, resulting in 1,511 articles. To control the quality of selected articles, we follow Buela-Casal and Zych (2012) and Urbano et al. (2019) methods. This SLR considers only 546 journals with a 5-year impact factor in economics, business, management, and related areas and with an index higher than 1,000 according to the 2020 Journal Citation Reports (JCR). This sample of 546 articles is analyzed by means of an abstract-screening process to identify, first, the domains of corporate entrepreneurship and the closely related concepts (intrapreneurship, entrepreneurial orientation, entrepreneurial leadership), and by reviewing their methods section to identify whether the study targets a developing country or countries. We also consider articles focusing on other countries (including developed countries and transitional economies) only in the case the research offered a comparative perspective. This decision is relevant to an improved understanding of the differences between both contexts. The final sample consists of 85 articles addressing the topic in developing countries or offering a comparative perspective. The classification of developing countries is based on the United Nations World Economic Situation and Prospects Report by the time of publication (See Appendix 2). We do not limit the search to any specific period to have a complete view. The oldest article was published in 1999 (Filatotchev et al., 1999), and the most recent articles are from 2020 (Ali et al., 2020) (we finished our search in March 2021). For a complete list of selected articles see Appendix 1.

We also use the bibliometric tool of co-word analysis to provide a comprehensive map of the structure of knowledge in the field, and to reveal the streams and directions of research in the field (Kraus et al., 2020). Co-word analysis counts and analyzes the co-occurrences of terms, keywords, or subject headings in the articles of a given field. In addition, it determines the relationships among those keywords and algorithmically reports some thematic clusters and emerging research areas (Callon et al., 1991). A co-word analysis provides a replicable methodology to access individual and collective structures and has analytical flexibility (Ronda-Pupo and Guerras-Martin, 2012).

Additionally, we perform an in-depth analysis of the content of the articles classified by topics and a description of methodological elements applied in the articles reviewed, such as theoretical approach, data collection tools, sample size, temporal dimension, country,

contributions, and limitations. Thus, it allows us to uncover the main concepts explored in the field and contribute new insights, which have not been assessed in detail by previous research about corporate entrepreneurship in developing countries. Several researchers in the field of management, business, and economics have employed this technique (Benavides-Velasco et al., 2013; López-Fernández et al., 2016; Ronda-Pupo and Guerras-Martin, 2012).

2.3 Definitions and scope

The main definitions for this chapter are corporate entrepreneurship (Kuratko et al., 2015), and intrapreneurship (Parker, 2011). Entrepreneurial orientation (Wales et al., 2020; Covin and Wales, 2019) is sometimes indistinctively used with corporate entrepreneurship. These concepts are closely related but they are not the same. As explained in Chapter 1, previous research has highlighted the differences between the aforementioned concepts (Åmo, 2010). As explained in Chapter 1, according to Stam (2013) and based on (Pinchot, 1985) corporate entrepreneurship studies deal with venturing activities that are initiated by the top management of an organization (Stam, 2013). Entrepreneurial orientation is closely related to corporate entrepreneurship). Entrepreneurial orientation includes the conceptualization of innovativeness, risk-taking, and proactiveness as central dimensions to define entrepreneurial processes and firm-level behaviors (Covin and Slevin, 1991; Lumpkin and Des, 1996; Miller, 1983). Innovativeness reflects the firm's willingness to support new ideas, creativity, and experimentation to create and deploy internal solutions or new products and services (Covin et al., 2016). Proactiveness represents a perspective to seek opportunities that provide an advantage over the actions of competitors by anticipating future market demands (Kreiser et al. 2010). Finally, risk-taking is associated with a firm's willingness to commit resources toward uncertain organizational initiatives (Wales et al., 2020). Recent research has emphasized that entrepreneurial orientation refers to an attribute of entrepreneurial organizations, whereas corporate entrepreneurship refers to activities within the organization. (Wales et al., 2020).

From an individual-level perspective, the concept of intrapreneurship can be seen as a bottom-up approach related to employees entrepreneurial behavior (Åmo and Kolvereid,

2005; Blanka, 2019; Rigtering and Weitzel, 2013). "Only new business activities initiated by the individual employee are included in entrepreneurial employee activity, and this individual should be in a leading role in the recognition of the opportunity or the pursuit of the opportunity." (Stam, 2013, 898).

In addition, entrepreneurial leadership is an emerging concept that has not yet been fully embraced in entrepreneurship and small business management (Renko et al., 2015). It implies influencing, transforming, and directing the employee performance of towards achieving organizational goals that involve recognizing and exploiting entrepreneurial opportunities (Renko et al., 2015). The concept of entrepreneurial leadership is connected to the previous concepts of entrepreneurship because it has been suggested that leaders should have significant influence on corporate entrepreneurship (Leitch and Volery, 2017), and as individuals, they assume most of the decision-making about organization's strategy and operations (Chen et al., 2014; Gupta et al., 2004).

Finally, the contextual perspective of this research is developing countries. Conditions in developing countries foster the increased need for firms to be innovative (Kuratko et al., 2014), renovate activities, reconfigure resources, and shift the entrepreneurial attitudes that are essential to compete in such uncertain environments (De Villiers-Scheepers, 2012). Moreover, firms must constantly maintain their organizational routines to maintain a competitive advantage (March, 1991). Therefore, they require more attention while examining the concept of corporate entrepreneurship (Antoncic and Hisrich, 2001; Covin and Slevin, 1991).

2.4 Results

2.4.2 Quantitative analysis

The results of this research are presented in the following order: journals and evolution of the selected articles, number of articles published by researchers, type and scope of research, and the research streams in developing countries according to the research, based on a co-word analysis.

The selected articles (85 in total) provide the main conceptualizations of entrepreneurship within firms focusing on corporate entrepreneurship and intrapreneurship, expanding to the closest concepts of entrepreneurial orientation, and entrepreneurial leadership. Thus, our analysis focuses only on those results identifying journals, years, authors, theoretical frameworks, and methods used to study corporate entrepreneurship. We find 221 authors evidencing the growing interest in this entrepreneurship within firms in developing countries. Concerning the authors who have published articles focusing on entrepreneurship within firms in developing economies, we find that Urbano, Antoncic, Dai, Urban, and Wei report three articles per author.

In addition, Table 2.1 shows the most cited articles in this field, representing the most used and influential research in developing countries. The seminal study on intrapreneurship by Antoncic is the most cited article, which study validated the cross-cultural differences in entrepreneurship between the USA and Slovenia. The following articles introduced the field of entrepreneurial leadership by Gupta (2004), the organizational support to increase intrapreneurship by Alpkan (2010), and the interaction of entrepreneurship and business orientation by Nasution et al. (2011). Other influential articles focus on examining the impact of corporate entrepreneurship and entrepreneurial orientation on the performance of firms (Kreiser et al., 2013; Yiu and Lau, 2007), an integrative framework for corporate entrepreneurship (Luo et al.,, 2005), and the innovation performance in new product development teams Liu et al., 2015). As shown in Table 2.2, the *Journal of Business Research* has published the most significant number of articles (11 articles, 12.94 percent), followed by the *International Entrepreneurship and Management Journal*, *Management Decision, Small Business Economics,* representing 5.88 percent each. Table 2.3 shows the most-cited journals in the field of entrepreneurship activities within firms in developing countries. Remarkably, the most-cited journal is the *Strategic Management Journal (SMJ)*, followed by two entrepreneurship journals*: Journal of Business Venturing (JBV) and Entrepreneurship Theory & Practice (ET&P)*. The management and entrepreneurship journals dominate the top 10 of the list. Typically, the development of research in corporate entrepreneurship is at the intersection of strategic management and entrepreneurship (Zahra et al., 2013).

Table 2.1. Most cited authors

Article	Total Citations	TC per Year
Antoncic (2001), JOURNAL OF BUSINESS VENTURING	488	23.238
Gupta (2004), JOURNAL OF BUSINESS VENTURING	269	14.944
Alpkan (2010), MANAGEMENT DECISION	177	14.75
Nasution (2011) INDUSTRIAL MARKETING MANAGEMENT	159	14.455
Yiu (2008), ENTREPRENEURSHIP THEORY AND PRACTICE	106	7.571
Kreiser (2013), SMALL BUSINESS ECONOMICS	98	10.889
Luo (2005), JOURNAL OF BUSINESS RESEARCH	90	5.294
Chen (2014), JOURNAL OF PRODUCT INNOVATION MANAGEMENT	86	10.75
Turro (2014), TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE	73	9.125
Douglas (2013), SMALL BUSINESS ECONOMICS	71	7.889
Antoncic (2008), TECHNOVATION	71	5.071
Kaya (2006), INTERNATIONAL JOURNAL OF HUMAN RESOURCES MANAGEMENT	63	3.938
Jiao (2013), JOURNAL OF ENGINEERING TECHNOLOGY MANAGEMENT	59	6.556
Sebora (2010), INTERNATIONAL ENTREPRENEURSHIP AND MANAGEMENT JOURNAL	57	4.75
De Clercq (2011), JOURNAL OF MANAGEMENT	43	3.909
Tang (2012), JOURNAL OF SMALL BUSINESS MANAGEMENT	42	4.2
Gupta (2016), INTERNATIONAL SMALL BUSINESS JOURNAL - RESEARCHING ENTREPRENEURSHIP JOURNAL	39	6.5
Yunis (2018), JOURNAL OF BUSINESS RESEARCH	36	9
Huang (2014), CREATIVITY, INNOVATION MANAGEMENT	35	4.375
Liu (2015), JOURNAL OF PRODUCT INNOVATION MANAGEMENT	33	4.714

Table 2.2. Main journals

Journal	No. Articles	Percentage %
Journal f Business Research	11	12.94
International Entrepreneurship and Management Journal	5	5.88
Management Decision	5	5.88
Small Business Economics	5	5.88
Industrial Marketing Management	4	4.71
International Journal of Human Resource Management	4	4.71
Journal of Business Economics and Management	4	4.71
Asia Pacific Journal of Management	3	3.53
Entrepreneurship Theory and Practice	3	3.53
European Journal of International Management	3	3.53
International Small Business Journal-Researching Entrepreneurship	3	3.53
Journal of Business Venturing	3	3.53
Journal of Product Innovation Management	3	3.53
Journal of Small Business Management	3	3.53
Journal of World Business	3	3.53
Sustainability	3	3.53
Creativity and Innovation Management	2	2.35

Entrepreneurship Research Journal	2	2.35
European Journal of Innovation Management	2	2.35
Journal of Management Studies	2	2.35
Technological Forecasting and Social Change	2	2.35
Entrepreneurship and Regional Development	1	1.18
International Journal of Technology Management	1	1.18
International Marketing Review	1	1.18
Journal of Engineering and Technology Management	1	1.18
Journal of Family Business Strategy	1	1.18
Journal of International Management	1	1.18
Long Range Planning	1	1.18
Research Policy	1	1.18
Strategic Entrepreneurship Journal	1	1.18
Technovation	1	1.18

As mentioned before, the focus of this review is to assess corporate entrepreneurship research in developing countries. In general terms, China is the main focus of study with 27 articles, followed by Mexico with six articles, and Taiwan and India, both with five articles. Moreover, the focus of 16 articles is cross-country, including developing countries (Table 2.3). There is an urgent need for research on developing countries, especially in countries other than China, where most of the corporate entrepreneurship literature is centered (Sakhdarin et al., 2020).

Table 2.3. Most journal citations

Journal	Number of citations	Percentage %	Journal	Number of citations	Percentage %
Strategic Management Journal	495	12.88	*Management Sciences*	94	2.45
Journal of Business Venturing	459	11.94	*Organizational Sciences*	93	2.42
Entrepreneurship Theory and Pra ctice	440	11.45	*Journal of Small Business Management*	92	2.39
Academy of Management Journal	316	8.22	*industrial Marketing Manageme nt*	77	2.00
Academy of Management Review	211	5.49	*Management Decision*	74	1.93
Journal of Management	192	4.99	*Journal of Product Innovation Managemen t*	69	1.80
Journal of Marketing	143	3.72	*International Journal of Human Resources Manageme nt*	62	1.61
Journal of Business Research	131	3.41	*Journal of Marketing Research*	60	1.56
Small Business Economics	124	3.23	*Journal of World Business*	60	1.56
Journal of International Business Studies	123	3.20	*International Entrepreneurship Management Journal*	55	1.43
Journal Management Studies	116	3.02	*Journal of Academy of Marketing Sciences*	51	1.33
Admin Science Quarterly	108	2.81	*Research Policy*	51	1.33
Journal Applied Psychology	97	2.52	*Strategic Entrepreneurship Jour nal*	51	1.33

Regarding the number of articles in the journals selected by year, Figure 2.1 evidences the growing interest in the topics related to entrepreneurship within firms in developing countries, especially since 2012, when the number of publications increased. It is similar to the current scientific production trend toward greater experimentation, a wider variety of methods, and more sophisticated statistical analysis.

Figure 2.1. Articles per year

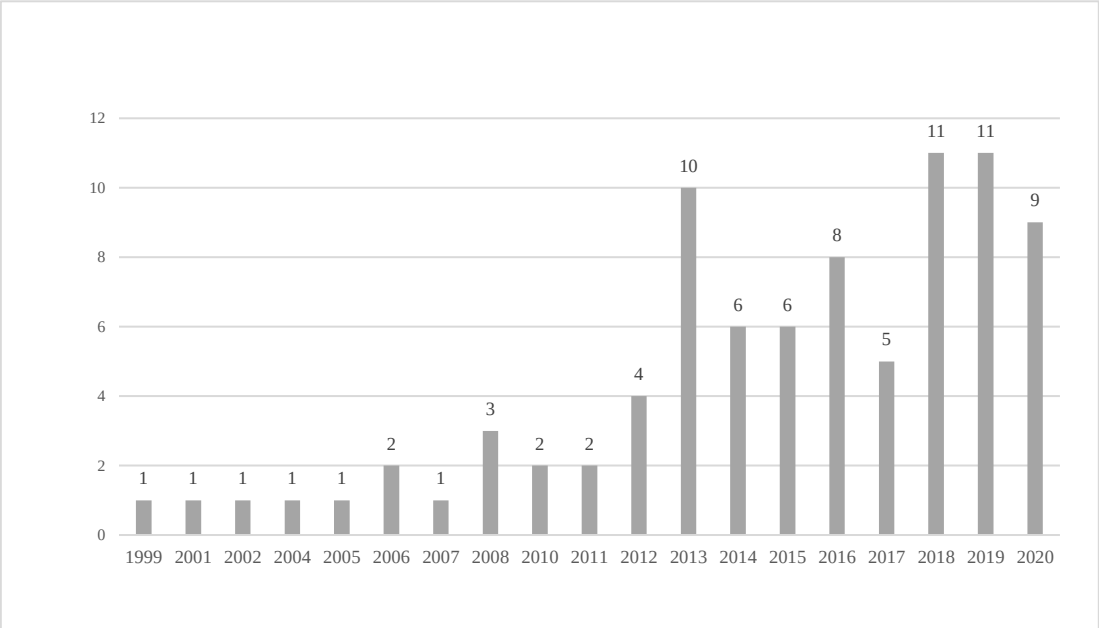


Table 2.4: Articles per subject of analysis

Country	No. Articles
China	27
Cross-country	16
México	6
Taiwan	5
India	5
Turkey	3
South Africa	3
Slovenia	3
Malaysia	3
Iran	2
Indonesia	2
United Arab Emirates	1
Tunisia	1
Thailand	1
Russia	1
Romania	1
Lebanon	1
Kenya	1
Israel	1
Costa Rica	1
Belarus	1
Total	49

As per the theoretical framework, we find a wide variety of approaches. However, Table 2.5 shows that the institutional economics is the main framework used to investigate corporate entrepreneurship. The second theoretical framework is the dynamic capabilities theory, and the third is the resource-based theory.

Table 2.5. Theoretical Framework

Theory	No. Articles	Participation %
Institutional economics	11	12.9
Resource-Based View	7	8.2
Dynamic Capabilities View	6	7.1
Social Capital/cognitive	3	3.5
Contingency Theory	3	3.5
Cultural Dimensions Theory	2	2.4
Organizational Learning	2	2.4
Others	54	63.5
Total	85	100.00

Research on entrepreneurship has grown in terms of empirical evidence. Accordingly, this review find that out of the 85 articles studied, 82 used quantitative methodology (Table 2.6). The most prevalent estimations methods employed in these articles are structural equation modeling (42 percent), followed by hierarchical regression techniques (20 percent), and multiple regressions (10.6 percent). While Global Entrepreneurship Monitor and The Panel Study of Entrepreneurial Dynamics (PSED) are the common data sources in the study of independent entrepreneurship (Urbano et al., 2019), direct surveys of CEO, employees, and middle-level managers are the most frequent data source in the study of corporate entrepreneurship,. This feature may explain the majority of articles using the technique of structural equation modeling that provides results with a limited amount of data (Hair, Ringle, and Sarstedt, 2011).

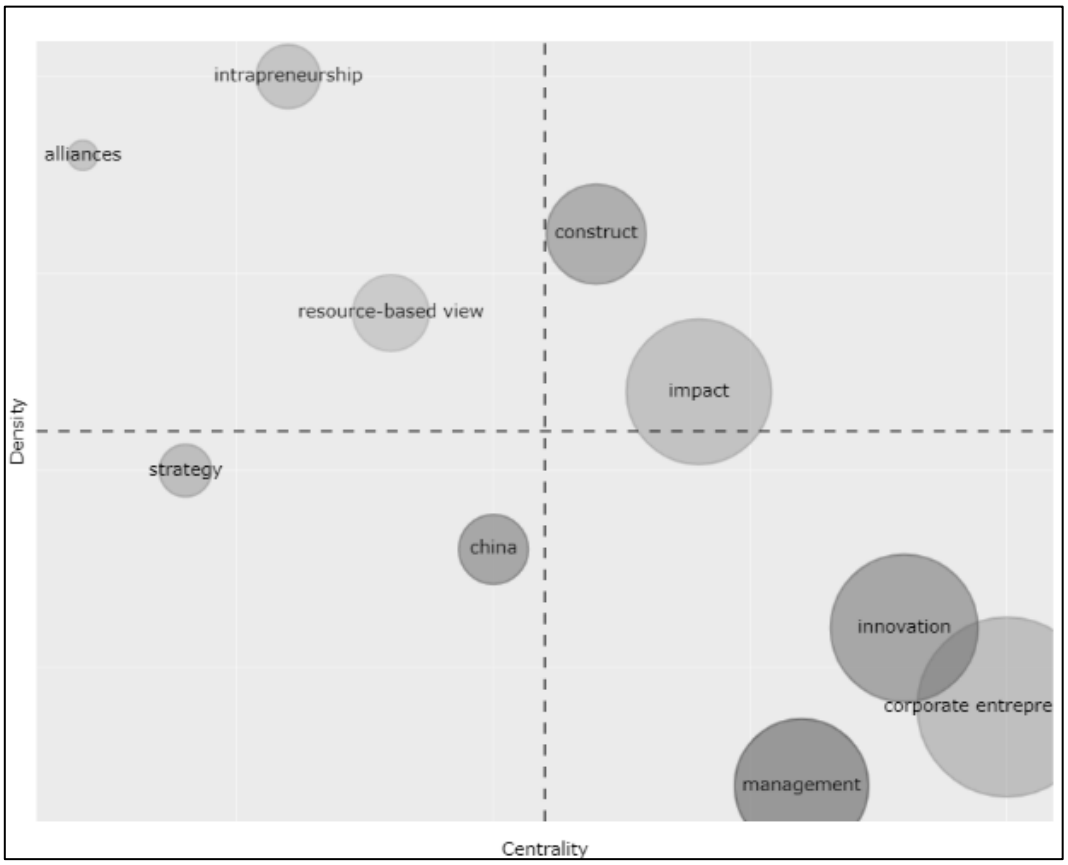
Table 2.6. Methods

	Method	**No. of Articles**	**Percentage %**
Qualitative	Case Study	3	3.5
Quantitative	Structural equation Model ing, Partial Least Square, PCA, and Fuzzy set	36	42.4
	Hierarchical	17	20.0
	Multiple Regression	9	10.6
	Multilevel Regression (Multilevel and logistic)	7	8.2
	OLS Regression Analysis	4	4.7
	Binomial, Probit, negative binomial and unrelated regression analysis	3	3.5
	Logistic	4	4.7
	Multivariate regression analysis	2	2.4
	Total	85	100

2.4.3 Qualitative analysis

Thematic map

Figure 2.2. Thematic Map



Thematically, we can also distinguish clusters by mapping the most common and co-occurring keywords, as illustrated in Figure 2.2. Distinct cluster bubbles depict the most common keyword in the cluster as the cluster label. Bubble size measures the proportion of cluster word occurrences, and bubble location is a measure of Callon centrality and density (Callon et al., 1991). Centrality measures for a given cluster "the intensity of its links with other clusters. The more numerous and stronger are these links, the more this cluster designates a set of research problems considered crucial by the scientific community". (Callon et al., 1991, 146). Density "characterizes the strength of the links that tie the words making up the cluster together. The stronger these links are, the more the research problems corresponding to the cluster constitute a coherent and integrated whole." (Callon et al., 1991,

165). The latter is useful for uncovering themes that are “emerging or declining” (lower-left quadrant), “highly developed and isolated” (upper-left quadrant), “motor themes” (upper-right quadrant), and finally “basic and transversal” or relevant to a specific domain and the diverse research areas within a field (lower-right quadrant). According to this analysis, the "motor theme" in the reviewed literature in developing countries is *impact-construct*. It means that researchers are more interested in the impact of moderators and mediating variables on corporate entrepreneurship paradigms (Sakhdari and Burgers, 2018; Widya-Hasuti et al., 2018). The logic of this interest is related to the necessity of maintaining or acquiring the competitive advantage for firms in developing countries (Chang, Wang, and Cui, 2019; Sebora and Theerapatvong, 2010; Wei and Ling, 2015). The upper-left quadrant shows high-density themes, but they are not central in the review. These themes are very specialized or niche. This figure highlights *intrapreneurship, resource-based view,* and *alliances* as specialized themes. In the lower-left quadrant are the emerging or declining themes. In this review, the themes that are declining are *China and strategy*. Finally, the lower-right quadrant shows the themes that are basic and transversal. These themes refer to general topics transversal to the different research areas of the field: corporate entrepreneurship, management, and innovation. These broad topics are connected to the performance of firms, their moderators, and measures*: innovation, Corporate Entrepreneurship, and Management.*

Thematic evolution

Our co-word analysis provides information about the thematic evolution by year (Figure 2.3) and a conceptual structure map. The first provides a perspective on the topics that are growing in interest. One of the main trends is performance; the scope of this topic has been transforming during the last ten years. During the first years of study, researchers focused on financial performance. Currently, the topic is determined by business performance, which leads to a holistic approach to measuring variables. Other topics that are gaining importance are moderating roles, entrepreneurial orientation, and emerging economies. The second is the conceptual map clustering common co-occurrence of keywords. It was constructed by multiple correspondence analysis (Figure 2.4). The smallest cluster brings words related to the context and characteristics of developing countries: *emerging economies, growth, and uncertainty*. The biggest cluster shows the critical concepts around corporate

entrepreneurship and provides keywords regarding *antecedents, financial performance, employee behavior, governance, dynamic capabilities, environment, political skills, innovation, leadership, etc*. These keywords capture collaborative approaches between corporate entrepreneurship in developing countries considering different *antecedents, and firms and employees' characteristics, the institutional environment, and performance.*

Figure 2.3. Thematic evolution

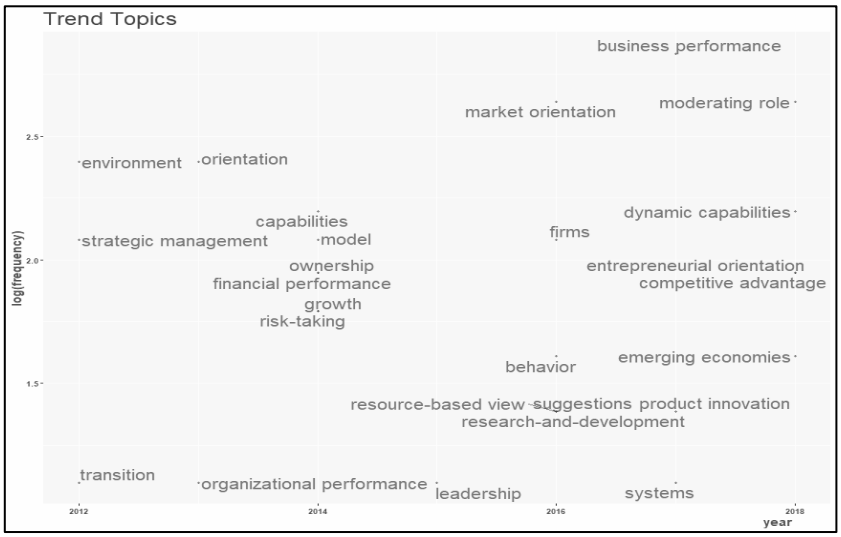
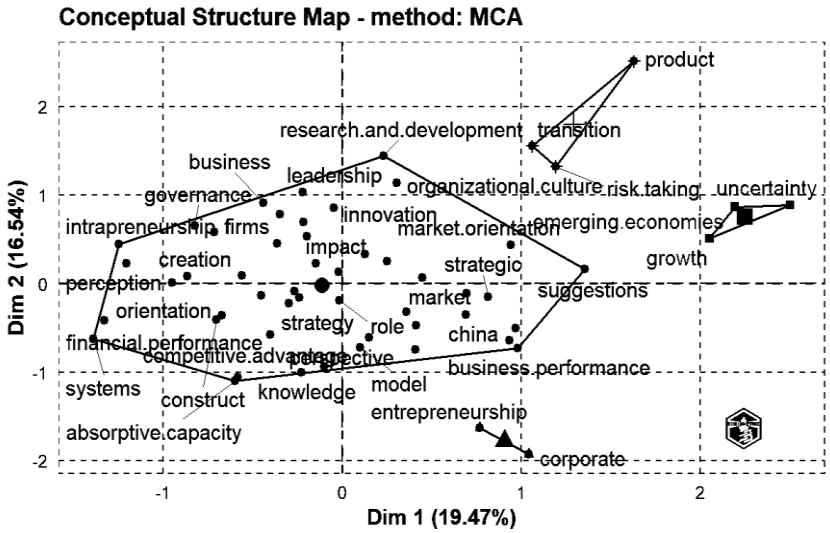


Figure 2.4. Conceptual structure map



2.4.4 Content analysis: Research streams of corporate entrepreneurship in developing countries.

The bibliometric analysis helps us perform an in-depth analysis of the main contents. The conceptual structure map provides us with an overview and classification of the main topics. After analyzing, we group the results into three main categories relevant to the study of corporate entrepreneurship in developing countries. The following thematic classification is related to the current research lines about entrepreneurship (Meyer et al., 2014) and entrepreneurship within firms (Lampe et al., 2020; Urbano et al., 2022).

Determinants and effects of corporate entrepreneurship

The first and most relevant research stream focuses on the determinants of corporate entrepreneurship, especially the contextual determinants. As mentioned before, corporate entrepreneurship is related to the entrepreneurial activities strategically decided by the top management (Lampe et al., 2020; Stam, 2013). The context plays an essential role in developing countries where the institutions are weak, and regulations are constantly changing (Bruton, 2010; Hughes and Mustafa, 2017; Sebora and Theerapatvong, 2010; Zahra and Covin, 1995). This turbulent environment represents a challenge for organizational decision-making, and for researchers who have tried to contribute to this matter (Gupta et al., 2004). In general terms, some researchers have shed light on the interaction between the context and the performance of firms (Kearney et al., 2013; Sebora and Theerapatvong, 2010; Zahra and Covin, 1995) and how corporate entrepreneurship mediates this relationship in the context of private and public sector organizations (Kearney et al., 2013). Another perspective is the significant positive effect of living in an entrepreneurial culture with strong corporate entrepreneurship (Mustafa et al., 2018; Urbano et al., 2013).

Moreover, the analysis focuses on the relationship between an interactive social context with performance-oriented practices to increase corporate entrepreneurship. Accordingly, firms in developing countries need to complement these supportive practices with performance-oriented practices (Sakhdari et al., 2020). Tang et al. (2015) contribute to the literature on corporate entrepreneurship and performance by adding the concept of strategic human resource management (SHRM). Starting on the resource-based view, the implementation of

such SHRM practices develops political skills in people who linked to better performance of firms. Moreover, this relationship is more significant when CEOs have higher degrees of political discretion and networks (Wei and Ling, 2015). Following social network and social cognitive theory, authors such as Thomas et al. (2019) propose a model in which the acquisition, distribution, and interpretation of information are tested on the basis of cognition-based trust, perceived expertise, and tie strength, enhancing the role of CEOs.

Government and state-owned firms are also part of the research. For example, Chang et al.(2019) suggest that state-owned firms have a less competitive advantage in innovation because they lack entrepreneurial orientation. However, firm strategy and high-commitment HR practices (HCHR) enhance innovation capability by promoting an entrepreneurial orientation in state-owned firms. In addition, entrepreneurs who have past working experience within the government are more likely to stay alert to new opportunities, leading to entrepreneurial activities and the performance of firms (Dai and Si, 2018).

Entrepreneurial orientation is considered an attribute conducting to corporate entrepreneurship. Conceptually refers to "strategy-making practices, management philosophies, and firm-level behaviors that are entrepreneurial in nature" (Anderson et al. 2015, 1579). One of the interests of researchers is the cross-cultural validation of entrepreneurial behavior measures used in western and non-western cultures. Runyan et al. (2012) contribute to this subject by modeling the entrepreneurial orientation construct as a unidimensional and multidimensional construct to determine the optimal model fit in a cross-cultural setting (the United States and China).

Small- and medium-sized enterprises (SMEs) are relevant in developing countries. Gupta and Batra (2016) reveal a robust positive relationship between entrepreneurial orientation and firm performance, including environmental contingencies-demand growth, and competitive intensity in Indian SMEs. Furthermore, other researchers explain the potential influence of cultural attributes by assessing the differential impact of a wide variety of cultural environments on the relationship between the dimensions of entrepreneurial orientation and SME performance (Kreiser et al., 2013). Also, the characteristics of the industry (potential growth rate, high technological level, and high capital density) are relevant aspects of entrepreneurial orientation in developing countries (Robinson and Min,

2002). Gao et al. (2018) evaluate the influence of the industrial pressure on the dimensions of entrepreneurial orientation. Under a lower level of industrial pressure, the relationship between proactive orientation and entrepreneurial performance is positive. However, if environmental hostility is perceived (high-pressure level) in developing countries, firms behave more market-oriented than innovation-oriented (Tang and Hull, 2012). Complementing the latter conclusion, internet marketing orientation has a stronger influence in the development of innovation capabilities in exporters SMEs (Aziz and Omar, 2013). In this stream, the research supports that human resources, brand, and entrepreneurial orientation positively affect SMEs' export performance, while management experience, market, and innovation capabilities only increase performance in the face of high entrepreneurial orientation (Celec et al., 2014). Genc et al. (2019) also evidence the relevance of the degree of internationalization of SMEs. It positively affects innovation performance mediated by the market and entrepreneurial orientation. Entrepreneurial performance is studied in family firms, comparing the joint impact of environmental dynamism and national cultural context in the United States and Taiwan (Yu et al., 2019).

Determinants of intrapreneurship and performance

As already mentioned, intrapreneurship refers to those activities that arise bottom-up from entrepreneurial employees (Stam, 2013), so this stream includes articles that point out other determinants of employee entrepreneurial behavior, such as human capital and attitudes, organizational climate, and environmental conditions. Additionally, this entrepreneurial behavior produces corporate venturing, which is reinforced in younger generations (Guerrero et al., 2019). Another outcome of intrapreneurship is innovation performance, especially when employees create synergies with users (Wan et al., 2020). And the adoption of information technology-based innovations to enhance entrepreneurship (Yunis et al., 2018). This group of studies contributed to investigating the effect of the different generations, the technology, and the role of users in enhancing the performance of firms.

Other researchers focusing on intrapreneurship, explain the role of human resources management in performance. Ağca et al. (2012) evaluate the performance of Turkish manufacturing firms. This research showed that environmental factors have a statistically significant impact on intrapreneurship activities in this developing country. It also evidences

the relevance of customer and employee satisfaction when innovation is a measure of performance. Therefore, human resources management is essential in improving the performance of intrapreneurship. Kaya (2006) find that human resources management practices explain an additional variance in the performance of firms in Turkey.

Additionally, scholars are recently attempting to explore the nature of intrapreneurship and entrepreneurship as related phenomena with different motivations and scopes. Individuals may exploit new opportunities via entrepreneurship rather than intrapreneurship, or vice versa. Individual aspects, such as personal characteristics and attitudes toward risk (Parker, 2011), independence, and expected income (Douglas and Shepherd, 2002) are relevant determinants for this decision. The individual maximum utility is a factor that explains different modes of individual behavior (independent entrepreneurship, paid employment, or intrapreneurship) (Thornton, 1999). Few scholars have linked managerial practices as a critical antecedent of intrapreneurship (Rigtering and Weitzel, 2013), spinout decisions (Kacperczyk, 2012), and performance (Kaya, 2006). Country-level studies have focused on formal and informal institutions (Boudreaux et al., 2019; Judge et al., 2015; Knörr et al., 2013).

Dynamic capabilities and corporate entrepreneurship

This stream is related to the role of capabilities in developing entrepreneurship within firms. Developing countries are facing economic reform processes and experiencing substantial changes (March, 1991; Zhou and Li, 2010). Thus, firms are continuously challenged to use their substantive capabilities to create new products and services, new strategies, and enter new markets. As a result, building dynamic marketing capabilities (DMCs) is a crucial component of dynamic capabilities to improve innovation performance (Xu et al., 2018). One of the reviewed articles developed a framework to explore DMCs from both the inter-organizational relationship and entrepreneurial orientation (Xu et al., 2018). From a perspective of the internationalization, this research suggests that entrepreneurial orientation influences firms' willingness and ability to leverage the benefits from relationships. Hence, this relationship strengthens the impact of customer and suppliers' trust but weakens the quality of the relationship with competitors (Xu et al., 2018). Additional research contributions include analyzing entrepreneurship orientation as an antecedent of knowledge-

based resources and dynamic capabilities. Knowledge-based resources impact dynamic marketing capabilities, which, in turn, influence export venture performance in firms (Martin and Javalgi, 2019). Some researchers have recognized the absorptive capacity as a dynamic capability (Zahra and George, 2002). Absorptive capacity (Cohen and Levinthal, 1990) is useful for recognizing and implementing entrepreneurial opportunities based on new knowledge and ideas, mainly when those ideas are generated externally (Audretsch et al., 2021). Researchers conclude a positive relationship between entrepreneurial orientation and innovation performance in the study of developing countries. Also, the role of the absorptive capacity positively moderates this relationship. However, these effects differ in accordance to the dynamics of the external environment in high dynamism; the moderating effect of absorptive capacity will be stronger than when the environment is in low dynamism (Zhai et al., 2018). A few researchers have explored the interaction between the context and the performance of firms (Kearney et al., 2013), the influences on the generation of ideas from, risk-taking, and proactiveness (Sebora and Theerapatvong, 2010), the moderating effect of environmental dynamism on the relationship between dynamic capabilities and new venture performance (Jiao et al., 2013), and capabilities and opportunity identification in China (W. An et al., 2018).

2.5 Future research agenda

Based on the results, we discuss the future corporate entrepreneurship/intrapreneurship research topics from two perspectives, one thematic (Table 2.7) and the other methodological

2.5.1 Thematic perspective

Determinants and effects of corporate entrepreneurship

First, this stream emphasizes how factors affect the performance of firms. In this matter, we find different determinants in the relationship between corporate entrepreneurship and performance, for example, national culture (Urbano et al., 2013), the moderation of firm ownership (Kearney et al., 2013), or when the CEO possesses political skills (Wei and Ling,

2015), information and networks (Thomas et al., 2020). Accordingly, future studies may develop a broader context with additional variables (external and internal) to determine how they contribute to entrepreneurial mindset, management support, and corporate entrepreneurship in developing countries (Sebora and Theerapatvong, 2010). Hence, it is necessary to study the mediation and/or moderation between external and internal determinants in addition to, or in combination with corporate entrepreneurship. Furthermore, exploring those interactions in which entrepreneurs exist, how they function, and why their corporate entrepreneurial activities succeed or fail can provide a deeper understanding of the relationship in a broader scope (e.g., private and public sector corporate entrepreneurship) (Kearney et al., 2013).

In terms of entrepreneurial orientation and firm size, some research questions seek to examine whether the entrepreneurial orientation contribute equally to performance variation in SMEs from developing economies. Consequently, it is necessary to assess whether entrepreneurial firms can gauge their entrepreneurial orientation (Kreiser et al., 2013). By doing so, firms may reduce performance variation by decreasing levels of risk-taking while holding constant their levels of innovativeness and proactiveness. Therefore, despite previous studies, entrepreneurial orientation as a moderator needs to be validated and refined.

Regarding the role of the government, Dai and Si (2018) explore how the perceptions of new policies drive intrapreneurs to engage in entrepreneurial activities. Further research could examine the roles played by corporate governance, organizational structure variables, or other organizational factors. As mentioned before, state-owned firms have very complex organizational structures that limit their flexibility to adopt innovative managerial practices. Furthermore, future researchers may contrast results by investigating the problem by looking into different types of organizations concerning the percentage of state ownership.

CEOs' leadership, networking, and political skills are vital for corporate entrepreneurship (Thomas et al., 2019; Wei and Ling, 2015). However, future research should focus on the characteristics of the entire top management team, rather than just the CEO, when predicting organizational activities and results (Wei and Ling, 2015). This broader approach might provide more accurate information on a firm's corporate entrepreneurship and, therefore, innovation performance. Additionally, middle-level managers' entrepreneurial behavior is

linked to successful corporate entrepreneurship (Kuratko et al., 2005) as they deploy the strategy to the employees. Hence, more studies are needed to contribute to how middle managers can play corporate entrepreneurs' role in organizations and their personal and organizational expectations in leading the strategy.

Determinants of intrapreneurship and performance

The second stream concerns the employee's role in achieving successful performance of firms. Guerrero et al. (2021) assert the different generational cohorts; thus, younger people tend to produce more corporate ventures. This stream also includes the relevance of management practices to increase intrapreneurship (Kaya, 2006).

The individualistic behavior of intrapreneurship implies a need for an in-depth analysis of the characteristics, generational cohorts of employees, and/or their involvement in corporate activities in different environments (Guerrero et al., 2019). Future research should also study the initiatives across diverse generations of employees, intrapreneurs, and entrepreneurs or understand the role of gender. Wan et al. (2020) explore the influence mechanism of users and employees on innovation performance. The analysis of intrapreneurship and performance need to be approached from various theoretical perspectives such as sociology and psychology at the individual level (Pandey et al., 2020), organizational behaviors perspective at the organizational level (Alpkan et al., 2010), and institutional economics at the country level (Urbano et al., 2013). Some authors posit the complexity of firm performance measurements (Ağca, et al., 2012). Therefore, proposing other subjective or objective measures is another further research necessity.

Further studies should be profound in explaining more elements influencing the decision of becoming an intrapreneur or an entrepreneur by combining different levels of analysis. For example, researchers may include variables that differentiate between entrepreneurship as an opportunity and entrepreneurship as a necessity (Knörr et al., 2013). Additionally, the quality of management practices has been linked to better economic performance at a country level (Bloom and Van Reenen, 2007)**,** treatment of labor (Distelhorst et al., 2017), human practices, and the performance of firms (Karplus et al., 2021). Future research should also explore the role of managerial practices in explaining the allocation of entrepreneurial talent over intrapreneurship and entrepreneurship. One future direction is to look into any

governance problems involved in adopting a commitment to human resources practices. For example, investigating how board directors or top management may influence how human resources practices are successfully implemented in an organization. (Chang et al., 2019).

Finally, the literature on the entrepreneurial ecosystem mainly focuses on understanding the dynamic of high-growth startups or scale-ups as an essential source for innovation, productivity growth, and employment (Mason, et al., 2014; Shane, 2009; Stam et al., 2011). However, this approach neglects intrapreneurship which can also be a form of productive entrepreneurship (Baumol, 1993; Elert and Stenkula, 2020), and it merits additional study.

Dynamic capabilities and corporate entrepreneurship

Finally, the last stream is dynamic capabilities and corporate entrepreneurship. Some authors define dynamic market capabilities as a key component to improve innovation (Xu et al., 2018). Other authors identify capabilities as mediators between entrepreneurial orientation and export performance (Martin and Javalgi, 2019). Absorptive capacity is also a positive moderator of the relationship between entrepreneurial orientation and innovation performance. However, this effect is different when the environment is in high dynamics (Zhai et al., 2018).

Building dynamic capabilities is a significant component to improve entrepreneurship within firms. One of the reviewed studies suggests a tension between forming relationships and sharing benefits with partners in coopetitive horizontal relationships (Gao et al., 2018). It is necessary to examine this tension within the vertical relationships and the scope of domestic and foreign firms. Such results may extend the study of inter-organizational relationships and DMCs development. Martin and Javalgi (2019) study the significant influence of knowledge-based resources on the entrepreneurial orientation-performance paradigm at the export venture level of firms. Zhai et al. (2018) also explore these effects using absorptive capabilities in dynamic environments. In this regard, additional research is needed to design (domestic or international) firms to generate and capitalize on entrepreneurship and capabilities to improve performance. Firms in developing countries should require more attention to the context while deploying corporate entrepreneurship activities (Antoncic and Hisrich, 2001; Covin and Slevin, 1991).

Further studies should analyze the firms' capabilities to discover opportunities and evaluate the context to develop a corporate entrepreneurship strategy. Consequently, more research is needed to analyze the institutional influence on firms' strategies when operating in developing countries. This is relevant because the challenges of firms in these contexts are creating capabilities to assess the institutional environment to obtain or maintain a competitive advantage. In addition, creating a framework to measure performance with the appropriate indicators is necessary. These indicators should provide a broader scope of the phenomena beyond short-run financial information (Bierwerth et al., 2015).

One theoretical extension could be the integration of the dynamic ambidextrous capabilities for exploration and exploitation in international SMEs (Celec et al., 2014). Moreover, further study could examine contingent factors, such as networking capabilities with stakeholders in local and international markets and how knowledge acquisition capability might affect innovation performance. As a result, investigating these two organizational capabilities will contribute to the knowledge on export SME performance. Moreover, literature has also proven the complex impact of internationalization on innovation. Due to this, some other contingent factors need attention, to mention networking capabilities and competition, and knowledge acquisition capability, measuring the effects of the links between a firm's internationalization on its innovation performance (Zhai et al., 2018).

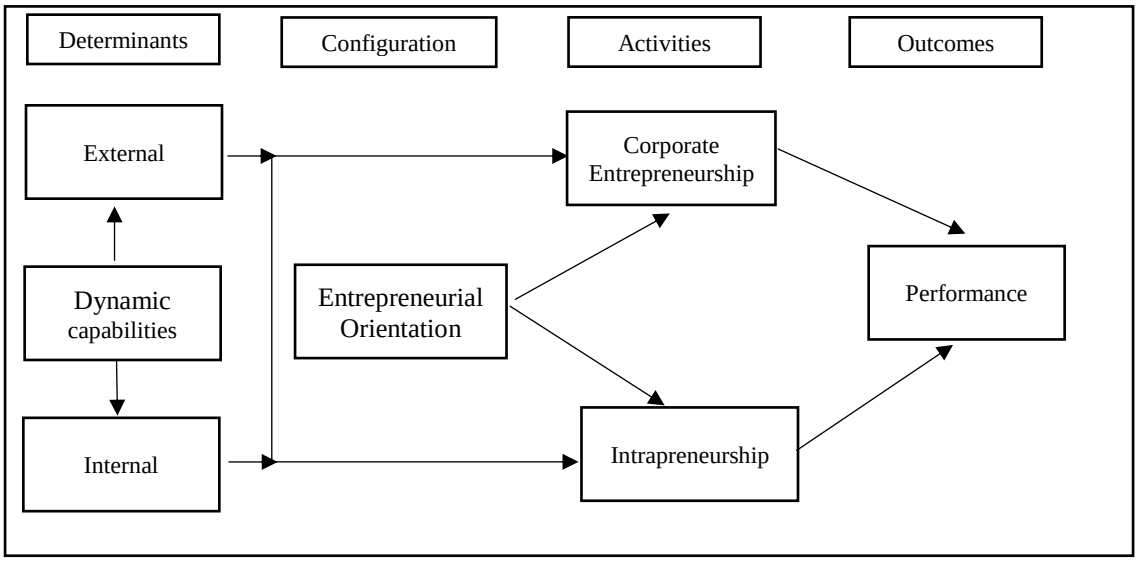
Table 2.7. Summary of research agenda

Research Stream	Future Research Agenda	References
Determinants and effects of corporate entrepreneurship	Including additional variables (external and internal) to determine the mediation and moderation or in combination with corporate entrepreneurship. Deepening into the understanding of the relationship in a broader scope (e.g., private and public sector corporate entrepreneurship) Assessing whether entrepreneurial firms can gauge their entrepreneurial orientation. Integrating the dynamic ambidextrous capabilities of exploration and exploitation in the analysis. Studying other contingent factors such as networking capabilities, competition, and knowledge acquisition capability. Measuring the effects of the links between a firm's internationalization and its innovation performance. Deepening into the roles of corporate governance parameters, organizational structure variables, or other organizational factors. Looking into any governance problems involved in the process of adopting HCHR. Studying how board directors or top management may influence the degree to which HCHR will be successfully implemented in an organization.	(Sebora and Theerapatvong, 2010; Kearney, Hisrich, and Antoncic, 2013; Kreiser et al., 2013; Celec Globocnik, and Kruset al. 2014; Zhai et al., 2018; Dai and Si, 2018; Chang, Wang, and Cui, 2019)

	Studying middle-level managers' role in deploying the corporate strategy. Analyzing the characteristics, generational cohorts of employees, and their involvement in corporate activities in different environments. Studying the diverse generations of employees, intrapreneurs, and entrepreneurs.	
	Understanding the role of gender.	
Determinants of intrapreneurship and performance	Determining more mediating and moderating variables that affect different performance measures.	(Ağca et al., 2012; Alpkan et al., 2010; Guerrero et al., 2021; Pandey et al., 2020)
	Employing various theoretical perspectives.	
	Proposing other subjective or objective measures for performance. Understanding the decision of becoming an intrapreneur or entrepreneur.	
	Studying management practices and intrapreneurship.	
Dynamic capabilities and corporate entrepreneurship.	Considering entrepreneurial ecosystem analysis in becoming an intrapreneur. It is necessary to examine the tension within the vertical relationships and the scope of domestic and foreign firms. Analyzing the institutional influence of firms' strategies. Providing relevant indicators of performance. Integrating the dynamic ambidextrous capabilities. Studying capabilities for internationalization and innovation of firms.	(Gao et al., 2018; Zhai et al., 2018; Martin and Javalgi, 2019)

Finally, the following Figure (2.5) describes the conceptual framework of corporate entrepreneurship and related concepts in developing countries. This framework highlights the dynamic capabilities of firms that interact with external (e. g., institutions, government, culture) and internal (e. g., resources, capabilities, firm size) determinants in order to develop an entrepreneurial orientation (at the firm level and the individual level). The effect of this interaction is entrepreneurial activities developed by top management (corporate entrepreneurship) and individuals (intrapreneurship). Both to generate the performance needed to maintain (or gain) a competitive position in the market.

Figure 2.5. Conceptual framework



Source: Own elaboration

2.5.2 Methodological perspective

From a methodological perspective, the authors included in this review call for the necessity to improve methodological issues and increase the robustness of the empirical evidence. First, self-report data for all variables could lead to response biases that may be further compounded in the cross-cultural context and common method variance (Podsakoff and Organ, 1986). Therefore, it is better to have multiple respondents in each organizational unit to minimize the effects of systematic response bias (Guerrero et al., 2021; Kearney et al., 2013; Mustafa et al., 2016). Second, the cross-sectional nature of the research in corporate entrepreneurship does not allow for causal inferences to be drawn. Further longitudinal studies are required to explore the different paradigms related to corporate entrepreneurship and performance over time (Gupta et al., 2004; Liu et al. 2013). Third, future research needs more accurate proxies for dependent and independent variables related to corporate entrepreneurship (Sebora and Theerapatvong, 2010; Turro et al., 2014). Fourth, most of the research is focused on China; therefore, considering the limited research conducted in this field in different developing countries, future research should be extended to other developing countries to generalize the results. It would also be helpful to include other organizational and environmental contingencies or boundaries related to the autonomy and performance of family firms, and information technology industries (Yu et al., 2019), the

role of broader industrial factors such as competitors, and political organizations (Urban and Wood, 2015).

2.6 Conclusion

Entrepreneurial activities are critical for stimulating the growth and performance of established organizations (Bierwerth et al., 2015; Rigtering et al., 2017; Finkle, 2020). Consequently, there is an increasing interest in entrepreneurship within firms operating in developing countries. We conduct a systematic literature review to provide an overview of the different conceptualizations of corporate entrepreneurship in developing economies and explore the future research opportunities to improve the literature in the field. We study articles within the Web of Sciences in 1999 and 2020, focusing mainly on the concept of corporate entrepreneurship and intrapreneurship. The results are presented in quantitative analysis and qualitative or content analysis. First, the field is mapped to identify the top journals that published articles on the subject, and the main contributors, and citations. As a result, the *Journal of Business Research* and the *Strategic Management Journal* are the journals with more number articles. Regarding the theoretical frameworks used to explain the phenomenon, we find a predominance of the institutional approach and the resource-based view. The studied authors explain several research questions regarding the firm in developing countries through quantitative and qualitative techniques. Our content analysis depicts three literature streams.

We achieved this systematic literature review using the Web of Sciences database in the entrepreneurship field. We identify specific search terms and inclusion criteria to ensure a quality threshold based on the literature. Despite these efforts to provide a systematic approach, the review has some limitations. First, this systematic literature review may not have included all research addressing corporate entrepreneurship as books were not part of it. Moreover, this review includes journals in the thematic areas of entrepreneurship and management. Therefore, possibly relevant studies within other research fields is excluded, including conference proceedings and doctoral theses.

Second, the central assumption of a co-word analysis is that the subject of the articles can be summarized in a limited number of keywords. If two words co-occur within one article, the two research topics they represent are related, and the higher frequency of the co-word, the stronger correlation in terms pairs. However, this analysis is extremely sensitive to the selection of words. The quality of the co-word analysis depends on a variety of factors, such as the quality of terms and indexes, the high-frequency terms extraction, and the adequacy of statistical methods (Courtial, 1994). Hence, to have improved results, it is necessary to optimize the co-word analysis, for example, in different stages to improve and optimize. Finally, there is a broader literature on entrepreneurship within firms beyond intrapreneurship and corporate entrepreneurship. For example, some authors include corporate venturing and strategic entrepreneurship (Lampe et al., 2020). However, these mentioned concepts are not studied profoundly in this chapter. Future researchers may consider exploring these concepts that are also relevant in developing countries.

Finally, some of the areas for future research are addressed in the next chapters. Particularly, those related to the determinants an effect of entrepreneurship within firms. In this regard, in the next chapter the study focuses on the formal and informal institutions that may influence the decision of an employee to become intrapreneur.

Chapter 3

The effect of institutions on intrapreneurship: An analysis of developed vs. developing countries

3. The effect of institutions on intrapreneurship: An analysis of developed vs. Developing Countries

3.1 Introduction

As discussed in the previous chapter, the concept of intrapreneurship needs more research in different levels of analysis. This concept has grown as an interesting research topic for scholars. It is a relevant research topic because previous literature widely agrees in that intrapreneurship has a positive effect on firm performance, innovation and on the economic development of regions and countries (Antoncic and Hisrich, 2001; Parker, 2011; Zahra, 1986; Covin and Miles, 1999). Hence, several developed and developing countries, such as Israel (Dana, 1999) or Slovenia (Antoncic and Hisrich, 2001) have seen how intrapreneurship contributed to their innovation and economic growth. However, recent studies account for underexplored aspects of the relationship between intrapreneurship (and corporate entrepreneurship) and firm performance (Agca, et al 2012; Bierwerth et al., 2015). A significant number of authors have proposed determinants including personal traits and characteristics of intrapreneurs (Martiarena, 2013), job satisfaction by employees (Akehurst et al., 2009), the transformation of ideas by middle managers (Radaelli and Sitton-Kent, 2016), an entrepreneurial mindset in corporate entrepreneurship (Kreiser et al., 2021), organizational structure and values (Zahra, 1991) factors related to governance and type of ownership (Zahra, 1996), access to resources (Ireland et al., 2009; Wiklund and Shepherd, 2003) or organizational support for intrapreneurial projects (Antoncic and Hisrich, 2001) the ambidexterity experiences of employees while working in organizations (Yeganegi et al., 2019), and the dynamic effect of labor mobility (Audretsch et al., 2021).

Therefore, most of these studies have researched the antecedents of intrapreneurship by focusing on the individual and organizational levels of analysis. Hence, other relevant aspects, including the environmental determinants of intrapreneurship, have not been studied in detail from a quantitative perspective involving observations nested in country-level measures. Environmental factors are typically studied using an institutional perspective (Bruton et al., 2010; Shane, 1995). In management, institutions influence individuals and organizational behavior with consequences on the performance of the firm (Schneider and

Engelen, 2015). A few studies have analyzed the role of institutional factors for intrapreneurship. They focus on factors such as cultural and contextual aspects (Hughes and Mustafa, 2017), media exposure (Turro et al., 2014), firm-environment alignment of entrepreneurial opportunity exploitation (Yoruk and Jones, 2020), and fear of failure and self-efficacy (Douglas and Fitzsimmons, 2013) as triggering factors affecting intrapreneurship in different economic contexts and regions. However, more conclusive results about the factors that influence intrapreneurship are required, especially in developing countries (Guerrero and Peña-Legazkue, 2013; Phan et al., 2009), where it has been argued that the behavior of these factors may be different than in western economies (Hughes and Mustafa, 2017). This omission is particularly relevant considering that previous research has emphasized the importance of paying attention to contextual factors in order to understand entrepreneurial initiatives (Zahra and Wright, 2011). Similarly, theoretical models in the area of corporate entrepreneurship also consider the role of environmental factors (Ireland et al., 2009). Yet, there are no quantitative studies about the antecedents of intrapreneurship in the context of developing countries or regions.

Previous research on independent entrepreneurship also has theorized how country-level (institutional) conditions affect individual behavior (De Clercq et al., 2013). However, there is no evidence of this effect on intrapreneurs. Therefore, it is necessary to examine the interaction between formal and informal institutions (Judge et al., 2015) and determine the extent to which these antecedents explain variations between stages of economic development. Overall, this chapter aims to analyze the extent to which formal and informal institutions interact and determine the likelihood of an employee becoming an intrapreneur in developed and developing economies. For the analysis, we employ a multilevel logistic regression technique, data from the Global Entrepreneurship Monitor (GEM), and the Heritage Foundation for the years 2016-2018.

From a theoretical perspective, our results contribute to comparative international entrepreneurship research (Terjesen et al., 2016) by explaining whether and how the institutional context (developed versus developing countries) may be a determinant driver in facilitating employees' decision to become intrapreneurs. In the development of intrapreneurial initiatives, individuals deal with uncertainty, perceptions, and obstacles that impede the development of new projects. Those obstacles could be overcome depending on

the extent to which the formal institutional environment provides additional resources and support (De Clercq et al., 2013; Schmutzler et al., 2019). It is of special interest to understand intrapreneurship institutional context because intrapreneurship is more prevalent in developed countries than in developing countries (Bosma et al., 2012). Furthermore, research in intrapreneurship is typically limited to one level of analysis (Martiarena, 2013; Guerrero and Peña-Legazkue, 2013). Single-level research offers an incomplete understanding of the process of intrapreneurship (De Clercq et al., 2013) and must be complemented using multilevel models (Guerrero et al., 2021; Shepherd, 2010). To address this limitation, we develop a model to measure individual-level factors and institutional country-level factors in the creation of new businesses in established firms. Additionally, this study responds to the demand for more cross-country research that considers the interaction effect of both formal and informal institutional conditions, especially in the context of developing countries (Ivy and Perényi, 2020; Webb et al., 2020). We contemplate the moderating roles of the developed and developing countries' formal institutions (i.e., the rule of law, government size, regulatory efficiency, and market openness) and informal institutions (i.e., fear of failure, media attention to entrepreneurship, and social status of entrepreneurship). Therefore, we provide a more nuanced approach than implied in previous studies since the environmental antecedents play both a direct and indirect (moderating) role. This provides an enhanced understanding of how entrepreneurial initiatives develop in different institutional contexts. The effect of individual-level variables on intrapreneurship appears to be influenced by the more general institutional setting.

The chapter is organized as follows. The next section reviews the literature on intrapreneurship in the context of developed and developing countries and presents the hypotheses of the study. Then we detail the methodology of the study, the main findings of the study. Additionally, we discuss and positions the findings in the existing literature. Finally, the last section provides conclusions and suggests some limitations and future research lines.

3.2 Conceptual framework

3.2.1 Informal institutions and intrapreneurship

This chapter focuses on the individual decision of an employee to become an intrapreneur due to the institutional context. We define intrapreneurship as an employee's entrepreneurial behavior oriented to ideate, create, and deploy a new venture, new strategy, or innovative project for the improvement of the firm (Pinchot, 1985; Thornton, 1999; Zahra, 1991). As defined in Chapter 1, this research is framed in institutional economics to measure the extent of the entrepreneurial behavior is conditioned by the interplay of rules, regulatory systems, beliefs, codes, and national culture, as well as the organizational constraints of the firms (Guerrero and Peña-Legazkue, 2013; Stam, 2013; Turro et al., 2016).

From an informal institutions perspective, scholars have long pointed out the importance of socio-cultural factors in the decision to create new businesses, arguing that entrepreneurship is embedded in a social context (Urbano et al., 2019). Cultural values, expressions, and norms are a fundamental component of the informal institutional environment, because they condition human behavior (Ali et al., 2020). From this perspective, previous research has shown that certain individuals' fears, interests, personal aspirations, or professional objectives are a relevant component of the informal institutional environment that can condition individuals' entrepreneurial intentions, and actions (Arenius and Minniti, 2005; Martiarena, 2013). Values and national culture are therefore important for entrepreneurship (Hechavarria and Reynolds, 2009). A national culture that is conducive to entrepreneurship will encourage typical behaviors, including innovation and proactivity within existing firms. Individualistic cultures view people as unique and value people for their achievements, status, and other unique characteristics. To some extent, a firm's behavior (or culture) is the product of its employees' individualistic behavior, so national culture will also have an impact on the entrepreneurial orientations of firms (Fayolle et al., 2010).

Morris et al. (1993) reported that intrapreneurship is higher in moderately individualistic cultures, while Venkataraman et al. (1993) evidenced that the cultural values of uncertainty avoidance (correlated with fear of failure) explain the different approaches to the corporate

venturing process in different countries. Similarly, extant research (Hisrich et al., 2005) has associated risk taking and risk seeking to entrepreneurial activity. Kreiser et al. (2010) evidenced that managers in small firms in countries with high uncertainty avoidance and high power distance show less proactiveness and risk taking.

Scholars have researched the influence of risk aversion on entrepreneurial decisions (Kihlstrom and Laffont, 1979). Entrepreneurs need to assess uncertainty and risk propensity (McMullen and Shepherd, 2006). Lafuente et al. (2007) assert that, depending on the context, the social stigma of failure increases the risks associated with engaging in entrepreneurship. Developing a new product is also shaped by the same informal institution (Stuetzer, et al., 2017). In a firm context, fear of failure may be relevant to the choices of middle managers to engage in intrapreneurship (Hayton and Kelley, 2006). In larger organizations, cultures, team dynamics, and the psychological safety of the firm environment might increase or reduce employees' fear of failure (Hayton, 2005). Fear of failure as a manifestation of low entrepreneurial national culture has consequences in firms. For example, less risk taking and less proactiveness within existing firms (Kreiser et al., 2010) reduce growth ambitions in established firms (Hambrick and Crozier, 1985). As a result, fear of failure has a negative effect on intrapreneurship (Lumpkin and Dess, 1996). In broad terms, contrary to independent entrepreneurship, the risk is shared between the firm and the intrapreneur. If the project fails, the intrapreneur may be transferred to another role within the firm, whereas the independent entrepreneur would need to look for another occupation (Martiarena, 2013). The decision of an employee to become an intrapreneur depends on the expectation for success. The greater the expectation of success (less risk) employees attribute to the project, the more benefit they will expect from the project and the more likely they will be to participate: "Consequently, they have no incentive to undertake highly uncertain (entrepreneurial) projects and will prefer those with a low level of risk" (Jones and Butler, 1992, 736). However, comparing the effect of fear of failure with the decision to become an intrapreneur or entrepreneur may have a similar (positive) direction. It is relevant to note that if an employee fears failure, the likelihood of intrapreneurship is significantly higher than for entrepreneurship (Martiarena, 2003).

The effect of fear of failure is also influential in the context of developing regions. Firms with a lower level of resources are less protected from overall failure (Audia and Greve, 2006; Plambeck, 2012). Organizationally, an employee may be willing to take risks depending on the tolerance of management. There is evidence of this in developing countries like Turkey (Alpkan et al., 2010), while another aspect researched in Kenya is when employees face the prospect of job loss, they mitigate that fear with the gestation of low-level entrepreneurial activity (Mwangi and Rotich, 2019). Thus, companies may foster intrapreneurship in several ways, such as recognizing innovative ideas from individuals, providing support and resources or mentoring, or institutionalizing intrapreneurship within the firms' cultural organization (Urbano and Turro, 2013). Based on these arguments, we propose the following hypothesis:

> *Hypothesis 1: The likelihood that individuals become intrapreneurs decreases when they have a fear of failure when starting a business, both in developed and developing countries.*

Media has a clear influence on how society understands and relates to reality, so it therefore has the power to shape individuals and/or society in the long term (Martí-Sánchez et al., 2019). Previous research has explored the influence of mass media through national culture on entrepreneurship (Hindle and Klyver, 2007). Similarly, media has been considered a relevant component of the informal institutional environment (Turro et al., 2014), because it can influence the perception of how likely or appealing it is to engage in new entrepreneurial initiatives (Lounsbury and Glynn, 2001).

Media attention is also relevant to organizations because it improves the legitimacy of a firm among stakeholders, especially concerning the consumer's attitude toward organizations (Graf-Vlachy et al., 2020) and their reputation (von Bloh et al., 2020; Carroll and McCombs, 2003). Currently, media is attracted by small, aggressive, entrepreneurially oriented firms dominating their markets, so firms might enhance their entrepreneurial behavior to maintain competitiveness, and media attention is relevant for this purpose (Hisrich, 1990). Kjaergaard et al. (2011) found that positive media reports aligned employees' beliefs and actions with the portrayal of the firm. Indeed, media stories play a relevant role in the process that enables the emergence of new projects. Investors, venture capitalists, organizations, investment

banks, and other entities consider learning about these stories to be helpful (Lounsbury and Glynn, 2001).

There is also a complex regional connotation to media coverage and its effects. Countries where entrepreneurship is desirable tend to legitimize entrepreneurship as a career path, and entrepreneurs are likely to be rewarded with wider media coverage (Muralidharan and Pathak, 2017). Nevertheless, it is important to understand that not all entrepreneurship activities occurring in a given region will be considered valuable by public media (von Bloh et al., 2020). Finally, media coverage is a relevant antecedent in the entrepreneurial process, and this is also the case in developing countries (Dheer, 2017; Eijdenberg et al., 2019). Overall, we pose the following hypothesis:

> *Hypothesis 2: Media attention to successful entrepreneurs increases the probability of employees engaging in intrapreneurship, both in developed and developing countries.*

Informal institutions affect collective and societal mechanisms through joint expectations and preferences. These mechanisms influence how individuals perceive the economic and social feasibility and desirability of entrepreneurial action (Autio et al., 2013). Capitalist societies commonly consider entrepreneurs as cultural and economic protagonists. Social acceptance of such a role is a trigger to motivate other people to engage in entrepreneurial behavior (Anderson and Warren, 2011; Carsrud and Brännback, 2011). Due to this fact, the culture and social norms surrounding employees shape their behaviors and perceptions; if the role is perceived as important for economic and social progress, then the status associated with entrepreneurship may be high. In an individualistic culture, employees are motivated by self-interest and achievement of personal goals. To be motivated to contribute to a collective action, the employees need to obtain recognition for their efforts (Morris et al., 1993). Additionally, top and middle-level managers in firms usually have a social status among employees that can facilitate entrepreneurial activities through cooperation among departments, identification of new opportunities, and resources to configure new projects (Hornsby et al., 2002).

In some countries, the role played by entrepreneurs is determined by the community, whereas, in others, it is not (Fisher et al., 2017; Shapero and Sokol, 1982). These differences

may influence, among elements, social status, encouraging or impeding them from becoming intrapreneurs (Brouthers et al., 2015). Therefore, we propose the following hypothesis:

> *Hypothesis 3: The higher the social status of entrepreneurs, the more likely other employees will engage in intrapreneurship, both in developed and developing countries.*

3.2.2 Formal institutions and intrapreneurship

As mentioned, North's formal institutions are related to property rights and formal regulatory policies, as well as business, credit, or labor regulations. The relative strength of institutions can compromise governments' policies and firms' innovation strategies and intrapreneurship (Ljunge and Stenkula, 2021; Spencer et al., 2005). Formal institutions that relate to the effectiveness of government action are relevant in shaping human behavior. Employees may be more or less likely to be intrapreneurs depending on the institutional constraints in their local environment. Several previous studies consider economic freedom as market economy–oriented institutions and policies (Frederick and Monsen, 2011; Saunoris and Sajny, 2017; Sobel et al., 2007). The different dimensions of economic freedom, such as the size of the government; legal structure and security of property rights; freedom to trade internationally; or regulation of credit, labor, and business may constitute key context conditions determining the characteristics of entrepreneurship (Angulo-Guerrero et al., 2017). These types of factors have been extensively used as proxies for formal institutions in previous research (Boudreaux et al., 2019; De Clercq et al., 2013; Estrin et al., 2013; Judge et al., 2015; Sahasranamam and Nandakumar, 2020; Turro et al., 2014). Accordingly, we operationalize formal institutions as economic freedom (Bjørnskov and Foss, 2013).

> Economic freedom is defined as the absolute right of property ownership; fully realized freedoms of movement for labor, capital, and goods; and an absolute absence of coercion or constraint of economic liberty beyond the extent necessary for citizens to protect and maintain liberty itself. In other words, individuals in an economically free society would be free and entitled to work, produce, consume, and invest in any

way they please under a rule of law, with their freedom at once both protected and respected by the state (Miller and Kim, 2010, 58).

Sobel et al. (2007) found that there is a positive and statistically significant relationship between the level of economic freedom and total entrepreneurial activity. As a result, the effects of economic freedom on intrapreneurship depend on its extent. On the one hand, in regions with less economic freedom—such as most of developing countries—the expected benefits are lower due to instability and uncertainty (Acemoglu et al., 2005; Bylund and McCaffrey, 2017), while on the other hand, societies with strong institutions have reduced transaction costs and facilitate human interaction and entrepreneurial action (Baumol, 1996).

Institutional economics suggest that as economic freedom decreases, the likely benefits of individuals will be relatively lower, because higher taxes and costs of inputs lead to higher uncertainty (Bylund and McCaffrey, 2017). The conditioning factors motivating firms to engage in innovation are thus incomplete (Baumol, 1996; Murphy et al., 1991). Empirical evidence suggests that in developed countries with appropriate regulatory systems, limited government intervention, efficient regulation, and open markets, firms are motivated to engage in innovative activities (Zhu and Zhu, 2017). Firms in developing countries with less efficient financial and legal institutions are affected by corruption (Vartuhí et al., 2010), so resources for innovation are not appropriately allocated. The fewer restrictions on capital movements across boundaries, the easier the access to international capital markets, which increases the supply of capital and may also improve innovation (Hsu et al., 2014). Moreover, in countries with smaller governments, firms are stimulated to create new projects in different sectors (Bjørnskov and Foss, 2013). Consequently, we pose the following hypothesis:

Hypothesis 4: Higher economic freedom increases the likelihood of engaging in intrapreneurship, both in developed and developing countries.

3.2.3 The moderating role of formal institutions

Following Boudreaux et al. (2019), we test the moderating role of formal institutions (specifically, economic freedom) on the relationship between informal institutions (fear of

failure, media attention, and social status) and intrapreneurship. As mentioned, fear of failure has a strong negative relationship with entrepreneurship (Arenius and Minniti, 2005; Lafuente et al., 2007). Thus, formal rules can complement and increase the effectiveness of such informal constraints (North, 1991). Public policy, like convenient property rights or a proper rule of law, might reduce the fear of failure among entrepreneurs.

Investigations conclude that intrapreneurs who are less afraid of failing are more likely to take part in risky activities, including creating a new firm unit or an innovative project (Urbano and Turro, 2013). Societies with less economic freedom, including some developing countries, can inhibit intrapreneurs' ability to function, because the fear of failure is more considerable. Therefore, the expected profits are lower because essential inputs are not initiated properly (Baumol, 1996).

Entrepreneurs in developed countries are characterized by a higher fear of failure than those in developing countries (Ács et al., 2013). Less risk-averse entrepreneurs in developing countries create more ventures due to necessity, instead of opportunity, as happens in developed countries. Nevertheless, the decision to be an intrapreneur may be analyzed differently. This decision could be associated with the market conditions, the competitiveness of the economy, the strength of firms, and the stability of formal institutions. The more stable the conditions, the more disposed employees and firms are to initiate new projects. Evidence suggests a positive relationship between policy uncertainty and firms' cash holding (Phan et al., 2019). Policy uncertainty is common in developing countries, and firms tend to delay investment in new projects due to precautionary motivations (An et al., 2016).

We can conclude that the formal institutional environment plays a role in moderating fear of failure; this may support the regional differences in intrapreneurship. Accordingly, we present the following hypothesis:

> *Hypothesis 5a: Economic freedom moderates the relation between fear of failure and intrapreneurship, such that the relationship is stronger for higher values of economic freedom. This moderating effect is greater in developed countries than in developing ones.*

The way in which the media describes entrepreneurial activity is a relevant element in influencing the perception of the public towards entrepreneurs. In this matter, government

plays an important role in creating policies to shape the institutional environment to affect entrepreneurship (Minniti, 2008).

For government, media is a vehicle to inform, explain, and try to earn support for its programs and policies. Consequently, the influence of formal institutions on the relationship between media and intrapreneurship depends on the strength of those institutions. Countries with less economic freedom experience political and economic interest in controlling the information available to the public (Bjørnskov, 2018), which leads to stories about entrepreneurs and intrapreneurs not being available. Negative media coverage in developing countries may also be an obstacle to employees becoming proactive (Eijdenberg et al., 2019).

On the other hand, in countries with high economic freedom, journalists have no limitation in disseminating their perceptions and opinions about certain topics, including success stories about business. We can summarize that the exposure of entrepreneurs by the media is particularly important in contexts where stakeholders are challenged by uncertainty. A similar situation is likely to happen to intrapreneurs in developing countries (Urbano and Turro, 2013). Following the aforementioned arguments, we posit the following hypothesis:

> *Hypothesis 5b: Economic freedom moderates the relation between media attention to successful entrepreneurs and intrapreneurship, such that the relation is stronger for higher values of economic freedom. This moderating effect is greater in developed countries than in developing ones.*

As discussed before, when economic freedom increases, productive entrepreneurship increases, but when economic freedom decreases, unproductive entrepreneurship increases (Baumol 1996; Sobel et al., 2007). Culture also plays a relevant role in this equation. Etzioni (1987) has argued that "legitimation" is a major element in shaping the level of entrepreneurship in society. The level of entrepreneurship interest increases depending on the extent to which entrepreneurs are perceived as legitimate. The individual perception for being an entrepreneur will intensify if they see others involved in entrepreneurship (Williamson and Mathers, 2011).

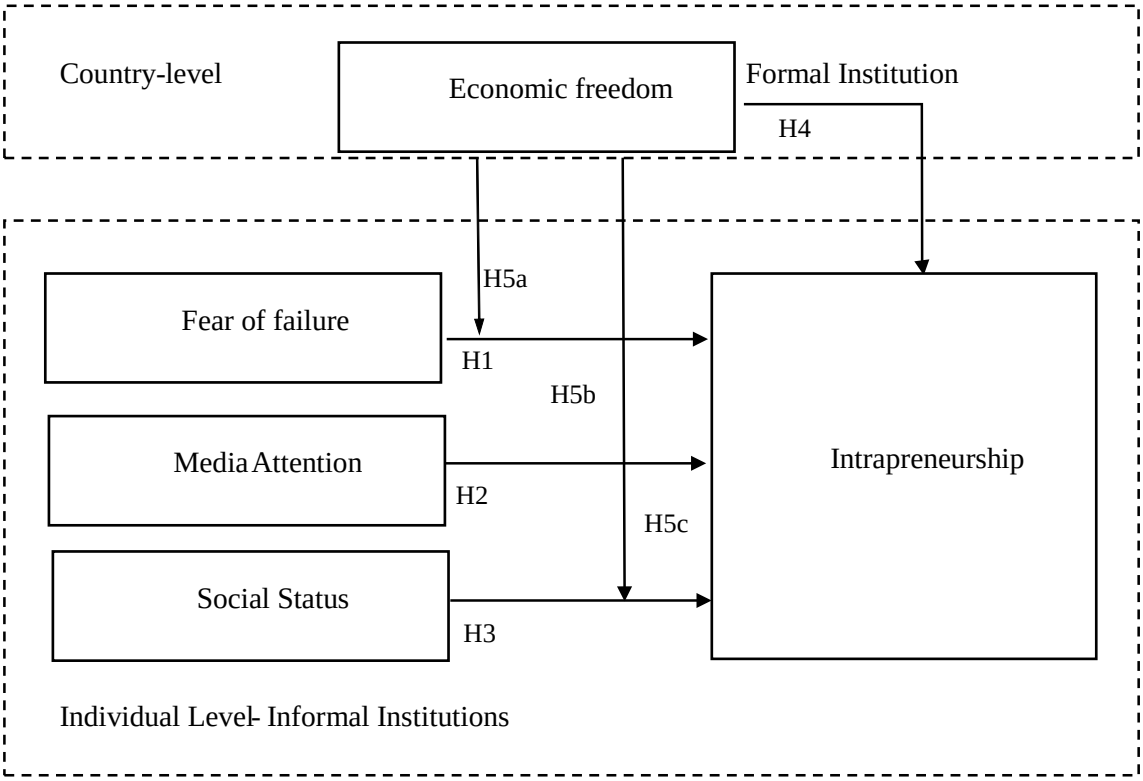
When cultural aspects are seen as a filter through which formal constraints must pass, the culture complements economic freedom; formal rules are expected to be viewed more credibly, and thus are more necessary. The argument for the interaction of both culture (in

this case, the social status of entrepreneurs in society) and economic freedom provides some explanation as to why similar economic institutions can translate into strikingly diverse economic outcomes across the world (Mathers and Williamson, 2011). Importantly, having a society that recognizes the status of entrepreneurship consistent with economic freedom can enhance productivity. Conversely, in developing countries characterized by ineffective formal institutions, which coexist alongside informal institutions, unproductive entrepreneurship is established (Welter and Smallbone, 2011). It is also reported that the regional distinctions in less industrialized areas are mainly due to the presence of informal institutional factors, emphasizing the impact of positive entrepreneurial examples on the entrepreneurial decision process (Lafuente et al., 2007). Accordingly, we suggest the following hypothesis:

> *Hypothesis 5c: Economic freedom moderates the relationship between social status and intrapreneurship, such that the relation is stronger for higher values of economic freedom. This moderating effect is greater in developed countries than in developing ones.*

Finally, we summarize this literature review in Figure 3.1, which depicts the proposed model explaining the relationship between intrapreneurship and institutions at the individual and country level.

Figure 3.1. Proposed Model



Source: Own elaboration

3.3 Methodology

3.3.1 Data

The hypotheses are tested using data from the GEM, covering 29 developed countries (237,053 observations) and 31 developing countries (177,201 observations) with 2014–2020 data.[1] The economic freedom score was collected from the Heritage Foundation databases of 2014–2020.

The GEM research program is an annual assessment of the national level of entrepreneurial activity initiated in 1999. The GEM reports characterize both entrepreneurs and their businesses in each participating country (Reynolds et al., 2002). For this research, the GEM

[1] The classification of developed and developing countries is based on the World Economic Situation and Prospects Report published by the United Nations (2016).

database employed contains information from the 18 to 64-year-old adult population (APS) survey for the years 2014, 2015, 2016, 2017, 2018, 2019, and 2020. The APS captures the measures of entrepreneurial attitudes, activity, and aspirations. In advanced countries, where the majority of the population lives in households with landline phones, these surveys are completed by phone. Generally, the first adult in the household who serves as a respondent is asked to participate. In countries where a small proportion of households have landline phones, a geographically stratified sampling procedure is used to locate households and respondents for face-to-face interviews. The normal minimum sample is 2,000 adults per country and year. These data are collected (usually with the support of an independent survey vendor) between the months of April and June in all participating countries (Reynolds et al., 2005).

The index of economic freedom provides scores about individual autonomy, concerned mainly with the freedom of choice enjoyed by individuals in acquiring and using economic goods and resources (Miller and Kim, 2016). This study gathered information on the economic freedom score from 60 countries that were the subjects of research. Finally, the data for the control variables gross domestic product and population were collected from the World Bank.

The economic freedom score (country-level) is selected as a proxy for formal institutions, because this measure collects policy intervention that might influence human behavior in society (Boudreaux et al., 2019; Miller and Kim, 2016). This variable moderates the impact of informal institutions: fear of failure, the social status of entrepreneurs, and media attention (individual-level).

3.3.2 Variables

Dependent variable. Intrapreneurship is the dependent variable and is a measure of individuals who, alone or with others, have been involved in starting a new business or a new venture for their employer as part of their normal work during the last three years. This variable was introduced in the GEM research with the main objective of capturing the entrepreneurial activity of employees in firms and comparing it to independent entrepreneurial activity. Since 2011, the GEM study has therefore collected this information

every year and currently includes a set of questions to inquire if employees are now or have been involved in intrapreneurship. The activities for their employers include establishing a new channel or subsidiary and launching new products or product-market combinations (Stam, 2013). The variable is coded as *ipactive*, and it has been used in studies that measure entrepreneurship in established companies (Guerrero and Peña-Legazkue, 2013; Turro et al., 2016).

Independent variables. From the GEM APS, we also extracted the individual-level measures of fear of failure, media attention, and social status of entrepreneurs. Fear of failure (*fearfail)* is a binary variable that assigns a value of 1 if an individual is afraid of failure when engaging in a new business and 0 otherwise. Media attention (*nbmedia)* has the value of 1 if an individual perceives media exposure about successful entrepreneurs, and 0 otherwise. Finally, the social status of entrepreneurs (*nbstatus)* takes the value of 1 if an individual perceives that an entrepreneur is culturally perceived as an individual with high status, and 0 otherwise. Previous research has used individual-level variables to measure these informal institutions: fear of failure (Lafuente et al., 2007), media attention to successful entrepreneurs (Muralidharan and Pathak, 2017), and social status of entrepreneurs (Kalden et al., 2017).
Economic freedom is a measure proposed by the Heritage Foundation (2016). This country-level measure contains information based on four pillars: the rule of law, government size, regulatory efficiency, and market openness. First, the rule of law is the average of the protection of property rights and freedom from corruption. Second, government size consists of two sub-indices, covering fiscal freedom and government spending. Third, regulatory efficiency consists of business freedom, labor freedom, and monetary freedom. Finally, the indicator for market openness is formed from indices of trade openness measuring average tariffs, investment freedom, and financial freedom (Miller and Kim, 2016). The score for economic freedom ranges between 0 and 100, with 100 being the highest indicator of economic freedom. The economic freedom score has previously been used in research to measure a country's level of institutional development (Dau and Cuervo-Cazurra, 2014; Estrin and Mickiewicz, 2011; McMullen et al., 2008). A high value for this variable is associated with strong formal institutions.

Control variables. Following other studies using multilevel modeling (Capelleras et al., 2019; Wennberg et al., 2013), we propose several individual-level controls, including age,

due to the important influence on entrepreneurial entry, and gender. Women are typically less willing to enter into entrepreneurial activities than men. Education is also associated with entrepreneurial entry. The GEM research suggests that a country's level of economic development influences entrepreneurial activity (Reynolds et al., 2002). Therefore, as country-level control variables, we control for gross domestic product per capita and gross domestic product (in millions) for each country. The descriptions of these variables are depicted in Table 3.1.

Table 3.1 Description of variables

Variable	Description	Source
Dependent Variable		
Intrapreneurship	Binary variable that shows if 'in the last three years, you alone or with others have been involved in the development of a new business with your employer–an effort that is part of a normal work', Yes=1, No= 0.	GEM APS 2014-2020 – Developed and developing countries
Independent Variables		
Informal Institutions		
Fear of failure	Binary variable that indicates if 'fear of failure would prevent you from starting a business', Yes=1, No=0.	GEM APS 2014-2020 – Developed and developing countries
Media Attention	Binary variable that indicates 'In your country, you will often see stories in the public media about successful new businesses'. Yes=1, No= 0.	GEM APS 2014-2020 – Developed and developing countries
Social Status	Binary variable that indicates the opinion about statement 'those successful at starting a new business have a high level of status and respect' Yes=1, No= 0.	GEM APS 2014-2020 – Developed and developing countries

Formal Institutions		
Economic Freedom	Economic freedom score. It evaluates countries in 4 dimensions of freedom: Rule of Law, Government Size, Regulatory Efficiency and Open Markets. The score ranges from 0 to 100.	Heritage foundation IEF 2014-2020 Developed and developing Countries
Control Variables		
Age	Current age of the respondent	GEM APS 2014-2020
Gender	Male=1, Female = 0	GEM APS 2014-2020
Education	The individual has completed secondary school. Yes =1, No=0	GEM APS 2014-2020
GDP per capita	Gross domestic product in parity purchasing power	The World Bank Database

The multilevel logistic regression model, also known as mixed-effects logistic regression, combines individual-level (level 1) observations nested in the country-level measure (level 2) (Capelleras et al., 2019; Wennberg et al., 2013). This approach views individuals as acting homogenously and accounts for how the environment influences their decisions (Hindle et al., 2015; Wennberg et al., 2013; Yeganegi et al., 2019). The aim of multilevel logistic regression is to estimate the odds that an event occurs. In this research, we are analyzing the odds that an employee becomes an entrepreneur within a firm, while considering the dependency on individual factors nested in higher level data. Essentially, it will allow us to estimate the effect of informal factors and economic freedom on employees' decision to engage in intrapreneurship and the way they interact (cross-level). We aim to estimate the influence of the country factor on the individual likelihood of engaging in intrapreneurship using fixed effects.

The multilevel modeling consists of three-step estimation to observe the determinants of intrapreneurship. First, we use a model with individual-level variables (Model 1). Second, the model incorporates the country-level controls and predictors (Model 2). Finally, we incorporate the interaction terms between our three informal factors—fear of failure, media attention, and social status of entrepreneurs—with economic freedom configuring Models 3, 4, and 5, respectively. Overall, we propose the following model:

Individual level:

$$\text{Logit}(\lambda ij) = \log(\lambda ij/\lambda ij - 1) = \beta 0j + \beta pj \{\text{Individual Level Predictor}\} + \beta cj \{\text{Individual Level Control}\} + rij \quad (1)$$

Country level:

$$\beta 0j = \Upsilon 00 + \Upsilon 01 \{\text{country Level Control}\} + \mu 0j \quad (2)$$

$$\beta cj = \Upsilon p0 + \Upsilon p1 \{\text{country Level predictors}\} + \Upsilon p2 \{\text{country Level Control}\} + \mu 0j \quad (3)$$

In this model, λij is a measure of the decision to engage in intrapreneurship, chosen by individual i in country j. Then, β_{0j} is the coefficient for the effect of each individual hierarchically nested in a specific country on intrapreneurship, β_{pj} and β_{cj} are the coefficients for the individual-level variables in Model 1. The term Υ_{00} is the mean of all intercepts across countries, and Υ_{p0} is the mean of all slopes across individuals. Υ_{01} is the coefficient for the country-level variables in Model 2; similarly, Υ_{p1} and Υ_{p2} are coefficients for the cross-level variables in Models 3, 4, 5, 9, 10, and 11.

3.4 Results

3.4.1 Descriptive statistics

Tables 3.2 and 3.3 provide a list of the developed and developing countries included in the study and show the average values of the main variables for each country. Table 3.2 displays the results of the sample of developed countries; 16.8 percent of the respondents reported they had been involved in intrapreneurship in the last three years. The average individual age of participants is 44.1, and 44.6 percent reported being aware of failure when starting a new business. As a proxy for the cultural engagement of entrepreneurship, 64.8 percent of individuals in the sample consider entrepreneurs to have a high level of status and respect. Regarding media coverage of entrepreneurs, 55.6 percent of individuals consider there to be appropriate media attention to entrepreneurial activities. The average GDP per capita in the sample of developed countries is USD 38,981. The average economic freedom score was 70.2, ranging from 56.1 (Greece) to 81.4 (Switzerland). This average score, which lies between 70 to 79, qualifies these countries as mostly free.

Table 3.2 Main Variables Developed Countries

Country	Intrapreneurship %	Fear of failure %	Media attention %	Social status %	Age	Gender % male	Higher Education %	Economic Freedom Score	Gross Domestic Product Mill USD	Gross Domestic Product per capita USD
Croatia	32.6	45.7	49.2	44.8	42.3	53.6	33.8	60.71	91.3	21,701.6
Slovenia	29.5	38.7	70.9	75.7	46.4	54.3	41.5	62.98	64.8	31,425.0
Germany	27.1	41.7	50.1	79.9	43.0	53.1	56.7	73.82	3,749.3	45,716.9
Austria	26.4	41.5	67.3	77.5	41.9	50.0	19.9	72.29	408.5	47,225.1
Luxembourg	25.4	49.1	49.3	70.4	43.0	47.5	50.1	75.04	54.1	95,221.2
Netherlands	24.8	32.1	63.1	68.6	48.6	49.3	39.7	75.47	827.6	48,785.8
Ireland	22.9	39.5	64.5	71.9	40.9	49.0	66.4	77.96	257.8	55,158.8
Romania	22.6	47.2	68.7	74.7	41.6	51.9	37.0	66.05	279.2	13,102.0
Finland	22.4	39.7	68.9	84.0	42.1	49.8	33.1	73.14	204.2	37,458.4
Australia	22.3	40.6	72.9	69.9	46.9	50.9	61.1	81.15	1,087.9	45,915.9
Canada	21.2	45.1	75.3	76.6	46.8	49.5	73.6	78.30	1,678.8	46,485.7
Sweden	20.9	38.4	67.7	72.5	48.9	49.7	48.1	74.23	473.3	47,701.2
United States	20.2	36.6	74.8	77.1	44.7	49.5	74.2	75.90	17,888.3	55,733.0
Estonia	19.8	44.4	51.5	64.6	45.3	48.3	40.3	77.22	32.9	25,090.8
Slovakia	18.7	44.4	55.9	60.3	41.2	50.5	28.6	66.15	159.9	29,462.5
Cyprus	18.0	53.4	51.9	68.1	40.4	49.5	63.5	68.52	30.2	35,109.6
Hungary	18.0	46.8	36.1	70.7	41.7	50.6	39.3	66.60	213.4	21,553.5
Latvia	18.0	41.8	59.7	59.8	46.2	46.2	41.1	71.43	49.5	25,014.3
Switzerland	17.9	35.7	59.9	69.9	49.1	48.5	38.7	81.40	461.9	56,116.9
France	16.9	36.6	46.7	70.8	49.0	47.8	64.9	63.24	2,553.7	39,852.6
United Kingdom	16.4	37.2	59.7	77.0	46.9	48.1	51.0	76.80	2,620.4	40,371.9
Italy	15.5	48.1	50.5	62.5	44.1	49.0	18.8	62.12	2,126.0	35,177.3
Portugal	14.8	46.7	70.5	64.9	41.3	48.5	32.8	64.79	271.3	25,965.3
Poland	11.9	50.5	45.6	67.7	41.7	49.6	43.5	68.40	1,060.2	27,873.4
Greece	9.2	64.9	45.8	65.2	39.7	50.1	43.0	56.12	259.3	23,579.6
Japan	7.7	43.8	58.6	53.9	44.2	49.8	59.0	71.59	5,032.8	39,619.9
Spain	7.4	49.0	49.3	52.3	42.9	50.1	34.7	66.38	1,616.5	34,847.5
Bosnia and Herze	5.6	39.0	26.6	64.3	41.5	46.2	17.6	60.22	40.5	10,491.8
Bulgaria	4.9	47.1	45.5	68.9	41.8	41.8	22.4	67.20	128.6	17,944.9
Total	16.8	44.6	55.6	64.8	44.1	50.1	43.3	70.2	1,827.0	38,981.8

Table 3.3 shows the data for the main variables in developing countries. As expected, we found a lower average (10.5 percent) of employees engaged in intrapreneurship compared with developed countries. In terms of age, the intrapreneurs are 38.8 years, on average. The average fear of failure is 38.8 percent; this result is lower than the average in the sample from developed countries. In developing countries, 71.21 percent of individuals consider entrepreneurs to have a high social status. The average GDP per capita in the sample of

developing countries is USD 24,432. Finally, the economic freedom score ranges from 46.64 in Iran to 88.5 in Hong Kong. The average for economic freedom is 63.8, categorizing this group of countries as moderately free. This sample includes 10 developing countries with a score below 60, which can be categorized as mostly unfree (Miller and Kim, 2016).

Table 3.3 Main Variables Developing Countries

Country	Intrapreneurship %	Fear of failure %	Media attention %	Social status %	Age	Gender % male	Higher Education %	Economic Freedom Score	Gross Domestic Product Mill USD	Gross Domestic Product per capita USD
Israel	19.5	54.9	55.2	84.9	39.0	49.1	64	71.6	295.1	35,003.4
Uruguay	16.6	36.7	60.4	57.3	45.9	54.5	25	69.0	68.2	19,874.9
Qatar	16.4	35.5	72.2	83.0	34.7	39.5	70	72.0	300.1	124,980.7
Turkey	16.3	34.2	54.2	68.9	36.7	52.0	30	55.0	754.5	11,877.7
Lebanon	15.1	40.8	.	.	37.9	48.7	35	53.2	84.1	18,382.2
Chile	14.7	38.9	63.5	66.5	43.7	49.5	50	76.8	416.4	23,040.5
Taiwan	14.1	40.9	81.7	63.9	41.5	50.0	63	75.9	1,088.0	46,319.6
United Arab Emir	13.6	45.5	80.2	82.1	33.4	66.1	79	77.0	674.8	68,042.4
Thailand	13.0	55.4	79.3	73.2	40.1	48.2	41	64.3	902.3	13,245.1
Hong Kong	12.4	36.3	71.0	64.8	43.1	53.6	47	88.5	397.5	54,722.1
Colombia	12.1	34.1	62.6	69.5	38.1	48.1	45	70.0	618.3	12,852.7
Macedonia	11.8	46.1	57.9	68.0	40.5	49.3	34	71.1	31.0	14,914.2
Peru	11.5	30.7	74.0	69.0	36.6	50.4	26	68.0	367.5	11,751.9
Guatemala	11.2	36.9	57.0	75.3	34.2	47.4	8	63.2	135.4	8,061.0
Kazakhstan	11.1	24.7	70.7	82.6	37.6	48.0	58	65.8	366.9	20,821.3
Jordan	10.7	62.3	69.7	84.9	39.3	50.0	31	66.5	89.1	12,494.3
Brazil	9.4	43.4	73.6	76.0	38.3	48.7	11	55.1	2,765.4	13,670.2
Saudi Arabia	9.4	43.9	75.6	80.2	36.2	55.7	57	61.7	1,766.1	54,874.0
Egypt	9.3	36.8	67.2	82.1	35.0	53.8	52	53.9	1,034.2	11,357.0
Iran	8.9	40.6	57.5	82.6	35.8	51.6	52	46.6	1,332.3	16,746.9
Morocco	8.3	48.8	57.4	68.2	35.4	49.7	53	62.4	292.7	8,509.2
Argentina	8.3	33.3	57.0	50.5	43.0	47.6	45	46.6	850.6	20,171.2
South Korea	7.7	28.4	65.8	69.9	41.7	48.5	60	72.9	1,898.9	37,250.3
China	7.5	37.5	75.2	77.2	42.5	50.5	35	55.1	17,927.9	13,044.9
Mexico	7.2	33.8	49.8	54.7	36.8	46.5	10	65.1	2,130.7	17,515.1
India	5.8	40.6	57.5	65.7	35.7	51.6	30	54.9	7,705.5	5,964.0
Indonesia	4.8	43.6	82.4	80.0	36.1	50.3	14	60.6	2,135.9	8,406.4
Ecuador	4.8	34.1	73.3	65.2	39.2	49.5	22	48.4	173.6	10,822.2
Panama	4.7	25.6	56.7	62.6	38.0	49.8	18	65.7	83.7	21,083.4
Malaysia	3.9	36.3	68.1	55.0	37.5	51.0	38	71.4	647.2	21,431.9
Russia	3.8	41.8	53.7	68.5	40.8	47.0	74	56.1	3,619.8	25,221.7
South Africa	3.4	34.2	72.9	75.5	40.0	49.2	17	61.5	669.8	12,422.7
Total	10.5	38.8	66.1	71.2	38.8	51.2	40.0	63.8	2,181.5	24,432.5

Tables 3.4 and 3.5 show the correlation among the variables of this study. There is a statistically significant correlation among the level 1 independent variables, but they are not highly correlated at critical values (correlations>0.8) to show misspecification (Midi et al., 2010). Therefore, the model might not present significant evidence of multicollinearity.

Table 3.4 Correlations. Developed countries

	Mean	Std. Dev.	Intrapreneurship	Fear of Failure	Media Attention	Social status	Age	Gender (% male)	Higher Education	Economic Freedom Score	GDP	GDP per capita
Intrapreneurship	16.8	37.4	1									
Fear of Failure	44.6	52.7	-0.044***	1								
Media Attention	55.6	49.6	0.033***	-0.02***	1							
Social status	64.8	47.6	0.024***	0.024***	0.183***	1						
Age	44.14	14.6	-0.024***	-0.069***	0.050***	-0.013***	1					
Gender (% male)	49.6	50.0	-0.058***	0.068***	0.011***	0.009***	0.025***	1				
Higher Education	43.3	49.8	0.126***	-0.019***	0.031***	0.036***	-0.017***	0.038***	1			
Economic Freedom Score	70.22	5.9	0.081***	-0.078***	0.110***	0.130***	0.103***	-0.022***	0.156***	1		
GDP	1,826	3,147	0.0029	-0.027***	0.056***	0.048***	0.013***	0.010***	0.134***	0.203***	1	
GDP per capita	38,981	13734	0.071***	-0.033***	0.073***	0.086***	0.078***	0.120***	0.123***	0.595***	0.238	1

***p< 0.0001, ** p< 0.05, * p< 0.01. All tests of significances two-tailed.

Table 3.5 Correlations. Developing countries.

	Mean	Std. Dev.	Intrapreneurship	Fear of Failure	MediaAttention	Social status	Age	Gender (% male)	Higher Education	Economic Freedom Score	GDP	GDP per capita
Intrapreneurship	10.5	30.7	1									
Fear of Failure	38.7	50.7	-0.013***	1								
Media Attention	63.1	47.3	0.015***	0.052***	1							
Social status	71.2	45.2	0.009***	0.082***	0.228***	1						
Age	38.8	13.9	-0.006***	0.0024	0.008***	-0.009***	1					
Gender (% male)	51.2	50.0	-0.017***	0.067***	0.025***	0.036***	-0.003***	1				
Higher Education	40.8	48.9	0.119***	-0.0007	0.0036	0.005***	-0.084***	0.030***	1			
Economic Freedom Score	63.8	9.5	0.082***	-0.0021	0.028***	-0.022***	0.076***	0.074***	0.126***	1		
GDP	2,181.2	4,093.9	-0.044***	0.011***	0.036***	0.028***	0.032***	0.013***	-0.048***	-0.318***	1	
GDP per capita	24,431.2	24,679.8	0.064***	0.003***	0.049***	0.059***	-0.036***	0.055***	0.237***	0.399***	-0.172***	1

***p< 0.0001, ** p< 0.05, * p< 0.01. All tests of significances two-tailed.

3.4.2 Model estimation

Table 3.6 describes our multilevel models of employees' probability of engaging in intrapreneurship in developed and developing countries. The results are reported with estimates for fixed individual-level (estimated coefficients) and the random economic freedom part (average coefficient across countries). Given that economic freedom and GDP per capita are significantly and substantially correlated (0.595 in Table 4 for developed countries and 0.399 in Table 5 for developing countries), we include quadratic effects for potentially correlated terms—economic freedom and GDP per capita (Ganzach, 1998).

The multilevel logistic regression model indicates with an empty model (without any variables) that the intra-class correlation coefficient (ICC) shows significant country-level differences in individual level variables (Sommet and Morselli, 2017). The ICC collects the proportion of country-wise variability of the odds of an employee becoming an intrapreneur. Our outcome is that 7.78 percent of the odds of an employee becoming an intrapreneur is explained by the differences between developed countries. In developing countries, the ICC coefficient is 9.22 percent. In other words, a significant proportion of whether an employee

decides to engage in intrapreneurship is explained by country-level factors. The LR test of ICC coefficients equal to zero rejects the null hypothesis that the variance is not significantly different from zero. These conclusions provide robustness and support for the selection of multilevel techniques over a simple logistic regression**.**

We observe, as expected, in Models 2 and 6 in Table 3.6, that the measurements of our informal factors influence the odds ratios (OR) of individual-level participation of employees in intrapreneurship. Effectively, Models 2 and 6 show that individuals' fear of failure suppresses their probability of entering into intrapreneurship differently in both economic contexts studied, in developed countries, 17 percent (exp [−0.187] = OR = 1–0.82, $p < 0.05$), and in developing countries, 11 percent (exp [−0.104] = OR = 1–0.9, $p < 0.05$. Hence, Hypothesis 1 cannot be rejected. By increasing, in one standard unit, the perception of an individual when considering media attention of entrepreneurs, in developed countries their likelihood of becoming an intrapreneur increases by 9 percent (exp [0.093] = OR = 1.09, $p < 0.05$, $p < 0.1$); in developing countries, their likelihood increases by 16.2 percent (exp [0.152] = OR = 1.162, $p < 0.05$, $p < 0.1$). Therefore, Hypothesis 2 cannot be rejected. Additionally, in developed countries, the relationship between the social status of entrepreneurs and intrapreneurship is negative, but in developing countries this relationship is not significant, so Hypothesis 3 is rejected.

Table 3.6. Model estimations

		Developed countries					Developing countries				
		Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**	**Model 10**
Individual Level		Coeff	Coeff	Coeff	Coeff	Coeff	Coeff	Coeff	Coeff	Coeff	Coeff
Fear of failure	**H1**	-0.187***(0.016)	-0.188***(0.016)	-0.421***(.128)	-0.188***(0.016)	-0.188***(0.016)	-.0104***(.015)	-0.104***(0.015)	0.326 (0.163)	-0.104***(0.0157)	--0.104***(0.015)
Media attention	**H2**	0.092***(0.016)	.093***(0.016)	0.094***(.011)	-0.134 (0.109)	0.093***(0.016	0.152***(.017)	0.151***(0.023)	0.152***(0.023)	0.4586 ***(0.170)	0.152***(0.023)
Social Status	**H3**	-0.040***(0.017)	-.450***(0.017)	-0.038***(.012)	-.038***(0.012)	-0.450***(0.176)	0.029 (.018)	0.030(0.024)	0.029 (0.024)	0.029 (0.024)	-0.1347 (0.17)
Age		-0.003***(0.006)	-.004***(0.006)	-0.004***(0.009)	-.004***(0.006)	-0.004***(0.006)	-.0019***(0.00)	-0.002**(0.000)	-.0019***(0.00)	-.0019***(0.00)	-.0019***(0.00)
Gender		0.516***(0.000)	0.516***(0.000)	0.5170***(0.000)	0.516***(0.000)	0.516***(0.000)	0.306***(0.022)	0.307***(0.023)	0.307***(0.022)	0.307***(0.023)	0.307***(0.022)
Education		0.703***(0.005)	0.703***(0.005)	0.739***(0.012)	0.739***(0.005)	0.738***(0.005)	0.146***(0.00)	0.623***(0.026)	0.705***(0.07)	0.705***(0.017)	0.704***(0.00)
Country level											
Economic freedom (EFI)	**H4**		0.224 ***(0.107)	0.221***(.060)	0.226***(0.060)	0.224*** (0.000)		-0.287***(0.41)	0.28***(0.025)	-0.285***(0.045)	-0.288***(0.00)
GDP percapita			-0.00(0.00)	-0.00 (0.00)	-0.00(0.00)	-0.00(0.00)		0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)
GDP			-0.00*** (0.00)	0.00*** (0.00)	0.00 ***(0.00)	0.00*** (0.00)		0.00***(0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)
EFI^2			-0.00*** (0.00)	0.00*** (0.00)	0.00 ***(0.00)	0.00*** (0.00)		0.00***(0.00)	0.00*** (0.00)	0.00 ***(0.00)	0.00 ***(0.00)
$GDPpercapita^2$			-0.00*** (0.00)	0.00*** (0.00)	0.00 ***(0.00)	0.00*** (0.00)		0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)
EFI^2 $GDPpercapita^2$			-0.00 ***(0.00)	0.00*** (0.00)	0.00 ***(0.00)	0.00*** (0.00)		0.00 ***(0.00)	0.00*** (0.00)	0.000***(0.00)	0.000***(0.00)
Moderation effects											
Fear of failure x EFI	**H5a**			**0.003*(0.06)**					**-0.006 ***(0.00)**		
Media Attention x EFI	**H5b**				**0.0032***(0.00)**					**-0.0045***(0.00)**	
Social Status x EFI	**H5c**					**0.0058***(0.00)**					0.002 (0.003)
Random Part estimates											
Number of observations		237,053	237,053	237,053	237,053	237,053	177,201	177,201	177,201	177,201	177,201
Number of groups (countries)		29	29	29	29	29	31	31	31	31	31
Fixed Intercep		-8.960	-8.860	-8.989	-8.999	-8.860	5.228**	5.376***	5.048***	5.052***	5.3203***
Variance of random intercept		0.277	0.260	0.418	0.262	.2605	0.42	0.361	0.361	0.360	0.361
ICC		0.077	0.073	0.073	0.073	0.073	0.099	0.099	0.099	0.098	0.098
Model Fits statistic											
Log-likehood[a]		-101,640.62	-101,604.7	-101,507.42	-101,507.43	-101,604.7	-57,439.047	-57,439.047	-57,431.59	-57431.59	-57438.215
Prob . x2		***	***	***	***	***	***	***	***	***	***
LR[b] Test of p=0		***	***	***	***	***	***	***	***	***	***

Notes: Standard errors are in parentheses. Bold values indicate variables testing the hypotheses. ***p< 0.0001, ** p< 0.05, * p< 0.1. All tests of significances two-tailed. [a] Statistically significant (p < 0.001). Likelihood ratio test of rho = 0 confirms that the country-level variance component is important. [b] LR test performed against previous model suggests improvement in model fit.

Our results also show that economic freedom influences the probability of participation in intrapreneurship in developed countries: their likelihood increases by 25.1 percent (exp [0.224] = OR = 1.251, $p < 0.05$, $p < 0.1$); however, the influence of economic freedom in developing countries is negative. Hypothesis 4 is thus partially accepted.

To investigate Hypotheses 5a, 5b, and 5c, we introduce cross-level moderation effects between economic freedom and fear of failure, media attention, and the social status of entrepreneurs (Models 3, 4, 5, 8, 9, and 10 in Table 3.6). The moderators were introduced sequentially to avoid problems of multicollinearity. The evidence suggests that the negative influence of fear of failure on intrapreneurship is attenuated with the presence of economic freedom in developed countries. In contrast, in developing countries with lower economic freedom, the negative relationship between fear of failure and intrapreneurship is enhanced. Therefore, Hypothesis 5a is partially accepted.

In Model 4, we find a positive effect of media attention on intrapreneurship that is enhanced with the presence of more economic freedom in developed countries (1.0032, $p < 0.05$). Conversely, in Model 8, in developing countries, the likelihood of becoming an intrapreneur when media attention is moderated by less economic freedom decreases (0.0045, $p < 0.05$). Hence, Hypothesis 5b cannot be rejected. Finally, in developed countries, economic freedom increases the likelihood of the relationship between social status and intrapreneurship (1.0058, $p < 0.05$). Consequently, Hypothesis 5c is partially accepted, because in developing countries economic freedom does not have any effect in that relationship.

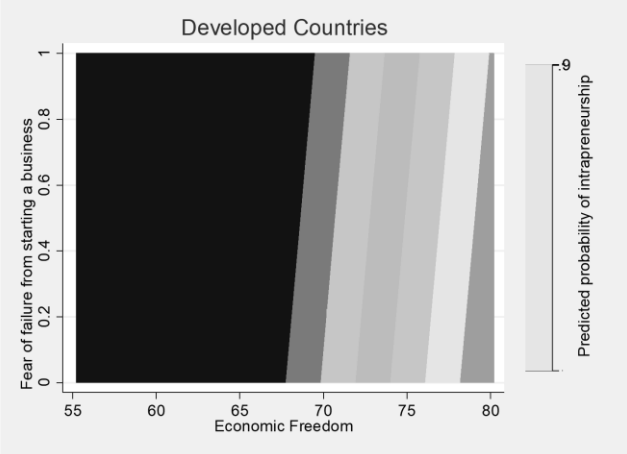
To gain a better understanding of the impact and relevance of the significant moderating effects, we plot the corresponding graphs (Figure 3.2) (Guerrero et al., 2021). As shown in Graph A, developed countries with higher values of economic freedom (70–79 economic freedom score) where individuals fear failure if they pursue intrapreneurship have about a 60–90 percent probability of engaging in intrapreneurship activities. In comparison, developing countries with lower values of economic freedom (60–65 score) and the presence of fear of failure have a 10–20 percent probability of intrapreneurship (Graph B). The negative direct effect of fear of failure on intrapreneurship in developing countries increases when the lower economic freedom scores moderate this relationship.

As shown in Graph C, developed countries with higher values of economic freedom (70–79 economic freedom score) where media pays attention to successful new businesses have a 20–30 percent probability of engaging in intrapreneurship activities. In comparison, developed countries with lower values of economic freedom (60–65 score) have a 10–20 percent probability of intrapreneurship. Graph D illustrates the moderating effect of economic freedom on the relation between media attention and intrapreneurship in the case of developing countries. Countries with an economic freedom score above 62.5 have a 6–12 percent probability of intrapreneurship. On the contrary, in countries with economic freedom scores below 60, this probability is reduced to 4–8 percent.

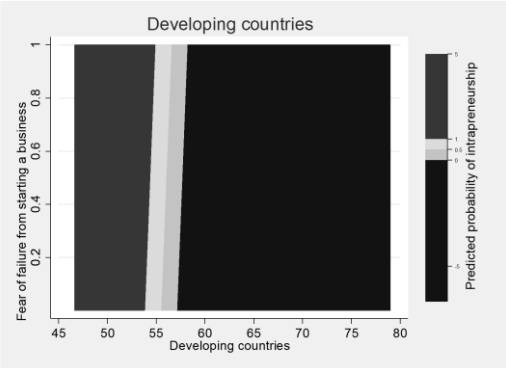
Graph E illustrates the moderating effect of economic freedom on the relation between social status and intrapreneurship in developed countries. Higher values of economic freedom (above 72.5) in countries where entrepreneurial activities are perceived to be socially prestigious have a 30–40 percent chance of engaging in intrapreneurship activities. However, in countries with lower values of economic freedom (below 62.5), the probability is reduced to 10–20 percent. Thus, in developed countries with high values of economic freedom, in which entrepreneurs have a high social status, the chance of intrapreneurship is higher. The negative direct effect of social status on intrapreneurship in developed countries might be attenuated when formal institutions moderate this relationship.

Figure 3.2. Moderating effects

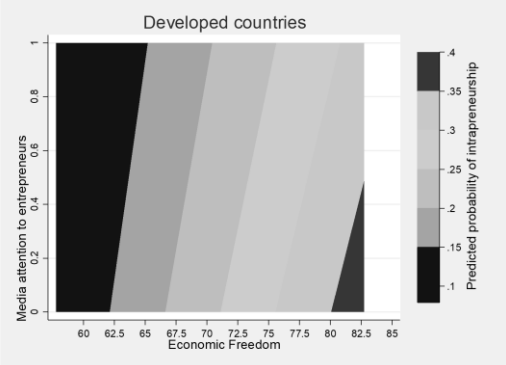
Graph A. Fear of failure, economic freedom scores and intrapreneurship probability in developed countries



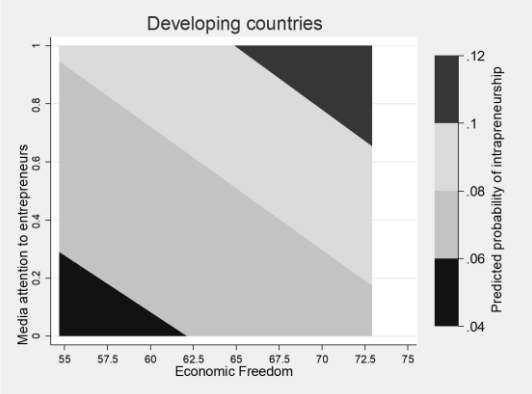
Graph B. Fear of failure, economic freedom scores and intrapreneurship probability in developing countries



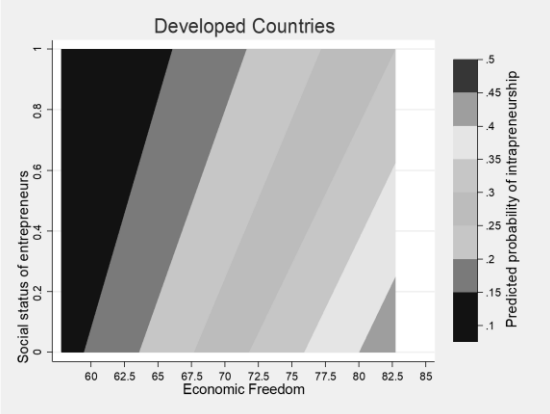
Graph C. Media attention, economic freedom scores and intrapreneurship probability in developed countries



Graph D. Media attention, economic freedom scores and intrapreneurship probability in developing countries



Graph E. Social status, economic freedom scores and intrapreneurship probability in developed countries



Robustness Checks. The multilevel logistic modeling is an appropriate estimator because of the significant between-country differences, ICC 7.7 percent in developed countries and ICC 9.9 percent in developing countries. We repeat our estimations using the logistic regression method with country variables as controls. The results of our hypotheses are consistent with the main analysis, suggesting that our findings are robust across estimation methods.

The first level variables of this research are measured using the same APS; therefore, there exists a potential for common method bias. Aiming to test this potential problem, we conduct a Harman's one-factor test (Podsakoff and Organ, 1986). The outcome of the test yielded four factors, and the covariance explained by the first factor was 23.3 percent. Thus, if the total variance for a single factor is less than 50 percent, it suggests that common method bias does not affect data. The test results in our research suggest that common method bias might not be a major issue.

Larger samples offer greater opportunities for researchers, but researchers may also face potential problems in interpreting statistical significance (Lin et al., 2013). We therefore conduct our estimations with smaller sample sizes. We estimate our multilevel logistic regressions using the data from 2016, 2017, and 2018 separately to avoid a misinterpretation of results due to the large size of our main dataset. As a result, we find no major issues and differences regarding our *p*-values and hypotheses, confirming the accurateness of our main results.

As previously mentioned, extant research has shown organizational factors influencing intrapreneurship (Ireland et al., 2009; Wiklund and Shepherd 2003; Yeganegi et al., 2019; Zahra, 1991). Although we estimated our model focusing on environmental factors, it is imperative to control for organizational factors. Unfortunately, GEM data offer some limitations for gaining more information about intrapreneurs, especially related to organizational factors. Nevertheless, it is important to increase robustness of our results by understanding the influence of such elements. We select the GEM variable "technology level of the sector" for the established business as a proxy for organizational factors. Fast changes and developments are characteristics of innovative industries, making it imperative for firms to continuously react to such changes and developments through entrepreneurial activities to ensure success. (Bierwerth et al., 2015; Zahra, 1996). However, estimating our multilevel logistic model with "technology level of the sector," the number of observations decreases substantially, leading to a low accuracy of our multilevel model. We solve this problem using logistic regression, keeping our individual-level variables and including the mentioned variable into the model. As a result, we find consistent results with our main model.

Finally, we include a second institutional moderating factor to compare the results obtained with the moderation of economic freedom. The National Expert Survey from GEM employs standardized questions and validated measurement scales to assess experts' views of their institutional environment (Reynolds et al., 2005). Following previous research, we select the variable "government policies" as a frequently used variable to assess formal institutions (Hechavarria and Ingram, 2019; Levie and Autio, 2008). We apply the same multilevel model and obtained similar results for the effect of informal institutions on intrapreneurship in both contexts. Regarding the moderation of "government policies," we find similar differential effects in both contexts, thus validating hypotheses 5a, 5b, and 5c. All the results of these robustness tests are available upon request.

3.5 Discussion

The existing literature on institutional economics recognizes that formal and informal institutions facilitate or hinder entrepreneurial activities within countries and regions (North,

1991; Scott, 1995; Urbano et al., 2019). From this view, our research contributes to the literature on the antecedents of intrapreneurship. In particular, this study emphasizes the effect of the environment, which has been recognized to be relevant mostly in theoretical and non-quantitative research (Ireland et al., 2009) and contributes to the comparative international literature showing the extent to which institutional factors condition entrepreneurial activity (Bruton et al., 2010) in the context of developed and developing countries. We use a multilevel analysis that may provide a more comprehensive analysis than single-level designs. This study therefore contributes to the call for more cross-country research that considers the interaction effect of both formal and informal institutional conditions, especially in the context of developing countries (Terjesen et al., 2016).

The results confirm that institutions have a direct and moderating role as predictors of intrapreneurship in developed and developing countries. These findings are consistent with institutional theory, which emphasizes that formal and informal institutions can substitute for each other (North, 1991) or be complementary (Williamson and Mathers, 2011). Our estimations suggest that economic freedom (a measure of formal institutions) has a direct influence on intrapreneurship, and it may complement informal institutions to increase (or decrease) intrapreneurship engagement in developing and developed countries. Companies in developed countries have enough resources and capabilities to allow them to overcome the constraints of an unfavorable formal institutional environment. This finding is in line with the literature on independent entrepreneurship, where it has been argued that formal institutions have a key role for the creation of new businesses (Boudreaux et al., 2019). In addition, it is in line with previous research suggesting that the role of the institutional environment for corporate entrepreneurship activities differs depending on the level of economic development (Hughes and Mustafa, 2017). Overall, developing countries are characterized by underdeveloped formal institutions. These societies are often characterized by strong informal institutions that coexisting alongside formal institutions, fostering rule-violating entrepreneurial behavior (including employees) as entrepreneurs draw on familiar routines and rules to guide their behavior (Welter and Smalbone, 2011).

Our results support the argument that considering the probability of failure decreases the probability of becoming an entrepreneur at the individual level (Arenius and Minniti, 2005; Turro et al., 2016). We found evidence that, in developing and developed economies,

perception of failure is a significant element. The fear of failure has a bigger impact in the developed world than in developing countries. Less fear of failure increases the probability of intrapreneurship by 17 percent and 11 percent, respectively. In developing countries, fear of failure in individuals might be lower, and it has less impact on intrapreneurship than in the developed world (Ács et al., 2015). Overall, the risks that intrapreneurs face tend to be considered less than the risks faced by independent entrepreneurs; however, our results show that the perceived fear of failure also reduces the likelihood of engaging in intrapreneurship (Martiarena et al., 2013). Our results also show that economic freedom moderates the likelihood that individuals become intrapreneurs when they fear failure. Higher levels of economic freedom in developed countries reduce the negative effect fear of failure has on intrapreneurship, while lower levels of economic freedom in developing countries increase the negative effect of fear of failure.

Our results also indicate that media attention is relevant when explaining the likelihood of engaging in intrapreneurship. Accordingly, living in a developed country where stories of successful entrepreneurship are part of the culture and frequently reported by the media increases the likelihood of intrapreneurial behavior (Dheer, 2017). Hence, companies should emphasize their stories about previous successful entrepreneurial initiatives since this could have an impact on the entrepreneurial behaviors of their employees (Lounsbury and Glynn, 2001; Turro et al., 2014). Our results are coherent in the context of developing countries, where individuals engaged in entrepreneurial activities focus on their own behavior, including reducing impulses, planning, taking action, and looking for solutions in a creative way while relying more on their own perceptions (Eijdenberg et al., 2019) than on the limited information received from media.

From an independent entrepreneurship perspective, scholars have widely demonstrated the importance of the social status of entrepreneurs as a role model to individuals who are considering engaging in entrepreneurial activities (Carsrud and Brännback, 2011; Kalden et al., 2017). This view partially contrasts with our evidence, in which social status has no influence on the probability of intrapreneurship activity in developing countries, but it has a significant and negative effect in developed countries. In the case of some developing countries, especially the least free countries, entrepreneurship is constrained and related to corruption (Lecuna and Chávez, 2018). Another factor could be that entrepreneurial

employee activity is not promoted efficiently through business cases or is associated with the company's success rather than the individual's. Finally, the significant negative relation in developed countries supports the individualistic behavior of employees. The status of successful entrepreneurs encourages those employees who find a business opportunity to exploit it independently without the firm (Fisher et al., 2017).

This research has some policy implications. Our results evidence a direct influence of formal institutions on intrapreneurship. Nevertheless, in the case of developing countries, the interplay of formal and informal institutions is not completely significant, because this result implies that intrapreneurship policy should be adapted to the individual perception of the informal environment, and the regional characteristics to obtain the desired results. Hence, prioritizing the enhancement of formal institutions without an understanding of informal institutions might result in limited realization of the benefits to be gained from formal institutional reforms (Webb et al., 2020). In this regard, intrapreneurship as a regional phenomenon needs to be appropriately addressed for better performance. National governments should work with regional and local governments to convey public policy actions consistent with local characteristics (Dai and Si, 2018). Because intrapreneurship in firms is highly valuable as a source of innovation in modern economies, public policy making may prove effective if one considers a multilevel approach for its construction (Elert and Stenkula, 2020). Firm and public policy should convey effective intrapreneurship by developing mechanisms that enable funding for firms or enhance collaboration among firms to share the risk of failure in innovative projects. Moreover, many developing regions and countries, especially those with higher economic freedom, are positioning entrepreneurship in the public agenda. The promotion of intrapreneurs requires the construction of effective stories about their innovative ideas or inventions, not only to gain recognition, but also to increase resources from social connections resulting from media exposure. Additionally, it is important to reward and publicly recognize the work done by employees to create role models that might encourage entrepreneurship within firms (Morris et al., 1993).

To promote entrepreneurship in established firms, it is also necessary to create mechanisms to increase a culture of tolerating failure. For example, firms and policy makers should encourage entrepreneurship education and training for employees to understand the effectual dynamics of entrepreneurship. Previous research has shown how receiving specific training

in entrepreneurship can lower the perceived risk associated with an entrepreneurial venture (Gordon et al., 2012). Relatedly, firms should contemplate the option of abandoning under-performing projects without any admonition to employees. The choice between giving the entrepreneur a second chance and cancelling the project should not be linked to the overall performance of the employee.

Creative employees with entrepreneurship capabilities must be able to obtain support and resources within a firm to bring their efforts to fruition. This could include increasing corporate–start-up collaborations and allowing employees to work part-time at start-ups, to develop their own start-up, or to be exposed to a different industry (Rigtering and Behrens, 2021). Firms in both developed and developing economic contexts are looking for the path of growth, and there is much space to innovate, so skilled employees could perceive opportunities to propose new ideas to develop internally, and public policy should follow this path. With this respect, policymakers and scholars must create new policies conducive to regional systems of innovation and entrepreneurship (Audretsch and Belitski, 2016).

3.6 Conclusion

Using the 2014–2020 GEM data and the economic freedom (formal institution) score of 29 developed countries and 31 developing countries and applying a logistic multilevel regression, this research analyzed the influence of institutional factors on the decision of an employee to become an intrapreneur. The results show that informal institutions (fear of failure and media attention) play a more significant role than the social status of entrepreneurs in increasing the likelihood of firm entrepreneurial activities in both developed and developing countries. In addition, our multilevel model regression provided relevant results about the moderation of economic freedom. They suggest that economic freedom is relevant in affecting intrapreneurship and, more importantly, it may complement informal institutions to increase intrapreneurship engagement. Moreover, the moderation of economic freedom differs depending on the economic development context. As discussed, in developed countries, economic freedom enhances to a greater extent the relationship between social

status of entrepreneurs and intrapreneurship, as well as between media attention and intrapreneurship.

Finally, we recognize some limitations of this study and suggest future research lines. The variable intrapreneurship used in this study is employed in other research and was introduced in the GEM project precisely to gauge entrepreneurial employee activity (Stam, 2013). However, it is necessary to include more accurate proxies for measuring intrapreneurship. The theory suggests a wide definition of intrapreneurship (Antoncic and Hisrich, 2001; Kuratko and Audretsch, 2013) that is only partially collected in the variable used in this study. Similarly, our approach is consistent with previous quantitative research that uses GEM data to study the informal and formal institutional environment (Autio et al., 2013; Boudreaux et al., 2019; De Clercq et al., 2013; Sahasranamam and Nandakumar, 2020; Turro et al., 2014). Our study measures four different key components of the institutional environment (fear of failure, media attention, social status, and economic freedom); however, future research should use other proxies that could capture the broad, complex, and intangible concept more precisely. In addition, we have not tested several other factors that may moderate the effect of institutions on intrapreneurship. Future researchers could thus consider additional factors such as the dynamism of the industry, firm ownership (Zahra, 1996), and the degree of internationalization (Brouthers et al., 2015). Related to this, our research uses data at the individual and environmental levels of analysis. This approach is consistent with previous literature (Garrett and Holland, 2015; Gomez-Haro et al., 2011). However, future research should also consider the organizational level of analysis (which is not included in the GEM datasets) since it obviously plays a relevant role in the development of intrapreneurial initiatives (Antonic and Hisrich, 2001).

Our dependent variable measures if an employee is involved in intrapreneurship or not (including an array of occupational choices). However, the effects of variables may differ when an employee faces the decision to become an intrapreneur or an entrepreneur. Some scholars find that employees with fear of failure tend to be intrapreneurs or entrepreneurs but in different intensities (Martiarena, 2003). Additionally, Nyström (2012) find no significant differences in social status and media attention. Future research should develop more theoretical insights and empirical results to provide more information about the extent to which these factors are influencing employees.

Many studies using the GEM datasets employ binary variables. However, there are concerns related to the use of binary variables instead of continuous measures because of the difficulties in the analysis. Furthermore, scholars are still debating how to calculate the effects on interactions in country- and individual-level variables, or when testing model specification (e.g., collinearity) (Midi, et al., 2010). Further research should address the simplification of the analysis.

Finally, the GEM dataset allows the development of a multivariate choice model which could analyze and compare the role of environmental factors for different individual decisions (i.e., intrapreneurship, independent entrepreneurship, or traditional employee). Hence, future studies could consider the role of contextual factors on the decision to select different occupational choices or to exploit new business opportunities inside (or outside) established companies (Knörr et al., 2013; Martiarena, 2013). The results of such research could provide more valuable and complete policy implications than those provided in our research.

Based on these limitations, the next chapter will introduce an organizational level to the analysis to measure how the institutional environment affects corporate entrepreneurship and performance. Again, the dynamic capabilities of the firm mediate this relationship. For this purpose, we surveyed 326 managers in Colombian firms in 2021.

Chapter 4

Institutions, dynamic capabilities, and corporate entrepreneurship-performance: An analysis in a developing country

4. Institutions, dynamic capabilities, and corporate entrepreneurship-performance: An analysis in a developing country

4.1 Introduction

Whereas the previous chapter focused on an individual-level perspective of entrepreneurship within the firms, specifically, the extent to which institutions influence the entrepreneurial behavior of employees, this chapter explores entrepreneurship and institutions in an organizational-level perspective. In this regard, we have discussed that corporate entrepreneurship plays a relevant role in achieving firm growth and competitiveness in the global markets (Simsek and Heavey, 2011; Zahra et al., 2013). The increasing competition from foreign firms challenges firms in developing countries. These countries are constantly under pressure to deploy entrepreneurial activities in order to sustain and create competitive advantages and to succeed (Shinkle and McCann, 2014). Developing countries differ institutionally from developed countries (Bradley and Klein, 2016; Cardoza et al., 2016). As a result, firms in these countries face institutional weaknesses that undermine the firms' success (Wright et al., 2005). These underdeveloped supporting institutions are evidenced in a constant lack of resources (Guillen and Garcia-Canal, 2011), changes in regulations (Bruton et al., 2010; Hughes and Mustafa, 2017; Sebora and Theerapatvong, 2010; Zahra and Covin, 1995), and unstable market conditions (Acemoglu et al., 2005; Puente et al., 2017; Welter and Smallbone, 2011). These conditions foster a greater need for firms to survive through corporate entrepreneurship (Kuratko, Covin, et al., 2014) to compete in such considerably uncertain environments (De Villiers-Scheepers, 2012). Hence firms have to constantly adjust their organizational routines to maintain a competitive advantage (March, 1991).

The mentioned factors evidence that developing countries should consider the context while examining the relationship between corporate entrepreneurship and performance (Antoncic and Hisrich, 2001; Covin and Slevin, 1991). Researchers have focused on the interaction between the context and the performance of firms comparing the United States and Slovenia (Kearney et al., 2013), between the external and internal influences on the generation of ideas from managers, risk-taking, and proactiveness in Thailand (Sebora and Theerapatvong, 2010), the environment's role of the multidimensional performance of Turkish firms (Ağca

et al., 2012), the capabilities for identification of opportunities in China (An et al., 2018), and moderating effect of environmental dynamism on the relationship between dynamic capabilities and new venture performance (Jiao et al., 2013) in China. However, the literature on corporate entrepreneurship and performance presents some limitations.

First, the construct of corporate entrepreneurship associated with performance relies mainly on short-run objective performance measurements that offer a limited scope of the phenomenon. For example, investments in innovation, venturing, and other corporate entrepreneurship activities might need several years to provide the desired effects (Vanacker et al., 2021). Thus, we need to establish how it relates to the performance of firms over more extended time frames than previously considered (Bierwerth et al., 2015). Therefore, it is necessary to experiment with other measures of performance and provide a broader perspective of the relationship beyond the short-term financial information.

Second, corporate entrepreneurship research has documented the importance of the external environment, but nearly all of these studies have focused on industry conditions (Jiao et al., 2013; Pati et al., 2018; Zahra, 1991, 1993; Zahra and Covin, 1995). A few studies have focused on the country-level effects of formal and informal institutions that shape corporate entrepreneurship and performance relationship. Institutions in a given country affect firms' flexibility, certainty, access to resources, and the ability to manage the different forms of corporate entrepreneurship successfully (Acs and Szerb, 2007; Cumming et al., 2010; Karimi and Walter, 2016; Morris et al., 1994; Mueller and Thomas, 2001; Turro et al., 2014). Thus, they may influence the performance implications of corporate entrepreneurship activities (Holmes et al., 2016; Judge et al., 2015; Vanacker et al., 2021). Consequently, more research is needed to analyze the institutional influence on firms' corporate entrepreneurship when operating in developing countries. Finally, firms in this context are urged to develop capabilities to assess the environment in order to obtain or maintain a competitive advantage.

As well as institutional economics theory, dynamic capabilities may be a valuable approach to link the complexity of environmental change in developing countries. Accordingly, this chapter studies the extent to which firms use their dynamic capabilities to mediate the institutional context and establish successful corporate entrepreneurship activities. For the analysis, we used a partial least squared technique (PLS), data from 326 Colombian firms

operating in the central industrial regions of the country. We gathered these data between 2020 and 2021. The results show the significant mediation effects of dynamic capabilities between institutions and corporate entrepreneurship in a developing country.

The contributions to this chapter are as follows. First, successful corporate entrepreneurship activities imply integrating firm efforts to respond effectively to the institutional environment, this should positively affect business performance (Cumming et al., 2010; Elango and Dhandapani, 2020; Engelen et al., 2014; Luo et al., 2005; Sargent and Matthews, 2006; Urban, 2012). Thus, we argue that the dynamic capabilities contribute to a better understanding of the relationship between the institution and corporate entrepreneurship. In this perspective, the conceptual model examines relevant and less empirically explored links in this field of knowledge, introducing and verifying these mediating variables in the mentioned relationship. The research supports the view that institutions are mediated by a set of capabilities (Lu et al., 2010), which can improve business performance. Second, this study confirms and measures the effects of corporate entrepreneurship, which may differ depending on the institutional context (Zahra et al., 1999). Moreover, this contribution enhances the theory by making it more context-sensitive due to the rich diversity of institutional environments among developing countries (Basco et al., 2020; Welter, 2011). It provides valuable information for managers in international firms interested in expanding their operations in developing countries by using specific information about the relationship between corporate entrepreneurship and performance.

Third, to enhance theory development by providing information about the extent to which firms use their dynamic capabilities to operate in the context of developing countries. As mentioned before, developing countries experience substantial and complex variations in their institutions (Teece and Leih, 2016). Therefore, this study assesses the extent to which both formal and informal institutions affect the corporate entrepreneurship strategy. Managers evaluate this assessment and foster the specific capabilities needed to endeavor in this context (An et al., 2018). The institutional environment should be understood to combine, develop, and deploy new routines to enhance long-run performance of firms. Indeed, understanding this configuration may lead to new business policies to promote certain activities to enhance innovation in countries.

This chapter is organized as follows: The first section reviews previous studies examining corporate entrepreneurship and performance, focusing on developing countries. Next, we discuss the hypotheses and the theoretical frameworks underlying our proposed model. Then, we describe the research methodology employed and present the results of the data analysis. This is followed by a presentation of a discussion of the results. Finally, we conclude with our discussion limitations, and recommendations for future research and practice.

4.2 Conceptual framework

4.2.1 Corporate entrepreneurship and performance

As depicted in Chapter 1, a manifestation of entrepreneurship within firms is corporate entrepreneurship. Corporate entrepreneurship refers to the venturing activities initiated and promoted by the firm's top management (Pinchot, 1985; Stam, 2013). These venturing activities are conformed by strategic entrepreneurship and new business or corporate venturing (Kuratko and Audretsch, 2013).

Firms engaged in corporate entrepreneurship are motivated by financial and/or strategic reasons (Phan et al., 2009). The literature distinguishes the different motivations behind the firm's entrepreneurship activities when considering its performance outcomes. One stream of the literature examines the impact of corporate entrepreneurship on objective performance, including financial performance, return on sales (ROS), return on assets (ROA) (Vanacker et al., 2021; Zahra, 1991), and financial growth such as sales growth and growth in profits (Zahra, 1993; Kreiser, Kuratko, Covin, Ireland, and Hornsby, 2021). Other studies focus on subjective performance, including perceived non-financial performance, such as customer satisfaction. competitive position in the industry, among others (Ağca et al., 2012; Bierwerth et al., 2015). Recent research evidenced that corporate entrepreneurship activities do not always aim at improving firms' objective performance; therefore, they are not solely financially motivated. Accordingly, subjective performance may be more relevant because it captures broader aspects of performance beyond the primarily financial data captured by objective performance. They include the internal elements of the business process and the

unintended spillovers resulting from corporate entrepreneurship actions (Bierwerth et al., 2015). Others argue that subjective performance may be a long-term measure of performance because of the nature of corporate entrepreneurship activities that may need more time to produce effects (Kreiser et al., 2021; Vanacker et al., 2021). Researchers in developing countries have also used this approach to measure the corporate entrepreneurship–performance relationship (Alpkan et al., 2010; Yunis et al., 2018; Zhai et al., 2018).

Because of these arguments, we posit the following hypothesis.

> *Hypothesis 1: Corporate entrepreneurship is positively associated with the subjective performance of firms in developing countries.*

4.2.2 Institutions and corporate entrepreneurship – performance

This chapter is grounded in institutional economics. As described in Chapter 1, this attainment is relevant because the (social) behavior of individuals in coalitions could be heavily dependent on informal institutions like cultural values (Keller and Loewenstein, 2010), as employees bring their cultural-value orientations to the workplace (Lachman et al., 1994; Schneider and Engelen, 2015). Additionally, institutions are also forces that drive firms to comply with norms (formal institutions). In other words, institutions can be seen as opportunities for firms to develop strategies to conduct transactions more efficiently (Guo et al., 2017; Kreiser et al., 2021; Oliver and Holzinger, 2008). Therefore, institutions may help to generate an environment where firms can efficiently organize their activities and invest more confidently (Baumol, 1996). This deeper understanding becomes more relevant when the firms are operating in the landscape of developing countries (Dai et al., 2020; Yiu and Lau, 2007). Coinciding with the emergence of developing countries in the global market, more researchers in the field of entrepreneurship are analyzing the behavior of firms in these countries (Hitt et al., 2011), employing institutional economics (Yiu et al., 2014). Researchers of developing countries found the positive effects of institutions on business performance. For instance, technological capabilities and institutions are positively related to firm productivity in Asia and Latin America (Basco et al., 2020; Goedhuys and Srholec, 2015). Institutions are also drivers of export performance, for example in Vietnam

(Donbesuur et al., 2020; Ngo et al., 2016). Dollar et al. (2005) established a robust linkage between investment climate and the performance of firms, evidencing the significant effect of investment climate indicators on output growth, productivity, employment, wages, profit rates, and capital stock at the firm level. Property rights are also relevant to the performance of firms (Kraay and Fernandes, 2005) and productivity in China (Lu et al., 2013). Hence, as the institutional environment appears to be a relevant determinant of the performance of firms, we propose the following hypothesis:

> *Hypothesis 2: Institutions are positively related to the performance of firms in developing countries.*

4.2.3 Institutions and dynamic capabilities

The dynamic capabilities is a relevant perspective to understanding the interplay of the environment and the strategic choice in firms (Teece and Pisano, 1994). Therefore, formal and informal institutions may play a crucial role in determining the environment in which firms use their capabilities. Chapter 1 describes the dynamic capabilities framework. Dynamic capabilities emerge from the organizational and strategic routines that top managers integrate, build, reconfigure, and renew the firm's substantive resources. Hence, the firm generates outcomes in rapidly changing institutional environments (Eisenhardt and Martin, 2000; Teece and Leih, 2016). As mentioned before, developing countries are characterized by turbulent, continuous economic reform processes and experience substantial and complex changes in their institutions. These factors may force the management to make rapid strategic decisions using a limited assessment of the firm's operational environment in order to establish dynamic capabilities (March, 1991; Sakhdari et al., 2020). Firms are especially challenged to revise their routines to use their substantive capabilities to create new products and services, new strategies, and enter new markets (Zhou and Li, 2010).

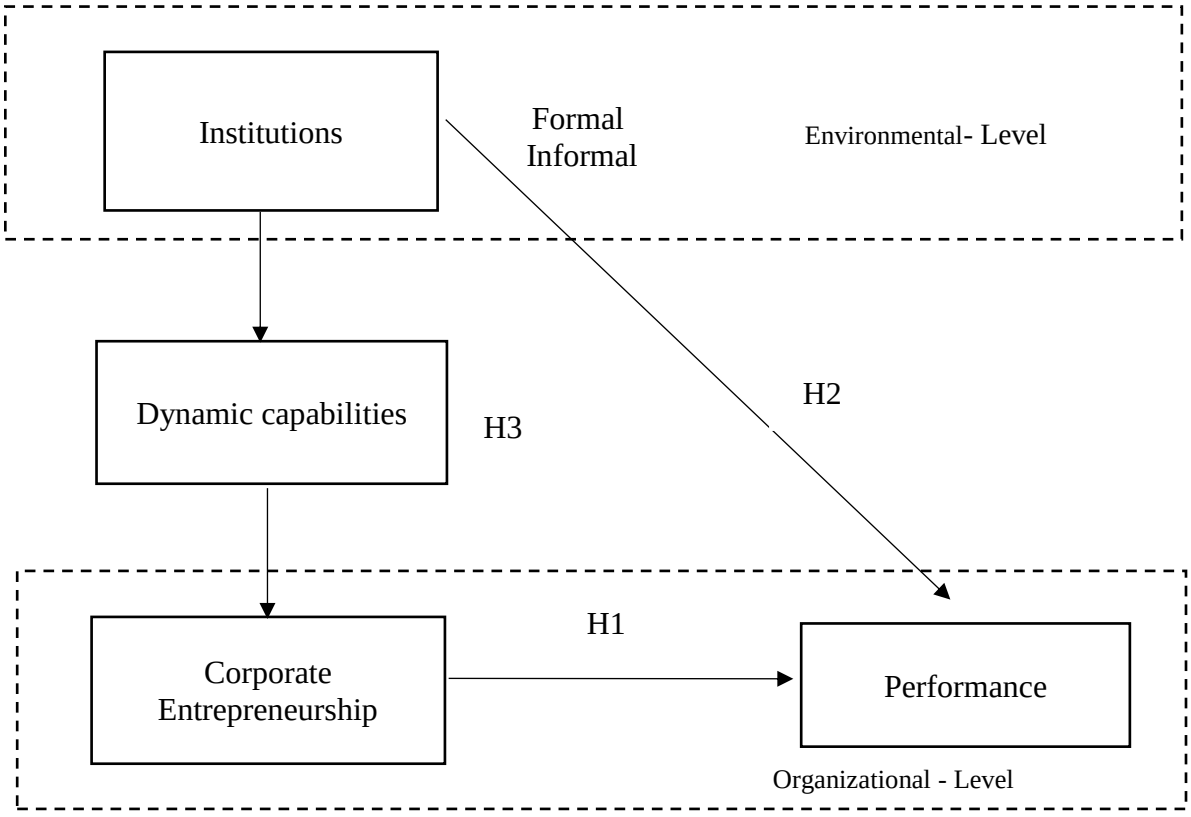
For this reason, formal and informal institutions may have a relevant influence in shaping managerial awareness, value systems, and processes through organizational patterns, models, and schemes (Crossland and Hambrick, 2011; Urbano and Turro, 2013). In this regard, entrepreneurs are required to "simplify and distil the causes and consequences of dominant

norms and practices, and to question their utility" (Phillips and Tracey, 2007, 316). Entrepreneurs (including intrapreneurs) may be able to connect existing and new organizational practices, and align the new practices with the values of main stakeholders (Maguire et al., 2004). Thus, institutions condition specific entrepreneurial skills, processes, procedures, organizational structures, decision rules, and disciplines as essential micro-foundations of dynamic capabilities (Teece and Leih, 2016). For instance, human capital is formed by distinct entrepreneurial skills, and managerial routines cannot be explained independently from the institutional environment in which it is built. It is significantly different when comparing developed and developing countries (Lyu et al., 2020). Institutions are also relevant to driving the patterns of the exploration and exploitation of resources and capabilities (Mueller et al., 2013; Yeganegi et al., 2019). Scholars agree that different dynamic capabilities are necessary to operate in resource-constrained institutional environments (Baker and Nelson, 2005; Dai et al., 2020). Empirical evidence suggests that institutional uncertainty offers more room for discretion and flexibility, resulting in emerging particular dynamic capabilities in developing countries (Lu et al., 2010). However, dynamic capabilities can also be restricted in contexts where the institutions are highly restrictive (Acemoglu et al., 2003). For instance, the managerial activities that derive from dynamic capabilities can be perceived as deviations from local norms in contexts where institutions are characterized by greater monitoring and sanctionative measures (Taras et al., 2010). Thus, dynamic capabilities may mediate corporate entrepreneurship because firms cannot engage properly in these institutional contexts, and the transfer of capability results in the loss of performance and the competitive advantage. The extent to which dynamic capabilities are enhanced in firms might be critical to the success of firms in dynamic markets (Zahra and Sapienza, 2006). Firms benefit from dynamic capabilities in creating of new ventures and strategies (Bowman and Ambrosini, 2003; Newbert, 2005); entering new market (King and Tucci, 2002) and commercializing new technologies (Marsh and Stock, 2003). All these entrepreneurial activities may increase organizational agility and market responsiveness in volatile environments. To summarize, we could say that corporate entrepreneurship as a strategic choice may be a consequence of the interactions between institutions and firms (Peng et al., 2009), and dynamic capabilities mediate this relationship. Therefore, we state the following hypothesis:

Hypothesis 3: The influence of the institutional context on corporate entrepreneurship is mediated by dynamic capabilities such that mediation is significant in developing countries.

Finally, we summarize this literature review in Figure 4.1. This figure describes the proposed model to explain the relationship among institutions, corporate entrepreneurship, performance, and dynamic capabilities in developing countries

Figure 4.1. Proposed Model



Source: Own elaboration

4.3 Methodology

4.3.1 Data

The population of this study consists of employees and managers, both middle and senior level, working in Colombian firms with more than 20 employees. Colombia is a developing

country with increasing public policy programs oriented toward fostering entrepreneurship and innovation (DNP, 2020) and the liberalization of markets (Eslava et al., 2013). However, the benefits of the stabilization of social conflict (Camacho and Rodriguez, 2013) are seen to be insufficient to improve the lack of diversification of products and services (Aparicio et al., 2021; Hausmann et al., 2007), and the technological skills and internal knowledge capacity to endeavor in a competitive scenario (Crespi and Zuniga, 2012). Thus, top managers are urged to make rapid decisions to reconfigure and renew the substantive resources to adapt the firms to the constant turbulence of the institutional environment.

We follow a convenience sampling procedure. The selected employees were well-informed about the firm's strategical, financial, and performance aspects. Following Dillman's (2000) recommendations for boosting participation, the potential respondents were directly contacted by telephone, LinkedIn, or email and asked to participate. We administered the survey from mid-november 2020 to mid-march 2021. Trained members of the contracted vendor had virtual meetings with the top administrators of firms to explain the project and determine a date for the virtual meeting or a phone call to conduct the surveys. We selected a vendor to conduct the field research based on its relevant experience involving firms. The selected vendor has participated in collecting information for international research projects like the Global Entrepreneurship Monitor. Hence, it has the infrastructure to conduct surveys on a national level.

Table 4.1 summarizes the profile of the 326 respondents. The respondents are 61.35 percent males and 38.5 percent women. The sample is relatively young; most respondents are between 31 and 45 years old. Regarding the positions in the firm, 67.82 percent hold section-level positions as middle-level managers, and 32.2 percent belong to the top management. The average years of experience of the respondents is 15.9 years.

Table 4.1. Descriptive characteristics of the sample employees (326)

Sample	Item	Percentage
Gender	Male	61.35
	Female	38.65
Age	Between 22 and 30 years old	12.3
	Between 31 and 45 years old	48.4
	More than de 45 years old	39.4
Position	Senior managers	32.2
	Middle-level managers	67.82

Table 4.2 describes the profile of the 326 firms. 43.25 percent are small (more than 20 employees and less than 50); 25.15 percent are medium-sized, with more than 51 employees and less than 200. Finally, larger firms with more than 200 employees represent 31.6 percent of the sample. Concerning the economic sectors, firms belong to various sectors. The main sectors are consumer and professional services (31.9 and 11.04 percent, respectively) and manufacturing (9.51 percent). Other represented sectors are government, health, education, and social services (9.2), information technology, and communication (7.36). Firms are located in the most industrialized metropolitan areas in the country, mainly in Bogota, with participation of 50.31 percent, followed by Barranquilla, and Cali, with 24.54 and 12.88 percent, respectively.

Table 4.2. Descriptive characteristics of the sample firm (326)

Sample	**Item**	**Percentage**
Size	Small firm (20 to 50 employees)	43.25
	Medium-sized firm (51 to 200 employees)	25.15
	Large (More than 200 employees)	31.6
Sector	Consumer services	31.9
	Professional service	11.04
	Manufacture	9.51
	Government, health, Education, and Social Services	9.2
	Wholesale trade	8.28
	Information and communication technologies	7.36
	Minning and infraestructure	6.44
	Financial services, real state, and business services	5.52
	Others	10.73
Location	Bogota	50.31
	Barranquilla	24.54
	Cali	12.88
	Medellin	8.9
	Other	1.53

4.3.2 Variables

This research employs a correlational design to examine the relationships among corporate entrepreneurship, institutions, and dynamic capabilities and to explore the potential causal influence of these factors on the performance of firms. We designed an instrument and developed and tested the measurement scales to examine these relationships. The scale's content validity was pre-tested, checked, and improved with the help of two academics and two experts from the selected vendor to conduct the survey. The finalized questionnaire is then used to test the aforementioned hypotheses.

The questionnaire consists of four parts, including the demographics. The first part of the questionnaire contains seven items to measure corporate entrepreneurship. The second part involves four items that measure subjective performance. The third part includes items addressing the variable institutions with 14 items, and the fourth part of the survey consists of seven items that measure the dynamic capabilities. With 32 total questions using a five-point Likert Scale (e.g., either 1 = strongly disagree, 3 = neither agree nor disagree, or 5 = strongly agree).

The extent to which companies pursue corporate entrepreneurial activities is measured by adapting the work developed by Zahra (1996) and Kuratko and Audretsch (2013) classification. The construct captures the dimensions of strategic entrepreneurship with measures of innovation, developing new products and services, entering new markets, and redefining the business scope or strategy. The dimension of corporate venturing includes items such as the birth of new business within existing companies, the acquisition of other firms, and the participation in other industries alone or with equity. Similar to other studies in developing countries, we dropped some corporate venturing items due to reliability (Sakhdari et al., 2020).

Measures of firm performance can use both objective and subjective performance, including profitability, market share, sales growth, overall performance, and stakeholder satisfaction (Lumpkin and Dess, 1996). A seven-item construct measures performance (Yunis et al., 2018). The vendors asked the respondents to assess the subjective performance of their firms

relative to their competitors in terms of sales, market participation, overall performance, and general growth of the firm (Bierwerth et al., 2015).

We adapt our construct for the institutional environment from the National Expert Survey (NES) developed for the Global Entrepreneurship Monitor research project. The National Expert Survey has been extensively used in entrepreneurship research to capture the effect of the institutional environment (Felzensztein et al., 2013; Hechavarría and Ingram, 2019; Martínez-Fierro et al., 2016). The items related to formal institutions evaluate the role of government, educational system, and fiscal structure in fostering corporate entrepreneurship. The items for informal institutions contain cultural and normative aspects of encouraging employees to engage in entrepreneurial activities.

Finally, the construct to measure dynamic capabilities resulted in a set of items indicating the basis of the firms' dynamic capabilities. These items assess the firm's sensing, shaping, and seizing opportunities in uncertain environments (Teece and Leih, 2016; Teece and Pisano, 2003). For example, the respondents assessed seven items regarding the search for new business and markets, monitoring the information about customers, new technologies, and industry. Also, they evaluated the reorganization of routines before changes in the environment, the competitors, and technology (Makkonen et al., 2014).

We present the constructs and items in Table 4.3, with the construct loadings and reliability results. The results indicate high scores of factor loadings (> 0.5) and high reliability (Cronbach's $\alpha > 0.7$) (Hair et al., 2014).

Table 4.3. Construct measures and reliability index.

Construct		Item	Factor Loadings	Cronbach's Alpha	Average Variance Extracted (AVE)
Corporate Entrepreneurship	P3.2.1	The firm emphasizes the reorganization of business units to increase innovation.	0.806	0.91	0.649
	P3.2.2	The firm is a pioneer in developing innovations in its industry to take advantage of new opportunities.	0.758		
	P3.2.3	The firm stimulates demand for its existing products in its current markets through aggressive advertising and marketing.	0.817		
	P3.2.4	The firm expands its business lines in its current industries.	0.882		
	P3.2.5	The firm redesigns the business model in its current industries	0.827		
	P3.3.1	The firm has diversified its operations into new industries.	0.828		
	P3.3.4	The firm has created a new business within its corporate structure.	0.711		
Performance	P4.2.1	Market growth: In the last three years, in relation to the main competitor, the firm increased its market share	0.918	0.945	0.86
	P4.2.2	Sales: In the last three years, relative to the main competitor: sales increased.	0.939		
	P4.2.3	Size: In the last three years, relative to your main competitor, your firm increased in size	0.917		

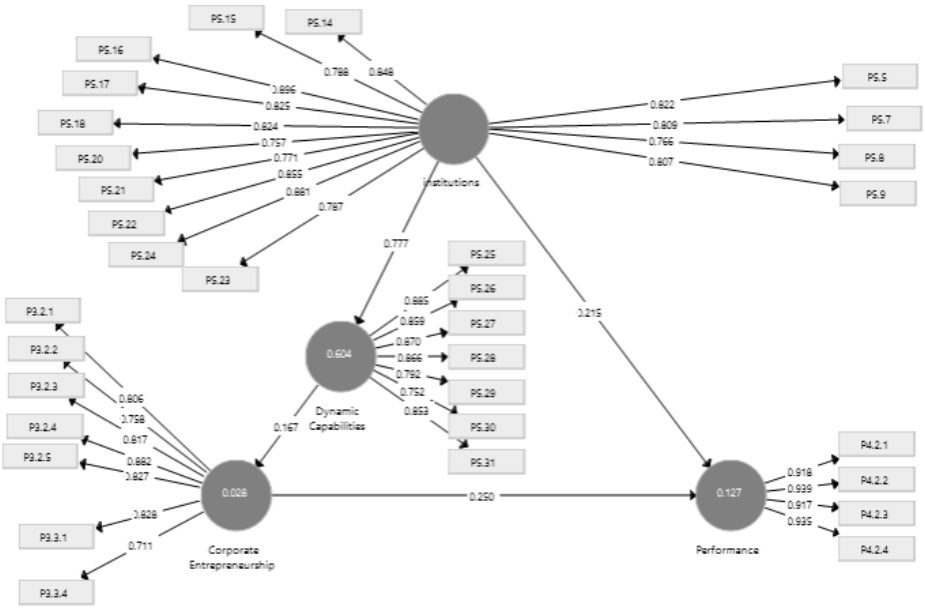
	P4.2.4	Overall performance: Relative to its main competitor: The overall performance of the firm as a whole grew in the last three years,	0.935		
Institutions	P5.5	In my environment, an employee who decides to create an independent firm is usually supported by the firm where he works.	0.822	0.962	0.669
	P5.7	In my environment, I often see and/or hear in the media about companies that have been successful in their corporate entrepreneurship strategy.	0.809		
	P5.8	Its local environment encourages employees to adopt entrepreneurial behaviors to develop new projects in the firm.	0.766		
	P5.9	Social and cultural norms encourage business risk-taking.	0.807		
	P5.14	There is good support from the central and local governments to promote intrapreneurial employees and corporate entrepreneurship.	0.848		
	P5.15	Banks and investors in your local environment go to great lengths to fund corporate entrepreneurship strategies from established companies.	0.788		
	P5.16	I believe that the government of my country / my state/department or province has good policies that favor corporate entrepreneurship.	0.896		
	P5.17	I have a good knowledge of government programs (regional, national ...) that finance innovation projects and corporate entrepreneurship.	0.825		
	P5.18	I believe that universities and research centers receive adequate and sufficient public funding to collaborate with corporate entrepreneurship.	0.824		
	P5.20	I believe that the public sector in my country is capable of doing a good job managing resources for innovation, corporate entrepreneurship, and business competitiveness.	0.757		
	P5.21	I believe that the economic and political environment is stable enough to attract national and international investment to finance corporate entrepreneurship activities.	0.771		
	P5.22	Local and central governments, universities, and other institutions help promote corporate entrepreneurship. If I wanted to, I would know how to request support from one of these support institutions in my local environment	0.855		
	P5.23	Taxes and fees are NOT, in general, a barrier to the existence of corporate entrepreneurship.	0.787		
	P5.24	Carrying out the bureaucratic procedures and obtaining the legal permits to develop the corporate entrepreneurship does NOT represent a major difficulty for the entrepreneurs	0.881		
Dynamic Capabilities	P5.25	The firm seeks new business in new industries related to its current business.	0.885	0.93	0.707
	P5.26	The firm invests resources in exploring new investment opportunities in the environment.	0.859		
	P5.27	The firm constantly monitors information on customer needs, new technologies and competitors, and industry.	0.87		
	P5.28	The firm reorganizes activities, routines, and structures according to changes in the environment.	0.866		
	P5.29	There are many good opportunities to develop corporate entrepreneurship strategies in an environment exposed to significant change.	0.792		
	P5.30	The actions of competitors are difficult to predict.	0.752		
	P5.31	Technologies for delivering products and services offered by companies are subject to significant change.	0.853		

4.4 Results

4.4.1 Measurement instrument and construct measures.

We test and examine the theoretical model (Figure 4.1) with PLS-SEM technique using the SMART-PLS software. A reflective scheme for all the latent constructs (corporate entrepreneurship, performance, dynamic capabilities, and institutions) in the model is used on the full un-standardized dataset

Figure 4.2. Structural model – path coefficients



4.4.2 Outer model analysis

We analyze the measurement model by examining the convergent and discriminant validity of the four first-order latent constructs (corporate entrepreneurship, performance, institutions, and dynamic capabilities). The convergent validity of all four constructs is supported as factor loadings are above the threshold of 0.7 (Figure 4.2). More than 50 percent of the variance in the observed variable can be explained by the underlying construct (Hair et al., 2011). Furthermore, a bootstrap test shows that all indicators reflect their latent constructs significantly. Additionally, all average variance extracted (AVE) values exceed the minimum 0.5 threshold (Table 4.3). Therefore, the constructs explain more than 50 percent of the indicators' variance. Lastly, the composite reliability for all first-order reflective constructs is robust and above the required 0.8 (Table 4.3). The results indicate high-scale reliability, supporting the factors' unidimensionality and reflective scheme. Concerning discriminant validity, the average shared variance of the construct and its indicators (Table 4.4) is higher than the shared variance with other constructs (Fornell and Larcker, 1981).

Table 4.4. Composite reliability and discriminant validity

	Composite reliability	Average Variance Extracted (AVE)	Discriminant validity			
			Corporate Entrepreneurship	Dynamic Capabilities	Performance	Institutions
Corporate Entrepreneurship	**0.928**	0.649	**0.806**			
Dynamic Capabilities	**0.944**	0.707	0.167	**0.841**		
Performance	**0.961**	0.86	0.287	0.149	**0.927**	
Institutions	**0.966**	0.669	0.172	0.777	0.258	**0.818**

4.4.3 Inner model analysis

The second step of the analysis considers the inner model. The R-square results of the tested model evidence that an acceptable part of the variance of the corporate entrepreneurship, dynamic capabilities, and performance constructs can be overall explained by the model. The results were R^2= 0.025, 0.603, and 0.122 respectively. These results agree with the proposed threshold; thus, the homological validity of the model is satisfactory (Chin, 1998).

Table 4.5: Path coefficients and indirect effects

	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P - Values
Corporate Entrepreneurship -> Performance	0.254	0.056	4.475	0.000
Dynamic Capabilities -> Corporate Entrepreneurship	0.169	0.058	2.875	0.004
Institutions -> Dynamic Capabilities	0.778	0.021	37.024	0.000
Institutions -> Performance	0.219	0.045	4.825	0.000

We calculate the path coefficients among corporate entrepreneurship, performance, institutions, and dynamic capabilities construct to examine the structural model. The path coefficients' significance is calculated using bootstrapping with 5000 iterations of resampling (Hair et al., 2014). Figure 4.2 shows the results of both the inner model and the bootstrapping results that are presented in Table 4.5. The path coefficients (Figure 4.2) depict that corporate entrepreneurship has significant positive effects on performance ($\beta = 0.254$, p-value = 0.000 and $\beta = 0.113$, p-value = 0.008). Institutions are important for explaining the

performance of firms (β =0.219, p-value = 0.000), and strongly affect dynamic capabilities (β =0.778, p-value = 0.000). Subsequently, dynamic capabilities mediate in this relationship between institutions and corporate entrepreneurship (β =0.169, p-value = 0.000). Hence, Hypotheses 1, 2, and 3 are supported.

4.5 Discussion

This chapter sheds light on the literature by providing additional empirical support for the importance of corporate entrepreneurship in developing countries, especially linking the results of these entrepreneurial activities to performance. It also contributes by exploring how firms continually make decisions in a complex institutional environment by reconfiguring their firms' capabilities. As expected, corporate entrepreneurship actions are significantly linked to performance, but they are strongly affected by the institutional environment. This research contributes to the literature in two ways.

Fist, corporate entrepreneurship strategies might not be equally effective in all developing countries due to significant differences in the institutional context (Zahra et al. 1999) and the rich diversity of institutional arrangements across countries (Elango and Dhandapani, 2020; Narayanan and Fahey, 2005), and so, more significant insights into the applicability of the corporate entrepreneurship and performance concepts will be expanded through attending to the specific characteristics of each countries. We find indicators showing that dynamic capabilities as mediating variables of the relationship between institutions and corporate entrepreneurship. Institutions boost performance and lead to the development of a set of dynamic capabilities that generate corporate entrepreneurship and improve performance.

Second, this chapter enhances theory development by providing information about the extent to which firms use their dynamic capabilities to operate in the context of developing countries. Previous research in developing countries has analyzed the formal and informal drivers for enhancing performance (De Clercq et al., 2013; Dollar et al., 2005; Kraay and Fernandes, 2005; Li and Zahra, 2012). Other research has explained the different sets of dynamic capabilities used to operate in uncertain environments (Goedhuys and Srholec, 2015; Xu et al., 2018). The empirical results of our research test confirm and measure the

interplay of national-level institutions and firm-level performance (Peng et al., 2009; Yasar et al., 2011). We measure different variables of formal and informal institutions to construct the institutions' latent variable. According to our results, firms in developing countries appear to consider mainly formal institutions in their decision to design the corporate entrepreneurship strategy, a statement in line with other research (Bowen and De Clercq, 2008; Vanacker et al., 2021). Overall, the quality of public policies, financial, and educational systems might be used as explanatory variables for the performance of firms (Wright et al., 2005).

Additionally, this study provides information about the relevant capabilities needed to maneuver the institutional environment to design, deploy and evaluate the strategy. For example, it is a challenge for firms to increase human capital (Calabrò et al., 2021), political networks (Yiu and Lau, 2007), and other capabilities such as absorptive capacity (Mardani et al., 2018), marketing (Xu et al., 2018), and technological capabilities (Yunis et al., 2018). These capabilities are critical for enhancing performance (Liu et al., 2013; Liu et al., 2015). Accordingly, this research fits into the current debate by scholars working in both areas who have called for a richer and more contextualized understanding of institutions and dynamic capabilities in uncertain environments. Moreover, these novel approaches provide more information to generalize the empirical results and improve the theoretical contributions.

Our results offer relevant implications for managers. First, the business strategies designed to target innovation should pay attention to the specificities of the firm strategy and the national-level institutional ecosystem. This chapter points out that it is valuable to engage in corporate entrepreneurship in developing countries due to the positive effects on the performance of firms. More importantly, managers should not solely emphasize internal resources to design and execute the corporate entrepreneurship strategy. They should develop skills and capabilities to 1) adapt their corporate strategy to changing environment, emphasizing the type of corporate entrepreneurship activity, 2) consider which institutions could affect the corporate strategy and the performance, implying that each developing country is unique in its institutional context, and 3) generate actions in the human resources or the organizational structure to integrate and systematize knowledge. These elements harness acquired knowledge to understand how to build a durable competitive advantage at a firm. With this respect, we suggest that firms could generate synergies with educational

institutions specifically to develop methods and new knowledge for creating distinctive capabilities. Hence, build new abilities to reorganize their routines to promote interactions that lead to successful solutions to particular problems, in order to recognize and avoid strategic blind spots and engage in other actions. These could be new alliances and acquisitions that bring new strategic assets into the firm from external sources.

This study offers insights to be considered by policymakers as well. Firms rely on the formal institutional environment. In Colombia, Government has recently introduced new legislation to promote business creation and innovation (DNP, 2020). The scope of this legislation could be wider in promoting corporate-startup collaboration (Rigtering and Behrens, 2021). Therefore, public policymakers should also develop more programs that encompass more actions to foster corporate entrepreneurship, like promoting corporate entrepreneurship through corporate venturing (Dai et al., 2020). In the case of Colombia, external corporate venturing needs attention because it can bring other capabilities and resources for growth and competitiveness. Policymakers could develop actions to increase this corporate entrepreneurship dimension; this would include providing more resources and mechanisms to enhance the external corporate investments, policies which include the cooperation with private funds for the capitalization of firms, and offer more incentives to extend the use of innovation. Regional policy interventions like the *Manizales-Más* is an example of regional economic development projects that foster growing firms and scaleups by activating the stakeholders, aligning the leaders, establishing the execution platform and proof-of-concept, and systematizing and expanding programs (Isenberg and Onyemah, 2016).

4.6 Conclusion

Using data from 326 firms operating in Colombia, we test a structural model to provide additional empirical support for the importance of corporate entrepreneurship and performance relationship in developing countries. Our empirical study provides indicators to show that dynamic capabilities mediate the relationship between institutions and corporate entrepreneurship. Additionally, institutions boost performance and lead to the development

of a set of dynamic capabilities that generate corporate entrepreneurship and improve performance.

This chapter contributes by exploring how firms continually make decisions in a complex institutional environment, reconfiguring their firms' capabilities. Therefore, the role of top management when deciding the entrepreneurial activities focus on employing, integrating, and reconfiguring the current resources to address the opportunities in the changing environment.

Despite the contribution of this chapter, some limitations open interesting avenues for future research. First, this study was conducted by gathering information from managers, which could lead to response biases. Future research should have multiple respondents in each organizational unit to minimize the effects of systematic response bias (Mustafa et al., 2016). Second, entrepreneurship is evolving, and the dynamic capabilities are by nature changing, so the cross-sectional nature of this research does not allow for causality inferences to be drawn (Sakhdari et al., 2018)

Further research is required to perform longitudinal studies to explore the different results related to corporate entrepreneurship and performance, institutions, and dynamic capabilities (Zhang et al., 2013). Third, the research focus was on Colombia. Therefore, considering the little research conducted in the field in different developing countries, future research should expand to other countries in Latin America to provide a better generalization of the results. Fourth, this study is limited to the institutional and organizational factors affecting corporate entrepreneurship. Further research should follow into the managerial and employee behavior, antecedents, and motivations to influence corporate entrepreneurship in firms to answer how they contribute to the entrepreneurial mindset of the firm. Fifth, our study uses dynamic capabilities as mediators. Future studies may study other mediation and/or moderation among external and internal determinants, or in combination with corporate entrepreneurship.

Here, our empirical test shows more robust indicators of strategic entrepreneurship compared to corporate venturing. As a result, new areas of analysis are emerging to systematically understand the separate relationship between the different domains of corporate entrepreneurship and firm performance (Vanacker et al., 2021).

Finally, we were challenged to conduct field research during the pandemic of COVID-19. The vendor experimented difficulties in reaching participants due to lockdown and communication restrictions with the firms' headquarters. Consequently, further research should evaluate new insights to improve the results after the pandemic in order to avoid additional bias.

For future research, a suggestion of this chapter is to employ more accurate techniques to gather information from firms to avoid response biases. In the next chapter, we used the World Management Survey program data. This program is the first to offer an extensive and internationally comparable management practice dataset based on a double-blind survey of samples of medium-sized manufacturing firms across various industries and countries. We use this information to address a relevant research gap about how individuals exploit new opportunities via intrapreneurship or entrepreneurship based on the prevalent management practices across countries.

Chapter 5

Management practices in the allocation of innovative entrepreneurship and intrapreneurship across countries

5. Management practices in the allocation of entrepreneurship and intrapreneurship across countries

5.1 Introduction

In the previous chapter, we presented an organizational-level analysis encompassing the environmental level analysis. In this chapter we study the role of management practices in allocating entrepreneurial talent into intrapreneurship or entrepreneurship. In this regard, there is a consensus that entrepreneurship is an essential factor in explaining the economic development process of countries (Acs and Szerb, 2007; Aparicio et al., 2016; Bjørnskov and Foss, 2016). Entrepreneurship is about individuals who create opportunities and attempt to exploit those opportunities through various modes of organizing (Stevenson and Jarillo, 2007). Baumol (1996) argues that entrepreneurial activity across countries is relatively constant, while the prevalence of various forms varies significantly (Bowen and De Clercq, 2008; Koster and Rai, 2008; Murphy et al., 1991). From this perspective, previous research shows that there are significant variations in entrepreneurship and intrapreneurship rates across countries (Bosma et al., 2013; Stam, 2013). In this regard, comparative international entrepreneurship research has extensively shown the fundamental role that institutional factors have in the development of different forms of entrepreneurial activities, such as: entrepreneurship (Boudreaux et al., 2019; Bowen and De Clercq, 2008), intrapreneurship (Ljunge and Stenkula, 2021; Urbano et al., 2023) or corporate entrepreneurship (Judge et al., 2015). Yet, we lack a thorough understanding of what explains the variation across countries in the way business opportunities are exploited.

Previous literature has identified several reasons why new opportunities might be exploited via entrepreneurship rather than intrapreneurship or vice versa, at the individual-level (Douglas and Shepherd, 2002; Martiarena, 2013; Parker, 2011; Thornton, 1999) and at the firm-level (Kacperczyk, 2012). However, the role of environmental factors has been less studied and typically from a theoretical and non-empirical approach (Holland and Garrett, 2015). Specifically, despite the relevance of managerial practices for intrapreneurship, country-level studies have focused on different sets of formal and informal institutions (Bogatyreva et al., 2022; Knörr et al., 2013) and neglected the role of the countries' prevalent

managerial practices in explaining the allocation of entrepreneurial talent over entrepreneurship and intrapreneurship. This is a surprising omission since managerial practices are a key antecedent of intrapreneurship (Rigtering and Weitzel, 2013) and spinout decisions (Kacperczyk, 2012). The quality of management practices has been linked to better economic outcomes (Bloom and Van Reenen, 2007), to an improvement of labor standards (Distelhorst et al., 2017), to better firm performance (Karplus et al., 2021) or to the development of an innovative behavior (Globocnik and Salomo, 2015). In addition, they are related to many aspects that are closely linked to the development of intrapreneurial activities, such as: entrepreneurial decision making (Engel et al., 2017); family firms growth (Poza, 1988), or the type of structure within a firm (Neessen et al., 2019). Despite all this evidence, it remains unexplored to what extent the allocation of individuals across entrepreneurship and intrapreneurship is affected by the institutional setting. Institutions can condition the perception of how feasible, desirable, or socially prestigious entrepreneurial activities are, and, ultimately, which individuals will be involved in entrepreneurship and intrapreneurship activities, respectively (Baumol, 1996; Judge et al., 2015).

Our empirical research focuses on analyzing the extent to which management practices across countries affect the mode of opportunity for entrepreneurship exploitation by individuals. We test our hypotheses using a sample of 201,267 individuals across 20 countries extracted from GEM and WMS. A maximum-likelihood self-selection probit model is used to correct for non-random self-selection into innovative entrepreneurial activity. This approach allows us the study of multilevel factors, which provide a more comprehensive analysis than any one aspect in isolation. The results show that country managerial practices (such as advanced operation practices, performance monitoring, target settings and talent management practices) condition the way in which entrepreneurial opportunities are exploited.

The contributions of this study are twofold. First, we contribute to comparative entrepreneurship research (Terjesen et al., 2016) by explaining how the international patterns of management practices may be associated with the decision of an individual to select the entrepreneurship mode of opportunity exploitation, either entrepreneurship or intrapreneurship. Second, this study has some implications for policymakers by providing a

deeper understanding of the extent to which specific managerial practices affect entrepreneurial activity in countries.

We organize this chapter as follows. The following section reviews the literature on the mode of opportunity exploitation over countries and presents the study's hypotheses. The next section we detail the methodology of this study. Then, we present the main findings of the study, the discussion and positions the findings in the existing literature. Finally, we provide conclusions, present the limitations of the study and suggest future research lines.

5.2 Conceptual framework

5.2.1 Entrepreneurship versus intrapreneurship

Individuals are exposed to an heterogeneity of resources and uncertainty, this fact is essential to understand how the individuals discover and exploit opportunities (Foss and Klein, 2020). The individual evaluation of opportunities relies on prior experiences, cognition, and knowledge (Eckhardt and Shane, 2003; Hayek, 1945; Kirzner, 1997; McMullen et al., 2007). The literature on entrepreneurship and organization suggest that entrepreneurial individuals can choose between two options: entrepreneurship and intrapreneurship (Kacperczyk, 2012; Parker, 2011). While (independent) entrepreneurship occurs in the market, intrapreneurship occurs in established firms. Entrepreneurship is "the act of developing a new venture outside an existing organization" (Parker, 2011, 20). In contrast, intrapreneurs exploit opportunities, create new ventures, or develop innovative projects on behalf of the firm (Bosma et al., 2013; Turro et al., 2016). As a result, intrapreneurship may create a new venture (internal or external corporate venture), a new product or service, it may contribute to the strategic renewal of the firm or to the generation of new business models (Ireland et al., 2009).

5.2.2 Management practices

Managerial practices are defined as "explicit and measurable incentives, disciplines, and routines that guide employees' daily work" (Karplus et al., 2021, 1). Formal and structured

management practices explain the adoption of decisions as a rational strategy for enhancing productivity. Accordingly, the impetus to formalize management practices may originate managers' incentives, which increase with the exposure to market competition and the managerial autonomy to adopt practices that enhance productivity (Karplus et al, 2021). Bloom and Van Reenen (2007) designed the World Management Survey (WMS) program to measure management practices as an important factor in understanding the heterogeneity of firm productivity and the significant cross-country differences. In summary, the WMS is an interview-based evaluation tool that defines and scores from one ("worst practice") to five ("best practice") of 18 key management practices (Table 5.1). The individual question scores are then averaged for each firm into a single indicator of "management." Accordingly, higher management scores are positively and significantly associated with higher productivity, firm size, profitability, sales growth, market value, and survival (Bloom et al., 2012). Finally, scores are aggregated at a country-level revealing some "patterns of specialization by country in management style" (Bloom and Reenen, 2010, 214). The basic patterns of specialization (prevalent management practices) vary significantly across countries; thus "a combination of imperfectly competitive markets, family ownership of firms, regulations restricting management practices, and informational barriers allow bad management to persist" (Bloom and Reenen, 2010, 204). WMS measures the following practices among manufacturing firms:

First, advanced operational management practices emphasize lean manufacturing as a solution for production systems in various industries to accelerate competitiveness (Buer et al., 2020; Cullinane et al., 2013; Gupta and Jain, 2013; Kamble et al., 2020). Lean manufacturing is a multidimensional approach to manufacturing that encompasses a wide variety of management practices within an integrated system dedicated to minimize waste (Shah and Ward, 2003). Adopting these advanced management practices may develop strong competencies in innovation management as they internalize and advance past knowledge effectively (De Massis et al., 2015; Rigtering et al., 2019).

Second, performance monitoring is a term applied to a variety of management practices that involve the collection of employee work performance data (Claypoole and Szalma, 2019; Komaki et al., 1986). The presence or absence of performance monitoring and how monitoring is conducted influence the amount of effort that employees address to different

tasks (Larson and Callahan, 1990; Tomczak et al., 2018; Zhu et al., 2019). Literature has focused on performance monitoring to learn about how employees react to performance monitoring: the behaviors, attitudes, affect, and physiological responses that result from monitoring (Stanton, 2000). Monitoring plays a role in effective supervision (Komaki et al., 1986), in optimal organizational structure (Eisenhardt, 1989b; Jones, 1987; Yin et al., 2019), in good teamwork (Kolbe et al., 2014) and job satisfaction (Chalykoff and Kochan, 1989; Kampkötter, 2017), and in worker stress (Amick and Smith, 1992).

Third, according to Locke and Latham's goal theory, target setting practices directs attention and action to goal-related activities (Locke and Latham, 2002). They have an energizing function. Essentially, the theory is four-fold. Firstly, harder goals lead to more significant effort than more manageable goals (Locke et al., 1981; Locke and Latham, 2002). Secondly, keeping ability constant, given that there is goal commitment, the higher the goal, the higher the performance. Thirdly, personality traits and incentives influence an individual's behavior to the extent that they lead to a commitment to an specific challenging goal (Epton et al., 2017; LaPorte and Nath, 1976). Lastly, target settings can also have a relevant cognitive benefit. It can influence the motivation to discover ways to achieve the goal (Seijts and Latham, 2005).

Finally, the fourth management practice is talent management, aimed at creating and sustaining exceptional human resource contributions for firms (Castrogiovanni et al., 2011; Litz and Stewart, 2000). Talent management practices in every type of organization must support relations among organizational departments (Way and Johnson, 2005; Yin et al., 2019) and should enhance the value of an organization's employees (Welbourne and Andrews, 2017). The enhancing value of employee forces commitment to job and firm. Talent management practices are related to staffing, developing, retaining, empowering, and motivating (Ahmad and Schroeder, 2003; Schlechter et al., 2015; Yin et al., 2019).

Management practices have been employed as a country-level factor (Aycan et al., 2000; Ollo-López et al., 2011; Floyd, 1999; Waldman et al., 2012). Such studies emphasize that cross-country differences in the use of specific management practices are due to differences in the institutional environment, with countries that generate pressures that favor their use and countries that do not (Ollo-López et al., 2011). Generally speaking, institutions shape

firms across countries and conform to their expectations by coercive pressure (stem from societal expectations and inter-organization interdependence), normative pressure (arising from professionalization), and mimetic pressure (deriving from uncertainty) (DiMaggio and Powell, 1983). Chapter 1 explored the institutional theory as the foundation of society's behavior, we mentioned that firms across countries are subject to similar coercive, normative, and mimetic pressures and management practices would be the same across countries. Firms that operate in the same institutional field tend to adopt the same management practices (Ollo-López et al., 2011). Hence, institutional forces result in organizational homogeneity (DiMaggio and Powell, 1983). Accordingly, the understanding of organizational structures is linked to their social environment (Martinez and Dacin, 2016).

Table 5.1. 18 key management practices

Operation management	Introduction of modern manufacturing techniques	What aspects of manufacturing have been formally introduced, including just-in-time delivery from suppliers, automation, flexible manpower, support systems, attitudes, and behavior?
	Rationale for introduction of modern manufacturing techniques	Were modern manufacturing techniques adopted just because others were using them, or are they linked to meeting business objectives like reducing costs and improving quality?
Performance monitoring	Process problem documentation	Are process improvements made only when problems arise, or are they actively sought out for continuous improvement as part of a normal business processes?
	Performance tracking	Is tracking ad hoc and incomplete, or is performance continually tracked and communicated to all staff?
	Performance review	Is performance reviewed infrequently and only on a success/failure scale, or is performance reviewed continually with an expectation of continuous improvement?
	Performance dialogue	In review/performance conversations, to what extent is the purpose, data, agenda, and follow-up steps (like coaching) clear to all parties?
	Consequence management	To what extent does failure to achieve agreed objectives carry consequences, which can include retraining or reassignment to other jobs?
Target settings	Target balance	Are the goals exclusively financial, or is there a balance of financial and non-financial targets?
	Target interconnection	Are goals based on accounting value, or are they based on shareholder value in a way that works through business units and ultimately is connected to individual performance expectations?
	Target time horizon	Does top management focus mainly on the short term, or does it visualize short-term targets as a "staircase" towards the main focus on long-term goals?
	Targets are stretching	Are goals too easy to achieve, especially for some "sacred cows" areas of the firm, or are goals demanding but attainable for all parts of the firm?
	Performance clarity	Are performance measures ill-defined, poorly understood, and private, or are they well-defined, clearly communicated, and made public?

Talent management	Managing human capital	To what extent are senior managers evaluated and held accountable for attracting, retaining, and developing talent throughout the organization?
	Rewarding high performance	To what extent are people in the firm rewarded equally irrespective of performance level, or is performance clearly related to accountability and rewards?
	Removing poor performers	Are poor performers rarely removed, or are they retrained and/or moved into different roles or out of the company as soon as the weakness is identified?
	Promoting high performers	Are people promoted mainly on the basis of tenure, or does the firm actively identify, develop, and promote its top performers?
	Attracting human capital	Do competitors offer stronger reasons for talented people to join their companies, or does a firm provide a wide range of reasons to encourage talented people to join?
	Retaining human capital	Does the firm do relatively little to retain top talent, or do whatever it takes to retain top talent when they look likely to leave?

Source: worldmanagementsurvey.org

5.2.3 Management practices: intrapreneurship vs. entrepreneurship

At the individual level, individuals are strategic actors who evaluate and select means in view of ends (Cardinale, 2018; Selznick, 1949). The selected means are limited by "individual factors (actors develop views and habits), organizational factors (goals or procedures aimed to achieve an established, value-impregnated status), and societal factors (anyone who acts in society is committed to conducting consistent with social structure and cultural patterns)" (Selznick,1949, 256). However, organizational leaders must actively manage such constraints, they need to set goals, and, through "institutional embodiment of purpose" (1957, 62), design organizations capable of achieving those goals (Selznick, 1957).

In this sense, social structures encompass "recurrent patterns of interaction" or, the mechanism causing them (Martin, 2009). These structures enable or constrain action. Cardinale (2018) refers to "enable" to situations where "structure opens ups the possibilities for actions," while "constrain" refers to a situation where structures restrict the set of possibilities for action) (2018, 137). New institutionalism (DiMaggio, 1998; DiMaggio and Powell, 1983; Meyer and Scott, 1983) shifted the focus from the detailed evaluation of means and ends to practical consciousness, which emphasizes cognitive schemes and taken-for-grantedness. DiMaggio believes that "new institutions arise when organized actors with sufficient resources see an opportunity to realize interests that they value highly" (1988, 14). Here, institutions came to be seen not as affecting the means or ends of agents but, instead,

as shaping the "preconscious understandings that organizational actors share" (DiMaggio, 1988, 3). That structure provides possibilities for action and actively induces actors to pursue some of those possibilities rather than others. Recent work that focuses on micro-foundation of institutional theory (Bjørnskov and Foss, 2016; Cardinale, 2018) conceptualized micro-foundations at an individual level. Accordingly, an actor's previous engagement with structures creates individual-level cognition and actions. This individual-level structure of cognition and actions is the basis for an individual's conceptualization of an institution. However, individuals embedded in the same structures have overlapping individual-level structures of cognition and action. The individual, to some extent, visualizes the different possibilities within the means of end (Harmon et al., 2019) that institutions systematically shape (Bourdieu, 1990). For instance, Schein (2004) suggests that managers can employ many practices to embed the priorities and values they hold in the day-to-day decision-making of their subordinates, which in turn create the climate of the organization. This perspective sees the introduction of new practices as driven by the desire to emulate high-status peers' practices and thereby gain legitimacy (DiMaggio and Powell, 1983; Meyer and Rown, 1997). In this regard, managers across countries collect practices (Abrahamson, 1996) from peers and high-status firms, introducing them to their own. Subsequently, individuals visualize and conceptualize the formal management practices in their communities and may decide the course of action depending on their structure of cognition.

Research has suggested that if firms implement operation management practices (lean manufacturing) effectively, employees would work "smarter, not harder" and experience decreased work-related stress (Cullinane et al., 2013). In this sense, research on lean manufacturing as an integrated set of technical and human practices has concluded that it has the potential to empower workers (Anderson-Connolly et al., 2002; Cullinane et al., 2013; Hernandez-Matias et al., 2020). As a result, firms in countries where these practices are more prevalent could increase workers' motivation and improve their mental processes at work (Kim et al., 2012; Zeng et al., 2015). This attainment should benefit innovation outcomes (Ghobadian et al., 2020; Möldner et al., 2020) as it could develop new entrepreneurial ideas (Cullinane et al., 2013; Möldner et al., 2020). As a management philosophy, lean manufacturing intends to change how people work by giving them more challenging jobs, greater responsibility, and opportunities to work in teams (Covin and Slevin, 1991; Cullinane

et al., 2013; Upadhye et al., 2010). Those are critical factors for developing intrapreneurship (Covin and Miles, 1999). When lean manufacturing is appropriately implemented, it can lead to hidden benefits vital to the firms' success and might be crucial in allocating entrepreneurial talent. The additional benefits of lean manufacturing include reducing the ecological footprint and developing sustainable goals (Bai et al., 2019; Ghobadian et al., 2020; Järvenpää and Lanz, 2020; Kamble et al., 2020). From a reflective individual perspective, individuals value firms in which innovation and sustainability are embedded in the organization. These firms enjoy a favorable public opinion and offer to talented individuals the possibility to learn in a challenging environment, work with autonomy, and develop entrepreneurial behavior. Consequently, individuals are expected to be more likely intrapreneurs than to set up their firms. Based on these explanations, we pose the first hypothesis:

> *Hypothesis 1: The stronger the focus on operation management practices within a country, the more likely individuals will engage in intrapreneurship.*

Management research (Ostroff, 1992; Riggle et al., 2009) has documented employee satisfaction and organizational performance. Performance monitoring may be damaging for employees due to the deterioration of job characteristics necessary for job enrichment, such as autonomy and skill usage essential for intrapreneurship (De Jonge et al., 2000; Parker, 2003). Allowing autonomy and work discretion to the employees will conduct to an intrapreneurial behavior (Kuratko et al., 2005). Consequently, employees with discretion over how to perform their work and those encouraged to engage in experiments are often better at recognizing entrepreneurial opportunities. Research has shown that: "the extent to which an individual perceives that the firm tolerates failure; provides decision-making latitude and freedom from excessive oversight, and delegates authority and responsibility to lower-level managers and workers" (Kuratko et al., 2014, 39). Hence, performance monitoring may play a role in allocating individuals. Firms in countries, which excessively monitor employees are less attractive to reflective individuals who may feel aware of not being able to meet their intrapreneurial ambition. Therefore, individuals are more likely to prefer the independency of creating a venture.

Hypothesis 2: The stronger the focus on performance monitoring practices within a country, the more likely individuals will engage in entrepreneurship.

Firms may use specific target settings to shift employee attention toward innovation (Bandura and Locke, 2003; Locke and Latham, 2002; Nicklin and Williams, 2011). Setting stretch targets may encourage employees to challenge the main conventions and deploy improved skills to perform tasks beyond their core responsibilities (Hamel and Prahalad, 1993; Sitkin et al., 2011). Due to the extreme difficulty and novelty of the challenging goals, it may seem impossible to achieved set goals with current capabilities (Sitkin et al. 2011). Stretch target settings may lead to entrepreneurial behavior by disrupting complacency, promoting new ways of thinking, and instilling persistence when confronted with restraints (Ahmadi et al., 2022; Sitkin et al., 2011). In countries where targeting stretch goals is a regular management practice, employees are pushed outside their comfort zone. This require them to entrepreneurial thinking (Diamond and Argyris, 1987; Doz, 2020). Thus, setting stretch targets may encourage employees to search for novel solutions and increase dedication (Ahmadi et al., 2022; Sitkin et al., 2011). Furthermore, target setting practices may also effectively promote intrapreneurship by motivating individuals who have experienced success due to their perceived self-confidence to perform the task (Nicklin and Williams, 2011; Wood and Bandura, 1989; Bandura, 1991; Rosen et al., 2020)(Nicklin and Williams, 2011; Wood and Bandura, 1989). Finally, the reflective individual may perceive ambitious and innovative firms to be stimulating because their targets heighten expectations of future performance and produce a generally positive effect regarding accomplishing even more challenging goals. Hamel and Prahalad (1993) consider that stretch is a misfit between resources and aspirations. Due to this, firms must leverage (acquire and allocate) resources to meet that aspirations. Therefore, opportunities resulting from stretch and leverage make large organizations a more attractive option for entrepreneurial talent and help retain entrepreneurial talent at the expense of independent entrepreneurship. Overall, we pose our third hypothesis:

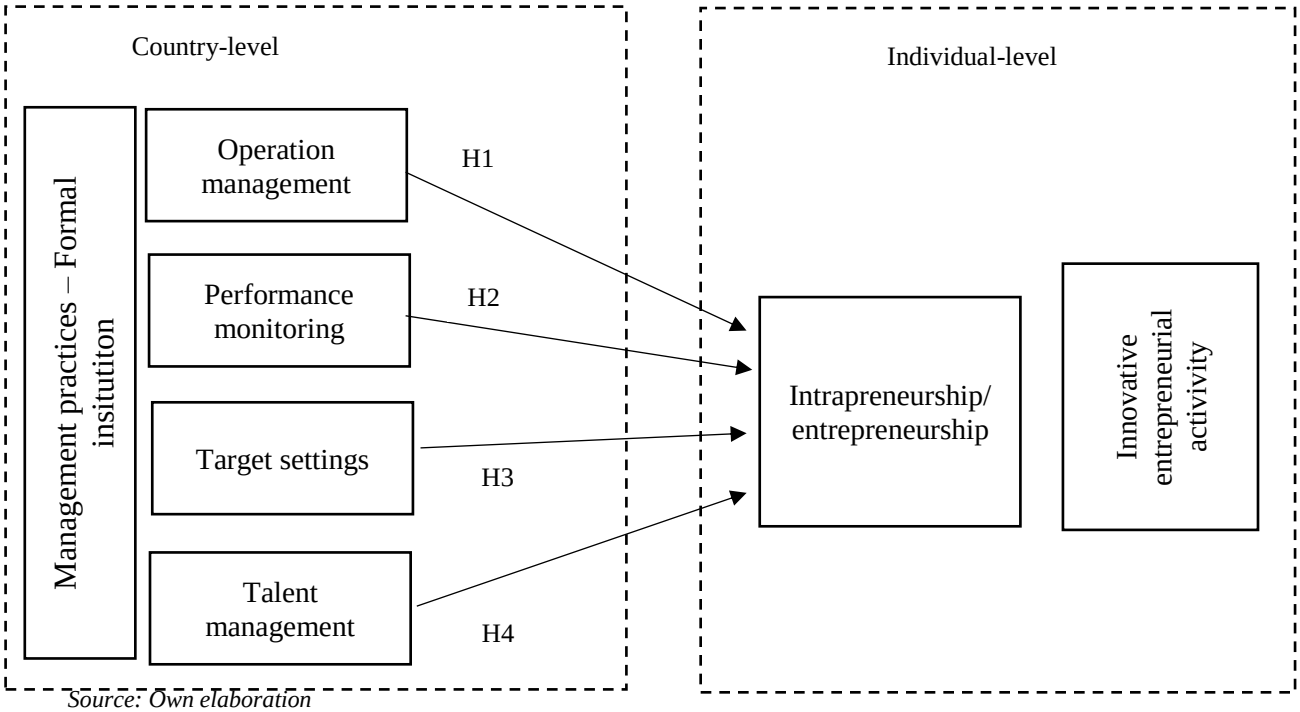
Hypothesis 3: The stronger the focus on target setting practices within a country, the more, the more likely individuals will engage in intrapreneurship.

Several authors have argued that the adoption of talent management practices may lead to achieving a sustained competitive advantage through developing human capital and encouraging employees to engage in entrepreneurial behavior (Castrogiovanni et al., 2011; Litz and Stewart, 2000)**.** Talent management practices have been shown to play a vital role in terms of aiding the allocation of talent within key positions, as well as directly informing the behaviors of talents in key positions (Lewis and Heckman, 2006). The conditions that facilitate intrapreneurship could serve as a basis for formulating business practices, such as professional development and rewards (Neessen et al., 2019; Schmelter et al., 2010). In other words, the purpose of talent management is to establish a clear link between attracting, identifying, and developing talented employees in such a way that there is a clear link with the firm's competitive advantage. In practice, there is often a focus on the top 10% performers as determined by conventional employee performance standards. Intrapreneurs, one the other hand, are more creative individuals who do not necessarily rank amongst the top performers according to conventional employee performance standards. If we subscribe to a reflective individual, this individual is likely to be aware of the discrepancies between their talents/ambitions and those that valued within companies with a strong focus on talent management. Knowing that their chances to be recognized as top performers is hampered by their intrapreneurial ambitions, the individual is then expected to be more likely to seek self-employment and to set up an independent venture. Consequently, we pose the following hypothesis:

> *Hypothesis 4: The stronger the focus on talent management practices within a country, the more likely individuals will engage in intrapreneurship.*

Finally, we summarize this literature review in Figure 5.1. This figure describes the proposed model on the mode of opportunity exploitation (intrapreneurship vs entrepreneurship) over countries.

Figure 5.1. Proposed model



Source: Own elaboration

5.3 Methodology

5.3.1 Data

We test the hypotheses about how managerial practices affect the type of opportunity exploitation using a sample of 201,267 individuals across 20 countries (See in Table 5.2). The primary data source for this study is the Global Entrepreneurship Monitor, an annual large-scale international assessment of entrepreneurial behavior and attitudes of the individuals. The GEM research project employs the adult population survey (APS), which collects information from adult individuals and measures attitudes toward entrepreneurship in the general population. Our individual-level data from 2016 include data from more than 200,000 individuals in 65 countries.

We measure management practices using the 18 questions from the World Management Survey (WMS). Each of the 18 questions captures variation in management practices, with firms being ranked from better to worse in each dimension (from 1 = worst to 5 = best). A

high score represents that most organizations in a country have adopted the best practice. (Bloom et al., 2010; Genakos, 2018). We use the average country-level management practice score to measure the international pattern from 11,000 firms interviewed from 2006 to 2014. A high score indicates a best practice because a firm that adopts the practice will, on average, increase its productivity (Bloom et al., 2010; Genakos, 2018). Merging the data sets from the two different sets of information comprises a sample of 201,267 individuals, the entrepreneurial context assessment, and the country-level managerial practices score from each of the 20 countries (measured in 20/65 countries).

5.3.2 Variables

Dependent variable. GEM distinguishes between the two modes of entrepreneurial activity. First, Total Early-stage Entrepreneurial Activity (TEA) measures the prevalence of overall early entrepreneurship in the adult population. This includes entrepreneurs driven by necessity and opportunity. Scholars have employed TEA driven by opportunity as an approach for innovative entrepreneurial activity (Aparicio et al., 2016; Urbano et al., 2016; Reynolds et al., 2005; Peris-Ortiz, 2018). Opportunity TEA is considered the net result of individual decisions to pursue entrepreneurial initiatives based on knowledge and is associated with innovation. It "defines a different characteristic in each country in terms of the innovation process" (Aparicio et al., 2016, 7). Peris-Ortiz (2018) also finds a positive relationship between the TEA and the capacity for innovation. According to Audretsch et al. (2008), entrepreneurs take knowledge-based opportunities and create new products or services. Wong et al. (2005) suggest that the opportunity TEA rates reflect knowledge and technology creation and could positively impact economic growth. The percentage of early-stage entrepreneurs with novel product market combinations) is also employed to measure innovative entrepreneurship (Marcotte, 2013; Liebregts, 2018).

Additionally, GEM also measures Entrepreneurial Employee Activity (EEA). The EEA rate measures the prevalence of employees who have been in, the past three years active in the development of new business for the employer, an effort that is part of their regular work (Bosma et al., 2012). GEM identified entrepreneurial employees as innovative, considering that they are involved in developing new activities and projects that relate to creating new

products and services or entering new markets (Liebregts, 2018; Bosma et al., 2010). Thus, the term intrapreneurship has been linked to innovation. Both are similar because "they involve the combination of resources for the creation of something new and the intent of both is generate profits" (Lumpkin, 2014, 237). However, recent studies argue that EEA does not distinguish between opportunity and necessity motives (Elert and Stenkula, 2020) and call for more data regarding differentiating productive and unproductive intrapreneurship. We use GEM data from 2016 to create measures for entrepreneurship (TEAopp=0) and intrapreneurship (EEA=1). Both measures, entrepreneurship and intrapreneurship, build the part of the population that is part of innovative entrepreneurial activity. The mentioned measures have been used in previous research (Bosma et al., 2011; Martiarena, 2013; Turro et al., 2013).

Independent variables. The World Management Survey collects firm-level management data across many countries in the manufacturing sector (Bloom and Van Reenen, 2007). Firms in the survey were scored from 1 to 5 on a grid. As mentioned, the survey questions are grouped into four broad categories: Operation management (two questions), performance monitoring (five questions), target settings (five questions), and talent management (six questions). Then, data is aggregated at a county level; therefore, we used the average country-level management practices score (Aycan et al., 2000; Ollo-López et al., 2011; Floyd, 1999; Waldman et al., 2012).

Control variables. we select individual-level variables from the GEM survey and include age, gender, educational level, household size, and household income (Boudreaux et al., 2019; Parker, 2011). Household size and household income serve as exclusion restrictions (Liebregts, 2018), and we only include them in the selection equation. We depict the descriptions of these variables in Table 5.2.

Table 5.2. Description of variables

Variable	Description	Source
Dependent Variable		
Intrapreneurship/Entrepreneurship=I	Binary variable that takes the value one if an individual is involved in intrapreneurship, and zero if an individual is involved in entrepreneurship, conditional on being involved in innovative entrepreneurial activity', Yes=1, No= 0	GEM 2016
Independent Variables		
Operation management practices	Variable that measures how firms include the major aspects of lean manufacturing. Score from 1 (worst practice) to 5 (best practice)	WMS 2014
Performance monitoring practices	Variable that measures how well firms monitor what goes on inside the firm and how well they use this information for continuous improvement. Score from 1 (worst practice) to 5 (best practice).	WMS 2014
Target settings practices	Variable that measures whether firms set the right targets, track the right outcomes, and take the appropriate actions when the two are inconsistent. Score from 1 (worst practice) to 5 (best practice)	WMS 2014
Talent management practices	Variable that measures how firms promote and reward employees based on performance, making every effort to keep top performers and attract new talents from the labor market. Score from 1 (worst practice) to 5 (best practice)	WMS 2014
Control Variables		
Age	Age gathered randomly from APS	GEM 2016
Gender	Male=1, Female = 0	GEM 2016
Education	The individual has completed secondary school. Yes =1, No=0	GEM 2016
GDP	Gross domestic product in parity purchasing power	The World Bank Database
R&D transfer	National Expert Survey. Score from 1 to 9.	GEM 2016
Government policies general	National Expert Survey. Score from 1 to 9.	GEM 2016
Government concrete policies, priority and support	National Expert Survey. Score from 1 to 9.	GEM 2016
Government programs	National Expert Survey. Score from 1 to 9.	GEM 2016
Entrepreneurial level of education at Vocational, Prof	National Expert Survey. Score from 1 to 9.	GEM 2016

Our country-level controls include the natural logarithm of countries' Gross domestic product and two variables. Additionally, this study employs information from the National Expert Survey (NES), which collects data from 36 experts in each GEM country, allowing the measurement of different key entrepreneurial frameworks (Reynolds et al., 2002), such as variables related to the formal institutional environment for entrepreneurship (Government policies, government programs for entrepreneurship, assessment of the Entrepreneurial level of education) (Hechavarría and Ingram, 2019).

5.4 Results

5.4.1 Descriptive statistics

Our sample shows that almost 33 percent of the entire sample (N = 201,267) is involved in the development of innovative entrepreneurial activity (N = 67.340). Approximately 16 percent is active as an intrapreneur (N = 32,991). Around 17 percent can be regarded as entrepreneurs (N = 34,349).

Moreover, the GEM data indicate that, among the 20 countries in our sample[2], entrepreneurship is most prevalent in Colombia (18.2 percent), Chile (15.9 percent), Canada (12.3 percent), and the United States (10.6). In contrast, Germany (18.3 percent), Australia (13.1), Canada (12.7), and the United States (12.6) have the highest shares of intrapreneurs in the adult population. Also, France exhibits the lowest share of entrepreneurs (0.3 percent), and Argentina has the lowest percentage of intrapreneurs (0.2 percent). Exists a positive and significant relationship between entrepreneurs and intrapreneurs (Pearson's correlation coefficient is 0.0585).

The World Management Practices scores for each of the 20 countries in our sample show that the United States has the best management practices (3.24), with Sweden scoring 3.19, Germany scoring 3.19, and Australia scoring 3.03. India, Colombia, Brazil, and Poland have

[2] Our sample includes the following 20 countries (in alphabetical order): Argentina, Australia, Brazil, Canada, Chile, China, Colombia, France, Germany, Greece, India, Italy, Mexico, Poland, Portugal, Spain, Sweden, Turkey, United Kingdom, United States.

the lowest management practices scores, with 2.44, 2.53, 2.2, and 2.8. The United States exhibits higher scores in operation management, target setting practices, and talent management regarding each practice. Sweden shows the highest score of performance monitoring practices. Table 5.3 shows the descriptive statistics of the variables.

5.4.2 Model estimation

The maximum-likelihood probit model with sample selection (Van de Ven et al., 1981) is the method employed to test the hypotheses. This study controls for selection bias using Heckman's (1979) two-stage sample selection model to correct for non-random self-selection of individuals to innovative entrepreneurial activity. The two-stage approach determines as its first stage, whether or not an observation in an overall population appears in its final representative sample. Its second stage models the relationship between the dependent and independent variables in the final sample (Wooldridge, 2010). This method has been used by researchers in strategic management (Certo et al., 2016) and entrepreneurship fields (Bendig and Hoke, 2022; Darnihamedani and Block, 2022; Colombo et al., 2022). Heckman's method allows us to research the management practices that determine individuals' preferences for entrepreneurship or intrapreneurship, conditional on their involvement in innovative entrepreneurial activity. The probit equation calculates the first and the selection equation calculates the latter.

The selection equation should contain at least one independent variable that is not added to the probit equation (Millimet and Tchernis, 2013; Bendig and Hoke, 2022). We follow Liebregts' (2018) identification strategy to select household size and household income (extracted from GEM) as exclusion restriction variables in the first stage of the estimation procedure. Accordingly, household size and household income have ambiguous effects on individuals' involvement in entrepreneurial activity (Aldrich and Cliff, 2003; Parker, 2011; Lim, et al, 2016; Liebregts, 2018). These variables are associated with an individual's responsibility for the welfare of their household, and these responsibilities may increase fear of failure and reduce time-consuming occupational options which "could damage their ability to discharge their responsibilities effectively. That in turn is likely to reduce the attractiveness

of starting up a venture, which is associated with high levels of risk, and which often entails heavy time commitments" (Parker, 2011, 27). As proposed by Parker, other factors like household size could be associated with access to greater resources, which is positive in creating new ventures. Hence, the main point is that both variables affect the probability of individuals' involvement in any entrepreneurial activity and are unrelated to an individual's decision between entrepreneurship and intrapreneurship (Parker, 2011; Liebregts, 2018).

Table 5.3. Descriptive statistics

Country	Entrepreneurship (opportunity)	Intrapreneurship	Age	Gender	Education	GDP	Operation	Monitorimg	Target settings	Talent management
Argentina	0.06	0.03	42.23	42.23	0.57	931.39	2.80	2.99	2.54	2.51
Australia	0.09	0.13	47.25	47.25	0.73	1,116.74	3.13	3.27	2.99	2.73
Brazil	0.11	0.03	38.13	38.13	0.39	3,198.39	2.38	3.03	2.59	2.50
Canada	0.12	0.13	46.50	46.50	0.81	1,635.27	3.12	3.52	3.04	2.92
Chile	0.16	0.07	44.09	44.09	0.64	423.35	2.69	2.99	2.56	2.59
China	0.06	0.04	43.28	43.28	0.52	19,410.89	2.54	2.75	2.55	2.67
Colombia	0.18	0.04	38.16	38.16	0.60	665.36	2.24	2.86	2.56	2.47
France	0.03	0.08	49.26	49.26	0.77	2,653.73	3.01	3.43	2.93	2.69
Germany	0.04	0.18	43.02	43.02	0.67	3,850.42	3.14	3.51	3.14	2.94
Greece	0.04	0.03	39.47	39.47	0.62	286.55	2.93	2.90	2.56	2.55
India	0.06	0.03	35.76	35.76	0.44	8,043.02	1.99	2.74	2.52	2.54
Italy	0.03	0.11	43.45	43.45	0.38	2,177.36	2.97	3.26	2.92	2.70
Mexico	0.09	0.04	37.49	37.49	0.39	2,183.92	2.74	3.26	2.72	2.76
Poland	0.06	0.07	42.39	42.39	0.44	1,021.36	2.41	3.11	2.92	2.80
Portugal	0.06	0.06	41.83	41.83	0.62	280.36	2.73	3.12	2.69	2.55
Spain	0.04	0.04	43.01	43.01	0.57	1,623.66	2.84	3.11	2.65	2.50
Sweden	0.05	0.12	48.91	48.91	0.65	473.30	3.21	3.58	3.16	2.81
Turkey	0.12	0.08	36.73	36.73	0.56	754.52	2.78	2.87	2.53	2.69
United Kingdom	0.05	0.09	47.21	47.21	0.62	2,666.84	2.90	3.30	2.94	2.82
United States	0.11	0.13	44.82	44.82	0.85	17,983.14	3.25	3.52	3.19	3.18

Following Liebregts (2018), we apply the following procedure to include the predictors of sample selection (household size and household income) and to assess their appropriateness as exclusion restrictions. First, as suggested, we include household size with two categories, then the three categories household income; both exclusion variables may jointly induce a statistically significant improvement to fit the model. In our case, the likelihood ratio test rejected the null hypothesis stating that the coefficients of the added variables are simultaneously equal to zero ($\chi^2 = 211$). Therefore, these exclusion variables are also appropriate to our model.

To test if the individual's decision to engage in innovative entrepreneurial activity is independent of an individual's choice for intrapreneurship or entrepreneurship, we hypothesize that the model with the sample selection model fits better than the individual simple equation probit. Accordingly, if $\rho = 0$, the joint log-likelihood is just the sum of the two log-likelihoods of both equations. In our models, the log-likelihood test rejected the null hypothesis; hence sample selection model represents an improved fit to explain our model. Additionally, our predictors seem to have much explanatory value as the Wald test shows a significant overall model (Wald test=2,921.46). That means that management practices are relevant in explaining an individual's decision to become either an intrapreneur or entrepreneur.

We present the main results of our analysis in Table 5.4. Our model contains a sample of 201,267 individuals from 20 countries with a prevalence of intrapreneurship or entrepreneurship. The sample selection reduces the number to 27,447 individuals involved in intrapreneurship or entrepreneurship. The parameter for the sample selection (rho) is negative and highly significant, evidencing the presence of sample selectivity. Our empirical analysis supports Hypotheses 1 to 3; the three management practices are highly statistically related to intrapreneurship (or entrepreneurship) and in the hypothesized directions. Therefore, Hypothesis 4 is not supported. Counterintuitively, our empirical work suggests that talent management significantly improves the likelihood of the individual choice of entrepreneurship.

Countries focusing on operation management practices (lean manufacturing) are more likely to generate intrapreneurs than entrepreneurs (marginal effect: 0.06). Individuals in countries

with a prevalence of performance monitoring have a higher probability of selecting entrepreneurship (marginal effect: - 0.53). Similarly, individuals in countries focusing on target settings are more likely to become intrapreneurs rather than entrepreneurs (marginal effect: 0.60). Conversely, in countries with a prevalence of talent management practices, people are likely to choose entrepreneurship (marginal effect: - 0.14). For instance, a one-unit increase on the WMS scale of operations management practices leads to an average increase in the probability of being an intrapreneur by six percentage points. In a country with a relatively low score of operations management practices, such as Mexico (2.74), an increase in the score will increase the likelihood of individuals selecting intrapreneurship.

Table 5.4. Model estimation

Variables	**Model 1**		
	Dep var: *I* (second stage)		
	Coeff	**Std error**	**Signif**
Constant	-3.222	0.344	***
Age:	0.008	0.000	***
Gender:			
- Male	-0.066	0.016	
Education:			
- Secondary school	0.028	0.019	***
Log GDP per capita	0.143	0.039	***
R&D transfer	0.486	0.046	***
Government policies general	-0.186	0.037	***
Government policies for entrepreneurship	-0.165	0.037	***
Government programs	0.204	0.042	***
Entrepreneurial education	-0.080	0.036	***
Operations management* H1	0.254	0.058	***
Performance monitoring* H2	-1.398	0.121	***
Target settings* H3	2.428	0.149	***
Talent management H4	-0.939	0.09	***
select			
Household size	0.021	0.008	***
Household income	0.000	0.000	***
Age	-0.011	0.000	***
Gender	0.236	0.007	***
Education	0.215	0.007	***
Log GDP per capita	-0.119	0.016	***
R&D transfer	-0.544	0.018	***
Government policies general	-0.075	0.014	***
Government policies for entrepreneurship	0.233	0.011	***
Government programs	0.147	0.014	***
Entrepreneurial education	0.014	0.015	

Operation management	0.1447035	0.0302345	***
Performance monitoring	0.4073514	0.0604087	***
Target settings	0.0521262	0.073792	
Talent management	0.158533	0.05327	***
Number of countries		20	
Number of observations		201,267	
Censored observations		173,820	
Uncensored observations		27,447	
Log pseudolikelihood		-90,694	
Wald test (indep. eqs.)		2,921 ***	
/athrho		-0.7264837	0.0491593
rho		-0.6209094	

5.5 Discussion

In the following paragraphs, we discuss the contributions to research and the policy implications. Institutional economics theory emphasizes that once the individual discovers the opportunity, he decides how it can be exploited, depending on the institutional environment and the pre-reflective engagement structures (Cardinale, 2018). We investigate how country-level differences in management affect the mode of opportunity exploitation by individuals. Specifically, we posit that some management practices increase the likelihood that individuals become involved in intrapreneurship vis-á-vis entrepreneurship.

This link between management practices and the mode of opportunity exploitation by individuals has not been studied extensively within international comparative research. By combining several data sources, we can show how this "missing link" affects the allocation of entrepreneurial talent over intrapreneurship and entrepreneurship, and provide an alternative explanation as to why some countries are more intrapreneurial than others. This observation is noteworthy concerning two elements. First, the promotion of intrapreneurship is relevant for economic development. The wealthiest and most innovative countries are more exposed to intrapreneurship than their counterparts (Bosma et al., 2013). Second, the literature has not shown sufficient evidence that it is better to exploit opportunities in one way or another. Literature has evidenced the relevance of entrepreneurship for economic

development and employment (Urbano and Aparicio, 2016). However, we cannot state whether intrapreneurship or entrepreneurship contribute more significantly.

In summary with this study, we make two main contributions. First, we contribute to comparative entrepreneurship research (Terjesen et al., 2016) by explaining how the international patterns of management practices may be associated with the decision of an individual to select the entrepreneurship mode of opportunity exploitation, either entrepreneurship or intrapreneurship. We offer a novel approach and test hypotheses on how specific management practices may affect this allocation, and also an empirical support for these concepts. Consequently, we provide relevant insights into the relationship between operation management, performance monitoring, target setting, talent management practices, and entrepreneurial activity. Our findings confirm that prevalent management practices across countries have substantial effects on the decision of reflective individuals to choose intrapreneurship or entrepreneurship. This is relevant because country-level management practices can help to allocate more efficiently the entrepreneurial talent between new or established firms. Counterintuitively, our results indicate that the focus on talent management practices within a country increases the likelihood of entrepreneurship over intrapreneurship. Factors like strong employment legislation (Román et al., 2011) or limited labor market dynamics (Failla et al., 2017) could promote the decision for entrepreneurship. Countries with strong employment legislation produce greater friction in the labor market, lowering the probability of employers developing practices to attract employees and increasing the likelihood of contracting self-employed labor (Liebregts and Stam, 2019). strong employment protection legislation may affect the allocation of talent. Strong legislation causes firms to contract out more work, relying less on intrapreneurship (Román et al., 2011). Alternatively, it may increase the opportunity costs of leaving employment if self-employment is pursued (Liebregts and Stam, 2019). Talent management practices may focus mainly on retention, and attracting talented job applicants as a critical human resource task, significantly affecting talent allocation in firms (Hauswald et al., 2016). Firms are including more effective and highly attractive reward packages that attract intrapreneurs. However, financial rewards are no longer enough to attract talent and motivate or retain employees. Organizations offer non-financial rewards that may most effectively harness top talent (Schlechter et al., 2015). Second, our results bring about some relevant

implications for policymakers by providing a deeper understanding of the extent to which specific managerial practices affect entrepreneurial activity in countries. We provide indicators of four established management practices associated with national productivity (Bloom et al., 2010). Hence, we explain how countries can foster patterns of management practices to encourage innovative entrepreneurship or intrapreneurship among countries. Consequently, countries may have different management practices that favor one type of entrepreneurial activity over another. We emphasize that the number of intrapreneurs and their contributions to economic performance should not be overlooked. Entrepreneurship policies usually focus on new business creation, ignoring the emergence of intrapreneurship. Our results show the relevance of developing policies that encourage and foster innovative entrepreneurial activities. We have shown that the conditions to support the development of intrapreneurship or entrepreneurship may be different. Thus, understanding the main configuration of country-level management practices helps the government design valid policies to develop innovative entrepreneurial activity (Baumol, 1990), whether inside or outside the boundaries of established firms. We consider that the level of economic development positively affects the presence of larger firms, which positively affects the prevalence of intrapreneurship (Bosma et al., 2013; Parker, 2011). Therefore, countries could design policies aimed at supporting the growth of firms. In this regard, the literature encompasses two aspects. First, the entrepreneurial judgment refers to the cognitive aspects of distinguishing potential new resource combinations and exchanges. Second, management capability has the ability to execute them (Ghoshal et al., 1999). Therefore, fostering the interplay of these two factors affects the speed at which firms grow and expand their operations and the process through which firms create value for society.

5.6 Conclusion

Employing information from 20 countries, extracted from GEM and the World Management Survey, and a probit model with sample selection. This study determines to what extent a country's management practices enhance entrepreneurial behavior in its population. Our study shows theoretically and empirically the effects of four management practices

(operation management, performance monitoring, target settings, and talent management) on the allocation of entrepreneurial talent over intrapreneurship and entrepreneurship in different countries.

Finally, we recognize some limitations and suggest future research lines. First, this article aims at studying entrepreneurship within firms in developing economies, so our findings in this chapter may have limited ability to explain the general effect of management practices in these countries. WMS investigates management practices in manufacturing firms in a limited set of countries. Therefore, further research should employ additional data and test the results in a sample involving a higher number of countries (both in developed and developing countries) and other industries and firms. Second, we used the available data on management practices collected in 2011 and 2014. Empirical design using cross-sectional data may lead to different causal interpretations. Therefore, it will be more complete to perform a longitudinal time-series study. Third, in our research, we have not tested several other factors that may be relevant to understanding the allocation of talent over intrapreneurship and entrepreneurship. Therefore, future researchers may consider additional factors. For instance, intrapreneurs face society's rules, and firm-level factors often interact with society's institutions to shape entrepreneurial incentives (Elert and Stenkula, 2020; Mahoney and Thelen, 2010). Fourth, our dependent variable includes opportunity entrepreneurship (TEAopp) and EEA extracted from GEM. Scholars have employed TEA by opportunity reason as an indicator of innovative entrepreneurship (Aparicio et al., 2016, Reynolds, 2005). Others indicated innovative entrepreneurship as the measure of the number of products and services that are considered new by entrepreneurs (Liebregts, 2018, Marcotte, 2013). Due to our sample limitations, we could not employ this measure for innovative entrepreneurship. Further research should include more indicators of innovative entrepreneurship, including the indicator for the performance of the intrapreneurial activity, whether it is productive or non-productive (Elert and Stenkula, 2020). Finally, deepening into these configurations of management practices related to other leading indicators of country-level competitiveness (productivity, culture, the performance of firms, and economic growth) provide new avenues for future research. This arrangement might provide more accurate information to improve public and business policy alternatives.

Chapter 6

Entrepreneurial context and Intrapreneurship in Latin America

6. Entrepreneurial context and intrapreneurship in Latin America

6.1 Introduction

Throughout this thesis, we have shown the multifaceted concept of institutions. This investigation focuses on institutions that influence entrepreneurship within firms through different formal and informal institutions, including their interplay and the mediation of dynamic capabilities. In the previous chapter, this thesis analyzed the role of management practices in the allocation of individuals between intrapreneurship and entrepreneurship across countries. Like any other individuals, intrapreneurs and firms are influenced by the institutional context in which they operate, and their strategies will reflect the opportunities and limitations defined by this context (Baumol, 1996; Sobel, 2008). Following this argument, Baumol (1996) explains that institutions may influence individual efforts between different types of entrepreneurial activities that conduces to productive and unproductive entrepreneurship. Accordingly, the literature in entrepreneurship consider that the institutional context is relevant in enhancing entrepreneurial ecosystems (Stam, 2015; Stam and Van de Ven, 2021). The entrepreneurial ecosystem play a crucial role in enabling productive entrepreneurship in a given geography (Hermans et al., 2015; Theodoraki et al., 2022; Theodoraki and Messeghem, 2017). The underlying formal and informal institutional factors are associated with high levels of innovative entrepreneurship (Ács et al., 2014). According to the Global Entrepreneurship Monitor project, some of the formal and informal factors that affect entrepreneurial activities are access to finance, government support and policies, specific government programs aimed at promoting entrepreneurship, entrepreneurial education, R&D transfer practices, professional and commercial infrastructure, market dynamics, easiness to start a business, intellectual protection, and regional and national culture (Reynolds et al., 2005). The interaction of these factors creates the institutional environment for an entrepreneurial society (Hechavarría and Ingram, 2019; Stam and Van de Ven, 2021).

However, these institutional factors are not fully considered in the literature on intrapreneurship. Notably, this omission is relevant because the mechanisms in which entrepreneurial activities are shaped in firms are different from independent

entrepreneurship. Specifically, countries' formal institutions affect firms' flexibility, uncertainty, appropriability, access to resources, and the ability to manage the entrepreneurial initiative (Vanacker et al., 2021).

There are other limitations in the literature of entrepreneurial ecosystems. First, the literature on the entrepreneurial ecosystem mainly focuses on understanding the dynamics of high-growth startups or scale-ups as an essential source for innovation, productivity growth, and employment (Mason et al., 2014; Shane, 2009; Stam et al., 2011). This approach seems too exclusive, intrapreneurship can also be a form of productive entrepreneurship (Baumol, 1993; Elert and Stenkula, 2020; Stam and van de Ven, 2021), and it merits further study because employees are essential to firms' growth. Second, several researchers have focused on how a rich entrepreneurial ecosystem enables entrepreneurship and creates value at the regional level (Cooke et al., 1997), the city level (Isenberg and Onyemah, 2016), and other bigger scopes. Different studies conclude that intrapreneurs seem to be more prevalent in developed countries than in developing countries (Bosma et al., 2013). Some developing countries, such as Israel, S. Korea, and Singapore, have experienced a notable transformation in innovation, economic growth, and institutional development in the last few years. Simultaneously, Latin America has been exposed to much lower levels of development (Blejer, 2006). While Latin America has progressed in institutions, infrastructure, democracy, property rights, and macroeconomic stability, the region still lags in critical areas such as education, knowledge creation, and economic reform. Therefore, the region has been less successful in improving its economic performance than other developing countries (Acs and Amorós, 2008). As a result, entrepreneurial activities cannot grow at sustainable rates (Blejer, 2006). More research on how the entrepreneurial ecosystem affects employee motivation to engage in entrepreneurial behavior is needed from a regional perspective. Our study enhances our understanding of the formal entrepreneurial context over intrapreneurship in Latin America as a vital factor in increasing the region's innovation and economic development. Hence, the objective of this chapter is to analyze the extent to which the formal entrepreneurial context conditions intrapreneurship in Latin America.

Although multiple formal (and informal) institutions could shape intrapreneurship in Latin America. We focus on the financial environment, the government policies and programs, entrepreneurial education, R&D transfer, and the market dynamics. We chose these formal

institutions for multiple reasons. First, the entrepreneurial ecosystems consist of a variety of different stakeholders or supporting programs including those backed by governments, universities, financial sector and private bodies. Each actor possesses different or related goals and functions, so the governance mechanisms for improving need to be concerted (Spigel, 2016). Second, developing countries experiment with a high rate of environmental unpredictability, change, and uncertainty (Dess and Beard, 1984), allowing firms and entrepreneurs to earn profits by competing with uncertainty (Shinkle and McCann, 2014, Puente et al., 2017). In this way, the mentioned formal institutions affect the main processes and resources that shape the strength and the potential competitive advantages that result from intrapreneurship in Latin America. Third, the theoretical focus emphasizes such critical institutions; however, we control for other formal and informal institutions. For this multilevel analysis, we use a probit model with sample selection technique and data from the Global Entrepreneurship Monitor (GEM) 2016 –2018.

We organize this chapter as follows. The next section reviews the literature on the entrepreneurial context and ecosystem and develops the study's hypotheses. Following that, we will focus on detailing the methodology of the study. The next part presents the main findings of this study. The following section discusses and positions the findings in the existing literature. Lastly, we provide our conclusions and outline some limitations and future avenues of research.

6.2 Conceptual framework

6.2.1 Entrepreneurial context and ecosystem

As explained in Chapter 1, institutional economics considers that effective economic, political, and legal incentive structures channel efforts into productive entrepreneurship (Hechavarría and Ingram, 2019; Sobel, 2008). Reynolds et al. (2005) focused on the Entrepreneurial Framework Conditions (EFC) component of the GEM business ecosystem model. This subset of the model captures the formal and informal institutional conditions (North, 1991) that enable or constrain productive entrepreneurship. It measures the distinct

needs, or incentive structures, in which productive entrepreneurship (Baumol, 1990) can prosper. Consequently, the EFCs capture the entrepreneurial ecosystems of countries and should also influence the prevalent rates of intrapreneurship. In other words, the entrepreneurial ecosystem is the interaction of systemic conditions and framework conditions (Cavallo et al., 2019).

The entrepreneurial ecosystem literature is relatively novel. This perspective has grown during the last few years (Stam, 2015; Stam and Van de Ven, 2021; Theodoraki et al., 2022). Stam (2015) proposed two components to analyze the concept of the entrepreneurial ecosystem. The first one is *entrepreneurial* and refers to entrepreneurship, a process in which opportunities for creating new goods and services are explored, evaluated, and exploited (Shane and Venkataraman, 2000). Following Schumpeter (1934), entrepreneurship involves how individuals exploit opportunities for innovation. The entrepreneurial ecosystem approach typically narrows this entrepreneurship down to high-growth startups as an essential source of innovation, productivity growth, and employment (Mason et al. 2014; Shane, 2009; Stam et al., 201). Other forms of productive entrepreneurship, such as intrapreneurship and growth-oriented entrepreneurship innovative startups, are also part of the analysis (Baumol, 1990). A relevant aspect of the literature is that the entrepreneurial ecosystem approach excludes traditional entrepreneurship, such as self-employment or small businesses, into entrepreneurship (Henrekson and Sanandaji, 2014; Shane, 2009).

The second component of the term is the biological interpretation of *ecosystem* as "the interaction of living organisms with their physical environment at the center" (Stam, 2015, 1716). This physical environment refers to the entrepreneurial ecosystem concept where entrepreneurship occurs and involves a community of interdependent actors. Remarkably, the literature in the field Isenberg (2010) emphasizes the role of the context in allowing or hindering entrepreneurship. This role is closely connected to other approaches to bridge innovation and entrepreneurship studies (Ács et al., 2014; Levie, 2017; Sternberg, 2007). Furthermore, the entrepreneurial ecosystem approach begins with the entrepreneurial individual instead of the firm, emphasizing the role of the entrepreneurial context (Stam and Van de Ven, 2021). Van de Ven (1993) elaborated on infrastructure components for a flourishing ecosystem. Feld (2012) emphasized the players' interaction in the ecosystem and access to all kinds of relevant resources with an enabling role of government in the

background. Isenberg (2010) framed six distinct domains of an ecosystem: policy, finance, culture, support, human capital, and markets. Thus, entrepreneurship is a collective action that requires key roles from numerous actors in the public and private sector in order to develop an industrial infrastructure that facilitates and constrains innovation (Van de Ven, 1993).

6.2.2 Formal institutions and intrapreneurship

Employees are one of the most critical sources of entrepreneurship and innovation. While some employees leave, others stay to develop their innovations internally as intrapreneurs (Hellmann, 2007). Other firms support their employees' innovations to found spinouts (Kuratko and Audretsch, 2013; Makarevich, 2017). Literature in finance has often focused on the implementation and commercialization of promising ideas from employees to produce different transformational effects inside the firm. (Selig et al., 2019). Other research has evidenced the relevance of external corporate venture to meet innovative project needs (Enkel and Sagmeister, 2020) and also governmental venture capital for the same purposes (Colombo et al., 2016). Financing intrapreneurship projects has also been the focus of researchers interested in regions. Lee et al. (2015) evidenced a positive relationship between corporate venture capital (CVC) investment and the level of knowledge transferred from the startups to firms. Albis et al. (2021) found the relevance of Colombian public funds in providing incentives to invest in R&D activities and high-tech firms. Public funds positively affect the learning process and firms' competitiveness, which ultimately enhances intrapreneurship in firms. Therefore, financial support is critical for employees engaged in entrepreneurial behavior. Consequently, we pose the following hypothesis:

> *Hypothesis 1: In Latin America, the prevalence of intrapreneurship is positively associated with the financial environment supporting entrepreneurship.*

The quality of government is an essential factor determining the level of intrapreneurship in a country. First, some research stated the importance of government impartiality for entrepreneurial activity (Ljunge and Stenkula, 2021; Nistotskaya et al., 2014). Entrepreneurial activities often require costly asset-specific investments and complex

transactions. Policies aimed at lower regulations facilitate estimating expected returns on investments, and reduce the uncertainty in economic activities. Second, governments have implemented policies to support firm innovations derived from intrapreneurs. These policies range from direct subsidies, tax cuts, working capital grants, business training, and counseling services (Autio et al., 2007; Keuschnigg and Nielsen, 2004; Mukherjee et al., 2017). Third, promoting intrapreneurs can be as important as be stimulating independent entrepreneurs, which is often the principal focus of current national policies (Ljunge and Stenkula, 2021). Research suggests that intrapreneurs can be as important as independent entrepreneurs regarding innovation activity, employment, and economic growth (Stam, 2013). The literature proposes that policies to encourage entrepreneurship may consider the micro-level heterogeneity among individuals based on their knowledge context (Agarwal and Shah, 2014). In a developing country context, government programs are an alternative source of support as economic agents lack financial and labor resources compared to entrepreneurs operating in developed countries. Thus, policies promoting intrapreneurship may be specific (Klofsten et al., 2021). To deploy government policies, policymakers should identify important antecedents to intrapreneurship, including job design (de Jong et al., 2015), the work context (Rigtering and Weitzel, 2013), management practices (Bloom and Van Reenen, 2007), taxation (Focanti et al., 2016; Vokoun and Daza Aramayo, 2017) and other environmental factors. Some researchers have found that in Latin America entrepreneurs were able to capitalize on proactive government policies supporting innovation in key areas, but they described bureaucratic impediments from regional and national officials that hindered business actions (Acs et al., 2014).

Similarly, legal systems with friendlier bankruptcy laws positively affect entrepreneurial entry at the national level (Lee et al., 2011). According to White (2001), the bankruptcy law system impacts firms when the bankruptcy code is creditor friendly; excessive liquidation cause levered firms to avoid innovation affecting entrepreneurial behavior. In contrast, a debtor-friendly code induces a more significant innovation by promoting continuation upon failure (Acharya and Subramanian, 2009; Prusak et al., 2022). Researchers have found that the Latin American region is governed by a set of laws that is inefficient even when compared with similar regions (Araujo et al., 2005; Agénor and Pereira da Silva, 2010). Because of these arguments, we propose the following hypothesis:

Hypothesis 2: In Latin America, the prevalence of intrapreneurship is positively associated with the government policy supporting entrepreneurship.

Government support for entrepreneurship and innovation is provided through many local, regional, and national programs. Essentially, local governments are actively designing and delivering programs to promote entrepreneurship and innovation since market failures create bias against firms (Buffart et al., 2020). Policymakers focus on fostering innovative firms that bring new products, services, and technologies to the market through novel business models and practices (Aldrich and Ruef, 2018; Rubera and Kirca, 2012). Supporting programs motivate intrapreneurship, especially in SMEs, where disadvantages and capabilities are higher (Doh and Kim, 2014). Various support services for innovation include provisions for quality business support services; technical and managerial training programs; cutting administrative costs; building networks cross sectors and cross borders; requirements for financial incentives and assistance; and legal framework advising (Wilson, 2007). As a result, motivated employees may generate an above-average firm performance in terms of growth and job creation (Colombelli, 2016; Colombelli et al., 2020) and introduce new technologies and business practices essential for an economy's global competitiveness (Buffart et al., 2020).

Researchers agree that each government, irrespective of the country, must account for regional and local factors that affect entrepreneurship in a regional approach (Baumol, 2014; Doh and Kim, 2014). Generally, most of the government programs in Latin America offer financial support business incubation and acceleration in coalition with universities and private sector. This triple helix collaboration is relevant for firms in early internationalization process based in developing countries (Baier-Fuentes et al., 2021). Thus, government programs are vital in encouraging intrapreneurship and innovation in firms. Therefore, we propose the following hypothesis:

Hypothesis 3: In Latin America, the prevalence of intrapreneurship is positively associated with the government programs supporting entrepreneurship.

According to human capital theory, education provides individuals with increased cognitive abilities, leading to a more productive and efficient potential activity (Becker, 2002; Mincer, 1974). Several authors have suggested that individuals' educational level may positively

affect how they perceive entrepreneurial opportunities (Davidsson and Honig, 2003; Unger et al., 2011). However, empirical results frequently show non-linear effects on the likelihood of becoming an entrepreneur (Bae et al., 2014). Education also positively affects innovative performance; the more innovative firms are usually led by diverse and well-educated teams (Bantel and Jackson, 1989; Bogers et al., 2018). Hence, to support innovation in a wide range of industry sectors, the workforce needs educated and trained employees and entrepreneurs (Clark et al., 2020).

Researchers have studied the effect of education (or human capital) on intrapreneurship in developing countries (Alpkan et al., 2010; Robson et al., 2012) and from a regional perspective (Bosma et al., 2012; Turro et al., 2016). Generally speaking, differences exist across educational objectives, outcomes, resources, and social constructions of the entrepreneurial activity (Dodd and Hynes, 2012; Hahn et al., 2020). Accordingly, education and training systems are relevant in regional entrepreneurial ecosystems to provide the knowledge and skills required by the workforce operating in an entrepreneurial society (Clark et al., 2020; Stam, 2015). Consequently, human capital and a business culture are significant determinants of regional growth (Barazandeh et al., 2015; Duan et al., 2022). Therefore, they also encourage intrapreneurship in regions. Accordingly, we present the following hypothesis.

> *Hypothesis 4: In Latin America, the prevalence of intrapreneurship is positively associated with the educational programs supporting entrepreneurship.*

The transference of knowledge and R&D is significantly connected to the innovation processes in firms (Mairesse and Mohnen, 2004). The purpose of innovation differs from time to time, from developing new products or services, entering new markets, or rejuvenating the business model (Covin and Miles, 1999; Hitt et al., 2008). Several researchers have evidenced the crucial role of intrapreneurs in developing innovation in firms (Lee et al., 2018; Nijhof et al., 2002). To encourage intrapreneurship, firms often turn to supporting trusted individuals within the firms to detect and develop entrepreneurial ideas (Sakhdari et al., 2020; Sebora and Theerapatvong, 2010) and, most importantly, this positively influences the firm's entrepreneurial orientation (Rigtering and Weitzel, 2013). Acs and Audretsch (1987) provided empirical evidence that R&D investments in small and

entrepreneurial firms contribute substantially to innovation in the USA. Collaboration with other firms, and other external institutions also improve R&D transfer (Blind and Grupp, 1999). The environment of the firm should be conducive to capturing good ideas from intrapreneurs, keeping ideas alive, imagining new uses for old ideas and putting promising concepts to the test (Hargadon and Sutton, 2000).

In a broader perspective, Ács and Varga (2005) and Caiazza et al. (2020) assert that "entrepreneurial initiatives respond to other firm's investments in knowledge that have not fully been commercialized, thus generating entrepreneurial opportunities" (Acs et al. 2008, 16). Furthermore, they assert that knowledge is partly embodied in employees, and increased labor mobility is a way to enhance intrapreneurial activities by extending network effects, thereby accelerating innovative activities (Braunerhjelm et al., 2018). Therefore, from the geographical perspective, knowledge spillover is relevant because, in regions where the transfer of knowledge by firms to entrepreneurs (intrapreneurs) is quick and cheap, innovation is higher than in others where this process is slow, costly, and sometimes non-existent (Hechavarría and Ingram, 2019).

Additionally, one of the characteristics of some developing regions is lower investment in R&D that encompasses lower risk capital that is provided by public and private agents. This has limited the generation of intrapreneurship and innovative ideas (Michelacci, 2003). Latin America and the Caribbean is lagging considerably in terms of the resources allocated to science, technology and innovation. "Although there has been significant progress with the public institutional framework to support these areas in recent years, basic science continues to predominate over applied science and experimental development, which are led by the private sector" (CEPAL 2022, 13). Furthermore, Guerrero et al. (2021) found that in developing countries R&D has sometimes produced negative effect a negative effect. Finally, we state this hypothesis relating to intrapreneurship and R&D transfer:

> *Hypothesis 5: Latin America, the prevalence of intrapreneurship is positively associated with the ease of R&D transfer.*

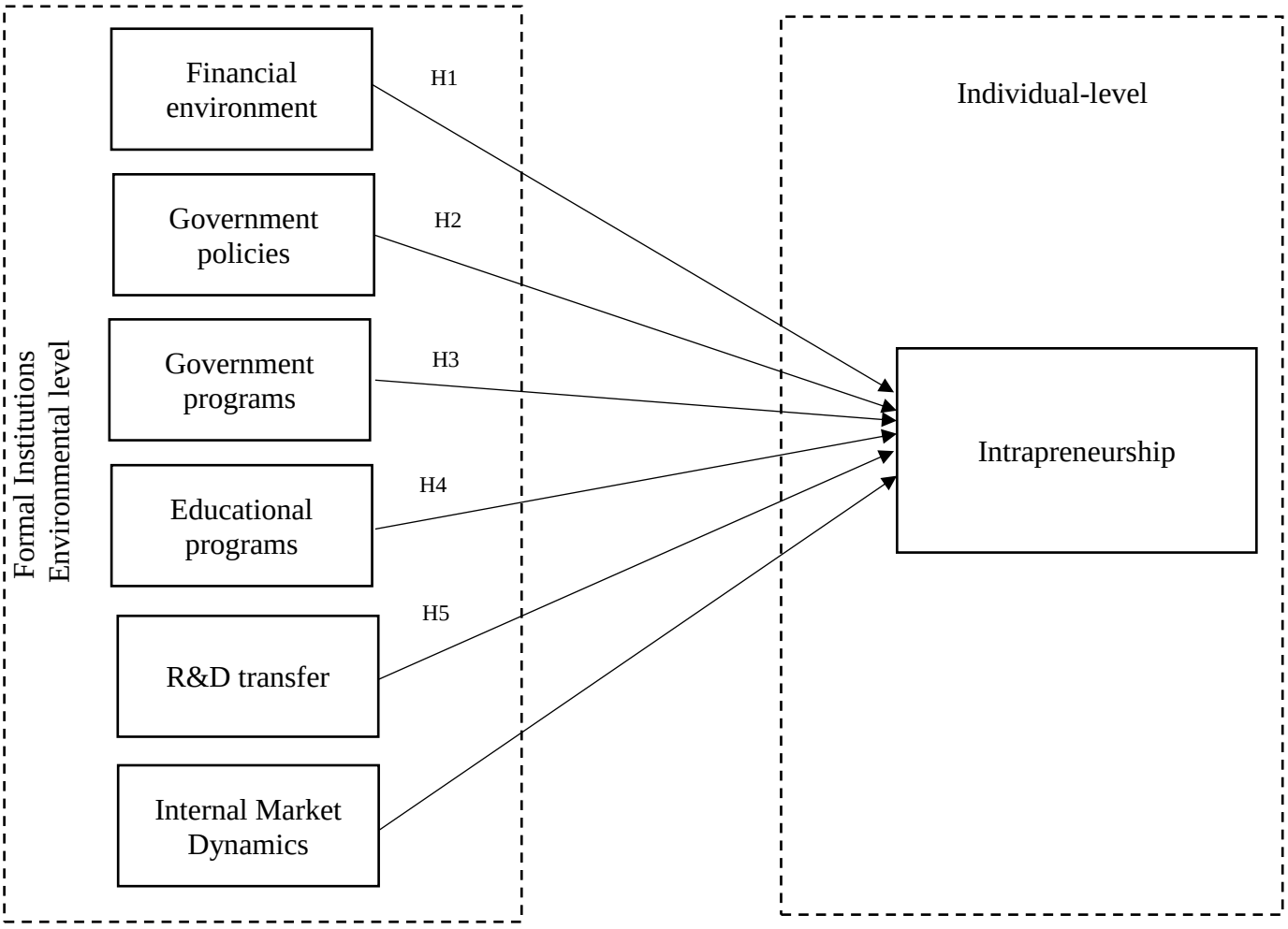
Market dynamics capture the speed of market change (Nadkarni and Narayanan, 2007). Fast-paced industries experiment with rapid changes in product and process technologies, as well as competitors' strategic actions. Therefore, firms may adopt an entrepreneurial behavior to

build a sustainable competitive advantage (Eisenhardt, 1989a). To survive in such industries, firms may favor intrapreneurship, introduce new products and process technologies faster (Fuentelsaz et al., 2022; Nerkar and Roberts, 2004), and perform frequent strategic and organizational changes (Eisenhardt and Martin, 2000). From a regional perspective, markets with a high rate of environmental unpredictability, change, and uncertainty (Dess and Beard, 1984) allow entrepreneurs to earn profits by building with uncertainty (Casson, 1982; Hechavarría and Ingram, 2019). In Latin America firms adapt to this market environment by taking multiple strategic directions. They tend to form economic groups with fairly unrelated business units in order to fill institutional weaknesses and dealing with macroeconomic instability (Vassolo et al., 2011). Accordingly, we propose the following hypothesis:

> *Hypothesis 6: In Latin America, the prevalence of intrapreneurship is positively associated with internal market dynamics.*

Finally, we summarize this literature review in Figure 6.1. This figure depicts the proposed model to explain the relationship between entrepreneurial context and intrapreneurship in Latin America.

Figure 6.1 Proposed Model



Source: Own elaboration

6.3 Methodology

6.3.1 Data

We test the hypotheses using data from the GEM, covering 10 Latin American countries[3] (73,062 observations) in 2016 –2018 data. As mentioned in previous chapters, the GEM

[3] Our sample includes the following 10 countries (in alphabetical order): Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Panama, Peru, and Uruguay.

research program is an annual assessment of the national level of entrepreneurial activity initiated in 1999. The GEM characterizes both entrepreneurs and businesses in each participating country (Reynolds et al. 2002). We employ the GEM database with information from the 18 to 64-year-old adult population survey 2016, 2017, and 2018 (APS) for this research. Additionally, we use the GEM National Expert Survey (NES) information. The NES employs a lengthy questionnaire with multiple items per EFCs. At least 36 national experts per country respond to each domain per year. Data from the NES is aggregated to the country level. Lastly, the World Bank database is the source for the control variable gross domestic product per capita.

6.3.2 Variables

Dependent variable. Similar to the previous chapter, Intrapreneurship/entrepreneurship is the dependent variable. As mentioned in the previous chapter, we label it as *I* and took the value of one when the individual is involved in intrapreneurship (EEA=1) and zero, if the individual is an opportunity entrepreneur (TEAopp=0). Researchers have employed opportunity TEA as a proxy for innovative entrepreneurial activity (Aparicio et al., 2016; Reynolds et al., 2005; Peris-Ortiz, 2018). This measure positively correlates with innovation capacity (Peris-Ortiz, 2018). Additionally, as mentioned, the EEA rate measures the prevalence of employees who have been in, the past three years active in the development of new business for the employer, an effort that is part of their regular work (Bosma et al., 2012, Liebregts, 2018); intrapreneurship is usually linked with innovation (Lumpkin, 2014).

We employ this measure because the entrepreneurial ecosystem analysis is focused on specific forms of innovative entrepreneurship (high growth, opportunity entrepreneurship, intrapreneurship).

Independent Variables. The GEM program measures the entrepreneurial ecosystem with the following metrics: (1) financial environment (access to finance); (2) government policy and support (government support and policies for entrepreneurship); (3) government programs (presence of government-based entrepreneurship programs); (4) entrepreneurial education (entrepreneurship education in primary and secondary schools, universities, and continuing

management education); (5) R&D transfer (access and policies conducive to R&D transfer for new growth firms); and (6) internal market dynamics (market dynamics associated with change and openness). These variables are standardized scales based on responses to multiple items in the NES, and researchers have used them in studies related to the entrepreneurial ecosystem (Hechavarría and Ingram, 2019; Martínez-Fierro et al., 2016). d

Control variables. Following other studies using multilevel modeling (Capelleras et al., 2019; Wennberg et al., 2013), we propose individual-level controls that critically influence intrapreneurship: age, gender, and education. Additionally, the GEM research suggests that a country's level of economic development influences entrepreneurial activity (Reynolds et al., 2002). Therefore, we control each country's gross domestic product per capita (log) as a country-level control variable. Other country-level variables extracted from GEM and relevant to explaining entrepreneurial activities are government policy and taxes (Focanti et al., 2016; Vokoun and Daza Aramayo, 2017), internal market burdens (Gruca and Sudharshan, 2018; Niu et al., 2012), and legal infrastructure (Cao and Shi, 2021; Honig and Samuelsson, 2021), entrepreneurial culture (Curtin et al., 2011; Johnson, 2002; Lehmann and Seitz 2017), and physical infrastructure access and services (Felzensztein et al., 2013; Ghani et al., 2014). We depict these variables in Table 6.1.

The maximum-likelihood probit model with sample selection is the technique to validate our hypothesis concerning how the entrepreneurial ecosystem conditions intrapreneurship in Latin America (Van de Ven et al., 1981). Accordingly, we use Heckman's (1976) two-stage estimation procedure to correct the non-random self-selection of individuals for entrepreneurial activity to account for sample-induced endogeneity (Certo et al., 2016; Bendig and Hoke, 2022).

Like the previous chapter, we select the variables household size and household income as exclusion restrictions (Liebregts, 2018) in the first stage of the estimation procedure (Millimet and Tchernis, 2013; Bendig and Hoke, 2022). Both variables have ambiguous effects on individuals' involvement in entrepreneurial activity (Aldrich and Cliff, 2003; Parker, 2011; Liebregts, 2018). As mentioned in chapter 5, these variables are associated with an individual's responsibility for the welfare of their household. These responsibilities may increase fear of failure and reduce time-consuming occupational options, which may

decrease the attractiveness of engaging in entrepreneurial activities (Parker, 2011). However, a factor like household size could be associated with access to greater resources which is positive for motivating entrepreneurial activities. Hence, both variables affect the probability of individuals' involvement in intrapreneurship (Parker, 2011). Simultaneously, they are not related to an individual's decision for intrapreneurship (Parker, 2011; Liebregts, 2018).

Table 6.1 Description of variables

Variable	Description	Source
Dependent Variable		
Intrapreneurship/Entrepreneurship=*I*	Binary variable that takes the value one if an individual is involved in intrapreneurship, and zero if an individual is involved in entrepreneurship, conditional on being involved in innovative entrepreneurial activity', Yes=1, No= 0	GEM 2016-2018
Independent Variables		
Financial environment related with entrepreneurship	National Expert Survey. Score from 1 to 9.	GEM 2016-2018
Government concrete policies, priority and support	National Expert Survey. Score from 1 to 9.	GEM 2016-2018
Government programs*	National Expert Survey. Score from 1 to 9.	GEM 2016-2018
Entrepreneurial level of education at Vocational, Prof	National Expert Survey. Score from 1 to 9.	GEM 2016-2018
R&D level of transference	National Expert Survey. Score from 1 to 9.	GEM 2016-2018
Internal market dynamics	National Expert Survey. Score from 1 to 9.	GEM 2016-2018
Control Variables		
Age	Age gathered randomly from APS	GEM 2016-2018
Gender	Male=1, Female = 0	GEM 2016-2018
Education	The individual has completed secondary school. Yes =1, No=0	GEM 2016-2018
Professional and commercial infrastructure access	National Expert Survey. Score from 1 to 9.	GEM 2016-2018
Cultural, social norms and society support	National Expert Survey. Score from 1 to 9.	GEM 2016-2019
Government policies bureaucracy, taxes	National Expert Survey. Score from 1 to 9.	GEM 2016-2020
Internal market burdens	National Expert Survey. Score from 1 to 9.	GEM 2016-2021
Physical infrastructures and services access	National Expert Survey. Score from 1 to 9.	GEM 2016-2022
GDP	Gross domestic product in parity purchasing power	The World Bank Database

6.4 Results

6.4.1 Descriptive statistics

Our sample consists of 73,062 individuals. About 20 percent (14,902 individuals) are involved in the entrepreneurial activities mentioned in our dependent variable description (opportunity entrepreneur and intrapreneur). 4.6 percent of the entire sample is engaged in intrapreneurship (N = 3,432). According to GEM, Latin America exhibits lower intrapreneurship rates than Europe or North America. Among the ten countries in our sample, intrapreneurship was most predominant in Chile (7.9 percent), Uruguay (5.9 percent), Guatemala (4.9 percent), and México (4.3 percent). Panamá (0.7 percent), Ecuador (1.4 percent), and Argentina (2.7 percent) had the lowest rates of intrapreneurs. (See Table 6.2)

Our sample's entrepreneurial framework condition scores for each Latin American country show that the National Expert Survey score is about 2.51. On the first hand, the highest score is Entrepreneurial level of education (3.04). On the other hand, R&D (2.24) and the Financial environment (2.18) received the lowest scores. Mexico (2.89), Chile (2.82), and Argentina (2.81) exhibit the best scores for Entrepreneurial Framework Conditions, whereas the countries with lower scores are Panama (2.53), Guatemala (2.41), and Brazil (2.38). (See Table 6.2)

Table 6.2. Descriptive statistics

Country	Intrapreneurship %	Age	Gender	Educational Level	Financial environment related with entrepreneurship	Government concrete policies, priority and support	Government programs	Entrepreneurial level of education at Vocational, Prof	R&D level of transference	Internal market dynamics
Mexico	4.3	37.49	0.47	0.39	2.52	2.88	3.07	3.36	2.56	2.78
Chile	7.5	44.09	0.5	0.64	2.22	2.74	3.17	2.9	2.25	2.46
Argentina	2.7	42.23	0.48	0.57	1.9	3.61	3.09	3.13	2.55	3.28
Colombia	3.5	38.16	0.48	0.6	2.11	2.41	2.72	3.35	2.17	2.64
Uruguay	5.9	46.27	0.45	0.43	2.1	2.13	3.16	3.33	2.48	2.06
Ecuador	1.4	39.86	0.49	0.53	1.84	2.11	2.1	3.44	2.08	2.75
Peru	2.9	36.75	0.5	0.47	2.22	2.28	2.58	3.01	2.05	2.55
Panama	0.7	38.09	0.5	0.24	1.9	1.99	2.56	2.6	2.08	2.39
Guatemala	4.9	34.19	0.47	0.31	1.66	1.52	1.88	3.3	1.91	2.14
Brazil	2.7	38.13	0.49	0.39	2.72	1.92	2.03	2.44	1.94	3.51
Total	4.6	40.27	0.48	0.51	2.18	2.49	2.81	3.04	2.24	2.61

6.4.2 Model estimation

Similar to the previous chapter, the maximum-likelihood probit model with sample selection is used to test the hypotheses. We also follow Liebregts (2018) to test the exclusion variables of the sample selection (household size and household income). As a result, the inclusion of household size does not fit the model, but both proposed exclusion variables fit models 1 and 2 (Table 6.3). Additionally, the log-likelihood test provides information to test whether the selection model represents an improved model over a probit equation. In other words, we propose that the effect of formal institutions on innovative entrepreneurial activity may be independent of the effect on intrapreneurship and entrepreneurship. In our case, the log-likelihood test rejected the null hypothesis; hence there is evidence of sample selectivity, and the sample equation model is an appropriate technique to explain the model. Furthermore, model 2 provides a significative explanatory power as the Wald indicator increased from 96.33 to 491.49.

Table 6.3 describes the results of our analysis. The sample contains data from 73,062 individuals belonging to 10 Latin American countries. Sample selection reduces the number to 12,398 individuals involved in intrapreneurship or entrepreneurship, which is the focus of the entrepreneurial ecosystem. This study focuses on positive direction variables and statistically significant intrapreneurship effects. Our empirical analysis supports the following. Our model supports hypotheses 3, 5, and 6. Therefore, Government programs, R&D level of transference, and internal market dynamics are significant contextual determinants for intrapreneurship in Latin America.

Table 6.3. Model estimations

Variables		**Model 1**			**Model 2**		
		Dep var: I (second stage)			**Dep var: I (second stage)**		
Individual-level		Coeff	Std error	Signif	Coeff	Std error	Signif
Controls							
Age		0	0	***	0.01	0	***
Gender		0.04	0.03		-0.01	0.03	
Education		0.14	0.03		0.04	0.03	
Country-level							
Financial environment related with entrepreneurship	**H1**				-0.36	0.08	***
Government concrete policies, priority and support	**H2**				-0.59	0.09	***
Government programs*	**H3**				1.49	0.21	***
Entrepreneurial level of education at Vocational, Prof	**H4**				-0.64	0.13	***
R&D level of transference*	**H5**				0.49	0.15	***
Internal market dynamics*	**H6**				0.55	0.09	***
Controls							
Professional and commercial infrastructure access					0.74	0.12	***
Cultural, social norms and society support					-0.1	0.06	
Government policies bureaucracy, taxes					-0.03	0.08	
Internal market burdens					-0.46	0.11	***
Physical infrastructures and services access					-0.03	0.08	
Log GDP per capita		0.15	0.03	0	-1	0.22	***
_cons		-1.53	0.33		7.08	1.88	***
Number of countries		10			10		
Number of observations		73,062			73,062		
Censored observations		60,664			60,664		
Uncensored observations		12,398			12,398		
Log pseudolikelihood		-42,199.39			-37,963.49		
p		***			***		
Wald test (indep. eqs.)		96.33			491.49		

***p< 0.0001, ** p< 0.05, * p< 0.01. All tests of significances two-tailed.

Table 6.4 shows the marginal effects of our model. Our results indicate the strong influence of the significant factors constituting the entrepreneurial ecosystem for intrapreneurship. For example, a one-point increase in the score of Government programs will enhance the likelihood of intrapreneurship by 53 percent. Additionally, for individuals in countries with better scores in R&D and knowledge transfer, the possibility of engaging in intrapreneurship increases (marginal effect of 17 percent). Likewise, internal market dynamics (19.49 percent) is also a significant factor in increasing intrapreneurship in Latin America.

Table 6.4. Marginal effects

Variable *I*		**dy/dx**	**Std. Err.**	**z**	**P>z**
Indivdual-Level					
Age		0.002	0.00	7.1	0
Gender		-0.002	0.00	-0.3	0.762
Education		0.015	0.01	1.42	0.155
Country-level					
Financial environment related with entrepreneurship	H1	-0.127	0.03	-4.16	0
Government concrete policies, priority and support	H2	-0.208	0.03	-6.02	0
Government programs*	H3	0.530	0.08	6.05	0
Entrepreneurial level of education at Vocational, Prof	H4	-0.227	0.04	-4.62	0
R&D level of transference*	H5	0.175	0.05	3.4	0.001
Internal market dynamics*	H6	0.194	0.03	5.31	0
Professional and commercial infrastructure access		0.263	0.04	5.43	0
Cultural, social norms and society support		-0.034	0.02	-1.54	0.125
Government policies, bureaucracy, taxes		-0.010	0.02	-0.37	0.71
Internal market burdens		-0.163	0.04	-3.95	0
Physical infrastructures and services access		-0.012	0.02	-0.43	0.664
lgdpp		-0.356	0.08	-4.25	0

6.5 Discussion

This chapter aims to determine the extent to which the entrepreneurial context in Latin America conditions intrapreneurship. Our study theoretically and empirically shows the entrepreneurial framework conditions' effect on enhancing the likelihood of intrapreneurship. In the following paragraphs, we discuss the contributions to the research, the policy implications, and the limitations of our study.

First, this study contributes to international comparative entrepreneurship research (Terjesen et al., 2016) by explaining how the entrepreneurial context (ecosystem) provides a framework

for increasing intrapreneurship in Latin American countries. Scholars widely agree that the systemic nature of entrepreneurial activity is still underdeveloped (Ács et al., 2014; Theodoraki and Messeghem, 2017). Furthermore, the entrepreneurial ecosystem is a global phenomenon (Bruton et al., 2008; Cavallo et al., 2019), but extant entrepreneurial ecosystem literature has focused on advanced economies, such as North America and Europe. Our focus in Latin America contributes to how different underlying regional formal factors are associated with entrepreneurial activity in firms. Intrapreneurship is a significant predictor of firm growth, a critical economic growth source, and an essential facilitator for regional development (Stam and Van de Ven, 2021). Thus, our approach may reduce the gaps in research between advanced and emerging economies.

Intrapreneurship prevalence is lower in Latin America than in other more advanced economies. Our second contribution is to unpack the deficiencies of the entrepreneurial context in the region to find new and urgent avenues for policymaking. To foster intrapreneurship is necessary to develop an institutional context that provides incentives to firms and individuals. Literature has explored the constraints of entrepreneurial and innovation activities in developing countries, such as institutional weaknesses, lack of resources, and structural gaps, to illustrate the absence of actors and networks (Cao and Shi, 2021). In line with other studies, our results evidence that considering the firms' relevant role in Latin American economies, it is necessary to address their problems of low productivity and limited access to resources for innovation.

Latin America has a high and increasing level of entrepreneurial activity (measured by GEM's total entrepreneurial activity rate); however, this has primarily been created by self-employed solo entrepreneurs. Many of these entrepreneurs have incomes below the poverty line (Stam, 2013). Therefore, to increase innovation, countries require an improved framework that encourages intrapreneurs that are relevant to generating a more significant number of high-growth firms (Antoncic and Antoncic, 2011). Our study confirms that intrapreneurs need access to specialized resources that differ significantly from resources that support new firms (Napier and Hansen, 2011). For example, the financial environment for entrepreneurship significantly impacts new businesses created by independent entrepreneurs. However, there is still a lack in financing entrepreneurial initiatives from employees. Although many innovative projects are funded by internal corporate funding, the

internationalization and expansion of high-growth firms often require other funding sources. For instance, Siota and Prat (2020) reports an ongoing discussion about the idea that corporations should play a more significant role in the regional ecosystem to create impact. Similar studies have found that government funding is essential for high-growth firms. However, in Latin America, high-growth firms outperform better when the funding is provided by multilateral development venture capital and private venture capital firms (Dams et al., 2021).

Following our theoretical findings, we also confirm the government's role in promoting entrepreneurial activities. Government should provide specific policies that facilitate innovations led by intrapreneurs. Additionally, governments must onset a structural change by solving the prevalence of corruption, weak public institutions, and lack of compliance with the law (Lecuna and Chávez, 2018). This context favors a rent-seeking behavior that does not conduct entrepreneurship and innovation in firms. Our indicators suggest that the government should also pay attention to the tax burden and reduce the bureaucracy needed for entrepreneurial activity. However, recent scholars have highlighted the role of individuals (intrapreneurs) as key players in nurturing the ecosystem, decreasing the role of the government. The government is a "feeder" instead of a "leader." The government can adjust laws and regulations and enhance economic freedom, whereas intrapreneurs can look for opportunities based on market and system failures (Stam, 2015). Therefore, individuals with entrepreneurial behavior can deal with opportunities and restrictions with the government or other "feeders," such as professional service providers, which are also relevant to fostering intrapreneurship in Latin America.

Our results confirm that in Latin America, the education for entrepreneurship has improved. Nevertheless, to encourage intrapreneurship, it is necessary to enhance educational strategies at the regional level. According to Bosma et al. (2011), in high-income countries, educational levels seem to have no effect on the prevalence of intrapreneurship. Additionally, Parker (2011) found that in the US, human capital is more associated with entrepreneurship than with intrapreneurship. However, the returns on human capital may be much better captured through intrapreneurship in developing countries. Therefore, educational institutions in Latin America must encourage challenge-based education in association with firms in order to increase the possibilities to learn individually and collectively the skills of intrapreneurship.

Solving concrete business decision-making challenges by upgrading expertise and experience shows the need to work in collaborative forms.

We find that R&D and knowledge transfer may make a difference in developing intrapreneurship in the region. The literature strongly highlighted that the degree of R&D investments was very far from developed economies (Viglioni et al., 2020). Besides that, there is a considerable effort to innovate. Indeed, high economic growth, poverty reduction, and inequality are receiving attention in the policy agenda in Latin America (Crespi et al., 2019; Gómez-Valenzuela et al., 2020), and innovation and employment are critical to address these topics. In this matter, the public sector plays the most important role in developing national innovation systems (Berrutti and Bianchi, 2020). In some countries (e.g., Brazil, Costa Rica, Colombia, and Venezuela), this led to the creation of the Ministries of Science and Technology. In others, the policymaking authority was assigned to special divisions within other ministries. (Berrutti and Bianchi 2020). However, Arocena and Sutz (2000) posed that the relationship between firms and knowledge-production institutions are a key aspect of the innovative landscape. Because of it, intrapreneurship requires encouragement from fostering organizational units, such as R&D groups, devoted to creating new ideas for future businesses (Galbraith, 1982). But, to increase transference, the region also requires policies like labor flexibility and mobility that are crucial for R&D transfer (Menzel et al., 2007). Therefore, promoting the flow of R&D workers from other innovating firms carries important policy implications in Latin America by removing obstacles and facilitating intraregional mobility. Furthermore, public policy programs may provide resources for collaborative projects involving universities and firms in the region, or promote corporate and startup collaborations.

Current policy that focuses on stimulating high-growth entrepreneurship and innovation cannot be restricted to entrepreneurs and founders. Usually, Latin American policies encourage entrepreneurship in many forms, but they should be more specific to motivate employees to become intrapreneurs. Because intrapreneurs are predictors of firms' growth as they provide innovativeness, proactivity, and risk-taking to the performance of firms. Therefore, national or regional policies should include different actors who interplay in a system devoted to boosting the development of Latin American countries.

6.6 Conclusion

With information from 10 Latin American countries collected from GEM, and a probit model with sample selection, our study theoretically and empirically shows the extent to which the formal entrepreneurial context influences intrapreneurship in Latin America. Furthermore, we attempt to relate the effect of the entrepreneurial framework on enhancing the likelihood of intrapreneurship in the region, finding exciting results and insights into public and business policy. Our results show that formal factors are also relevant for intrapreneurship. Particularly, the role of government programs, R&D transfer and market dynamic are significative to increase the likelihood of an employee to become intrapreneur. Financial environment, education and government policies toward entrepreneurship are no affecting intrapreneurship. Therefore, in order to increase intrapreneurship, countries need to enhance the entrepreneurial ecosystem by creating financing mechanisms to foster intrapreneurship, developing educational capabilities related to offer creative solutions to firms. Creative employees with entrepreneurship capabilities must be able to obtain support and resources within a firm to bring their efforts to fruition. Some ways to support are: increasing corporate—startup collaborations, allowing employees to work part-time at start-ups, to develop their own start-ups, or being exposed to a different industry (Rigtering and Behrens, 2021). Therefore, to facilitate economic growth, policymakers are urged to develop institutions that will reward entrepreneurs for engaging in the creation of wealth through productive entrepreneurial activities (Estrin and Mickiewicz, 2011).

Nevertheless, we recognize some limitations that suggest future research possibilities. First, our empirical model tested the influence of different factors on intrapreneurship. However, the definition of an ecosystem implies an interrelation of actors. Hence, future studies should embrace this limitation by designing empirical models to test the ecosystem's systematic performance. Second, our dependent variable focuses on employees' entrepreneurial activity. The GEM program is weak in measuring the performance of the intrapreneurial activities, whether it is productive or non-productive (Elert and Stenkula, 2020). Hence, future studies could go deeper into this consideration by distinguishing institutional conditioning factors, resources, and outputs. Additionally, Third, our study elaborates factors affecting

intrapreneurship in upward causation. Recent studies on the ecosystem have a downward relationship between entrepreneurial ecosystems as the dependent variable, and high-growth firms as the independent variable, finding promising results (Stam and Van de Ven, 2021). This attainment could be tested by including intrapreneurship in the equation.

Chapter 7

Conclusions

7. Conclusions

7.1 Main conclusions

The phenomenon of entrepreneurial activities within firms (Antoncic and Hisrich, 2001) has aroused as an interesting research topic for scholars because it has valuable consequences for the performance of firms, innovation, and economic development (Antoncic and Hisrich, 2001; Felício, Rodrigues, and Caldeirinha, 2012; Parker, 2011; Zahra, 1986). This phenomenon in the literature has been named in diverse ways, such as intrapreneurship (Parker, 2011), corporate entrepreneurship, and corporate venturing (Kuratko and Audretsch, 2013; Zahra, 1991). However, previous research has emphasized differences in the aforementioned concepts. For example, corporate entrepreneurship can be seen as an innovative process initiated from the top-down of the organization (organizational level), whereas intrapreneurship can be seen as a bottom-up approach related to the entrepreneurial behavior of employees (individual-level) (Åmo and Kolvereid, 2005; Blanka, 2019; Rigtering and Weitzel, 2013).

The value of entrepreneurship within firms is not limited to firms from developed economies (Hitt et al., 2011). It also pertains to the domain of firms in emerging and developing economy contexts (Luo and Junkunc, 2008), as it provides means through which firms in those contexts can renovate activities, reconfigure resources, and shift the entrepreneurial attitudes essential to competing in such greatly uncertain environments (De Villiers-Scheepers 2012). However, the literature on how entrepreneurship activities are facilitated in firms in such contexts remains underdeveloped (Phan et al., 2009). With this in mind, published studies have evidenced that firms in developing economies lack the kind of intangible assets characteristic of developed and more innovative economies (Guillen and Garcia-Canal, 2011). Despite the increasing number of papers regarding intrapreneurship and corporate entrepreneurship, there exist research gaps to be filled. Especially, a combined perspective of analysis between corporate entrepreneurship and intrapreneurship is necessary to understand the role of institutions, firms, and employees in the performance of firms. Moreover, how firms interact with the external environment with the internal capabilities to motivate entrepreneurial activities is a perspective that has not been widely researched

(Blanka, 2019). This integrative approach needs to mix environmental, organizational, and individual levels of analysis (Hill and Birkinshaw, 2008).

Overall, the main objective of this research is to study the environmental, organizational, and individual determinants of entrepreneurial activities and their effects on existing firms in developing countries. In particular, this doctoral thesis focused on the following: first, to study the individual, organizational, and environmental factors that affect entrepreneurship within firms (via intrapreneurship or corporate entrepreneurship) and their performance. Second, the use of a specific research framework, the application of certain research techniques (such as multilevel modeling). Third, the focus on particular contexts, such as developing countries, a regional context (emphasizing the cases of Latin America and Colombia). Finally, the use of multicountry databases and a customized survey, and the study of entrepreneurship within firms in an integrative approach (mixing the levels of analysis).

Overall, drawing on institutional theory and dynamic capabilities, the results of this thesis show the interplay of environmental, individual, and organizational factors that influence both the corporate entrepreneurship strategy and the employee decision to become an intrapreneur.

This research has been developed from an international comparative perspective (by comparing developing and developed countries) and in a regional context (Latin America and Colombia). In this respect, this doctoral research has primarily used the Global Entrepreneurship Monitor (GEM) data, together with other sources of information, such as the Economic Freedom Index and the World Management Survey, complemented by data from the World Bank Database. Additionally, we performed a survey to collect information from mid and large firms in Colombia. Moreover, several research techniques have been employed throughout this doctoral thesis: systematic literature review, multilevel logistic regression, structural equation models (Partial least squares), and probit with sample selection. Finally, Table 7.1 summarizes the main results of the research.

Table 7.1. Summary of the main results of the research

Chapter	Theoretical framework	Dependent Variable	Independent variable	Methodology	Main results
Chapter 2: Corporate entrepreneurship research in developing countries: a review and agenda for future directions	-	-	-	Systematic literature review and co-word analysis of 85 articles published in the top management and entrepreneurship journals	The results show the current state of corporate entrepreneurship and intrapreneurship research in developing countries. In ion, analysis enables us to establish three main lines for future research: determinants and effects of corporate entrepreneurship, determinants of intrapreneurship and performance, and dynamic capabilities and corporate entrepreneurship.
Chapter 3: The effect of institutions on intrapreneurship: An analysis of developed Vs. developing Countries	Institutional Economics	Intrapreneurship	Fear of failure Media attention Social status of entrepreneurs Economic freedom	A multilevel logistic regression technique, data from the Global Entrepreneurship Monitor (GEM) for the years 2014-2020 with information on 31 developing countries (177,201 observations) and 29 developed countries (237,053 observations). This dataset is complemented with data from the Heritage Foundation	The main findings highlight that institutions such as economic freedom, fear of failure, media attention to entrepreneurs, and social status are significant predictors of intrapreneurship in developed and developing countries. In addition, we show that formal institutions may be more relevant than implied in previous research since they also have a moderating effect
Chapter 4: Institutions, dynamic capabilities, and corporate entrepreneurship-performance: An analysis in a developing country	Institutional Economics and Dynamic Capabilities	Corporate Entrepreneurship	Institutions (formal and informal) Dynamic capabilities Corporate Entrepreneurship (Corporate Venturing and strategic entrepreneurship) Performance (Subjective)	A PLS (Partial least Square) to test the proposed relationships in a sample of 326 Colombian firms.	The main findings highlight the contextual approach of corporate entrepreneurship and the necessity of enhancing dynamic capabilities to increase performance.
Chapter 5: Management practices in the allocation of entrepreneurship and intrapreneurship across countries	Institutional Economics	Intrapreneurship/entrepreneurship	Operation practices Performance monitoring Target setting Talent management	A maximum-likelihood self-selection probit model is used to correct for non-random self-selection into innovative entrepreneurial activity. a sample of 201.267 individuals across 20 countries from developed and developing countries. GEM Data (2016) World Management Survey (2004-2015).	The main findings highlight that different management practices indicators may result in various intensities and forms of entrepreneurial activity. Consequently, countries with a predominance of distinct sets of management practices favor one type of entrepreneurial activity.
Chapter 6: Entrepreneurial context and Intrapreneurship in Latin America	Institutional Economics	Intrapreneurship/entrepreneurship	Financial environment related to entrepreneurship Government concrete policies, priority and support Government programs Entrepreneurial level of education at Vocational, Prof R&D level of transference Internal market dynamics	A maximum-likelihood self-selection probit model to correct for non-random self-selection into entrepreneurial activity in a sample of 73,062 individuals across ten countries. Data from the National Expert Survey GEM from 2016 to 2018.	The main findings highlight that, effectively, some factors, such as government programs, R&D transfer, and internal market dynamics significantly affect employees' decisions for intrapreneurship; therefore, this research contributes mainly to revealing the insights necessary to turn the attention to developing public policy to encourage intrapreneurship.

This section summarizes the main results of this doctoral thesis. The objective of Chapter 2 is twofold: First, to explore the evolution and the contents of corporate entrepreneurship, intrapreneurship, and related concepts. Second, to develop and suggest a future research agenda. The review consisted of analyzing 85 articles published in top journals in the management and entrepreneurship field. The main results show the current research in the corporate entrepreneurship and intrapreneurship fields. A co-word analysis supports this review to reveal the main clusters and thematic evolution helpful to an in depth-content analysis. This analysis identifies three potential research lines to develop future research. Some of these ideas are researched in the remaining chapters of this doctoral thesis.

In Chapter 3, the study focuses on analyzing the influence of institutional factors on the decision of an employee to become an intrapreneur. The results show that informal institutions (fear of failure and media attention) play a more significant role than the social status of entrepreneurs in increasing the likelihood of firm entrepreneurial activities in developed and developing countries. This study applies a multilevel logistic regression with data from the GEM data and the Heritage Foundation of 29 developed countries and 31 developing countries. In addition, our model provided relevant results about the moderation of economic freedom. They suggest that economic freedom is relevant in affecting intrapreneurship and, more importantly, it may complement informal institutions to increase intrapreneurship engagement. Moreover, the moderation of economic freedom is different depending on the economic development context. As discussed in developed countries, economic freedom enhances, to a greater extent, the relationship between the social status of entrepreneurs and intrapreneurship and media attention and entrepreneurship.

The objective of Chapter 4 is to test a structural model to provide additional empirical support for the importance of corporate entrepreneurship and performance relationships with data from 326 firms in Colombia. This study explores and measures how firms continually make decisions in a complex institutional environment by reconfiguring their capabilities. Therefore, the role of top management when deciding the entrepreneurial activities focuses on employing, integrating, and reconfiguring the current resources to address the opportunities in the changing environment of developing countries. The empirical results of our research test confirm and measure the interplay of national-level institutions and firm-level performance. We measure different variables of formal and informal institutions to

construct the institutions' latent variable. According to our results, firms in developing countries appear to consider mainly formal institutions in their decision to design their corporate entrepreneurship strategy.

Chapter 5 focuses on determining the extent to which a country's management practices enhance entrepreneurial behavior in its population. Our study shows theoretically and empirically the effects of four management practices (operations management, performance monitoring, target settings, and talent management) on the allocation of entrepreneurial talent over intrapreneurship and entrepreneurship in different countries. The study used GEM data and World Management Survey information to assess the hypothesis with a probit model with sample selection. The results show that operation management and target settings partially explain the variation of intrapreneurship across countries. In addition, the hypothesis relating talent management to intrapreneurship is counterintuitive. Therefore, this opens more questions about the effectiveness of human resources management practices in firms.

The objective of Chapter 6 is to analyze the extent to which the formal entrepreneurial context influences intrapreneurship in Latin America. This study uses the NES scores from GEM to develop a probit model with sample selection. Furthermore, we attempt to relate the entrepreneurial framework conditions' effect on enhancing the likelihood of intrapreneurship in the region, finding exciting results and insights into public and business policy. Our results indicated that government programs, R&D level of transference, and internal market dynamics are significant determinants for intrapreneurship. This study insists on the necessity of developing public policy to encourage intrapreneurship because it is a predictor of firm growth. Consequently, intrapreneurship may be relevant to economic growth.

7.2 Theoretical contributions y practical contributions.

As mentioned in Chapter 1, this doctoral thesis may have theoretical and practical implications. This thesis may contribute to the generation of knowledge in an emerging field that requires deeper understanding (entrepreneurship within firms in developing countries). Some relevant theoretical contributions arise from applying institutional theory and dynamic capabilities in the analysis.

From a theoretical perspective, our results contribute to comparative international entrepreneurship research (Terjesen et al., 2016) by explaining whether and how the institutional context may be a determinant driver in different perspectives—first, facilitating employees' decision to become intrapreneurs (Chapter 3), second, facilitating (or hindering) dynamic capabilities of firms to develop successful corporate entrepreneurship activities (Chapter 4). Third, providing a structure of cognition where individuals visualize and conceptualize the management practices across country to decide the mode of opportunity entrepreneurship exploitation (Chapter 5). Finally, providing the formal environmental framework conditions that affect intrapreneurship in Latin America (Chapter 6). This multilevel and multicountry analysis is not common in the literature and provides an integrative understanding of how entrepreneurial activities occur in established firms.

Some of the research techniques also may contribute to the literature. First, this doctoral thesis in Chapter 2 combines a systematic literature review with a co-word analysis. The use of these methods reveals significant contributions in the field of entrepreneurship within firms (Callon et al., 1991). In addition, despite several authors having conceptualized corporate entrepreneurship and intrapreneurship as phenomena affected by factors at different levels, few studies have employed quantitative analysis (Dess et al., 2003; Hitt et al., 2011). This research contributes by applying multilevel techniques such as multilevel logistic regression (Chapter 3) and probit model with sample selection (Chapters 5 and 6).

In particular, this study emphasizes the effect of the environment, which has been recognized to be relevant mostly in theoretical and non-quantitative research (Ireland et al., 2009) and contributes to the literature that shows how institutional factors condition entrepreneurial activity (Bruton et al., 2010) in the context of developed and developing countries.

The results confirm that institutions have a direct and moderating role as predictors of intrapreneurship in developed and developing countries. These findings are consistent with the institutional theory, which emphasizes that formal and informal institutions can substitute each other (North, 1991) or competing (Welter and Smallbone, 2019). Our estimations suggest that economic freedom (a formal institution) affects intrapreneurship, and it may complement informal institutions to increase intrapreneurship engagement. Underdeveloped formal institutions characterize developing countries. A society with weak formal institutions is often characterized by strong informal institutional factors that enable and constrain human behavior (Welter and Smallbone, 2019). Intrapreneurs and firms deal with uncertainty, perceptions, and obstacles that impede the development of new projects. Those obstacles could be overcome depending on the extent to which the formal institutional environment provides additional resources and support (De Clercq et al., 2013). Our results show that formal institutions may be more relevant than implied in previous research since they also have a direct and indirect effect. This doctoral thesis adds to the literature (Chapters 3 and 4) and discusses the interplay of formal and informal institutions to increase intrapreneurship across countries.

Additionally, how firms in developing countries continually make decisions in a complex institutional environment reconfiguring their firms' capabilities. Corporate entrepreneurship actions are significantly linked to performance, but they are strongly affected by the institutional environment. Therefore, this study evidences the role of top management when deciding the entrepreneurial activities.

The institutional theory also offers a framework to understand that individuals are strategic actors who evaluate and select means in view of ends (Cardinale, 2018; Selznick, 1949). The selected means are limited by individual factors (actors develop views and habits), organizational factors (goals or procedures aimed to achieve an established, value-impregnated status), and societal factors (anyone who acts in society is committed to conducting consistent with social structure and cultural patterns). These structures affect the mode of opportunity exploitation by individuals. In this sense, we investigate how country-level differences in management increase the likelihood that individuals are involved in intrapreneurship vis-á-vis entrepreneurship. This link between management practices and the mode of opportunity exploitation by individuals has been studied at the firm level but

not within international comparative research. By combining several data sources, we can show how this "missing link" affects the allocation of entrepreneurial talent over intrapreneurship and entrepreneurship and provide an alternative explanation for why some countries are more intrapreneurial than others.

In Chapter 6, this thesis analyzes the extent to which the formal entrepreneurial context provides a framework to increase intrapreneurship in Latin American countries. The systemic nature of the entrepreneurial activity is still underdeveloped (Ács et al., 2014; Theodoraki and Messeghem, 2017), and the entrepreneurial ecosystem is a global phenomenon (Bruton et al., 2008; Cavallo et al., 2019), but extant entrepreneurial ecosystem literature has focused on advanced economies such as North America and Europe. Our focus in Latin America contributes to how different underlying regional formal factors are associated with entrepreneurial activity in firms. Intrapreneurship is a significant predictor of firm growth, a critical economic growth source, and an essential lubricant for regional development (Stam and Van de Ven, 2021). This thesis may contribute to unpacking the deficiencies of the entrepreneurial ecosystem in the region. We provide insights to find new and urgent avenues for policymaking to increase the prevalence of intrapreneurship in Latin America, that is lower than in other more advanced economies.

From a practical perspective, linking the different levels (and different contexts) of the study of entrepreneurship within firms and connecting the top-down corporate entrepreneurship and bottom-up intrapreneurship provides insights to enhance the understanding of the performance of firms in developing countries.

Our results (Chapters 3 and 4) evidence a direct influence of formal institutions on intrapreneurship and corporate entrepreneurship. According to the analysis prioritizing the enhancement of formal institutions without an understanding of informal institutions might result in the limited realization of benefits gained from formal institutional reforms (Webb et al., 2020). Firm and public policy should convey effective intrapreneurship by developing mechanisms that enable funding for firms or enhance collaboration among firms to share the risk of failure in innovative projects. The promotion of intrapreneurs requires the construction of compelling stories about their innovative ideas or inventions to gain recognition and increase resources from social connections resulting from media exposure.

Additionally, it is essential to reward and publicly recognize the work done by employees in order to create role models that might encourage entrepreneurship within firms (Morris et al., 1993). In order to promote entrepreneurship in established firms, it is also necessary to create mechanisms to increase a culture of tolerance for failure. Relatedly, firms should contemplate the option to abandon under-performing projects without any admonition to employees.

This thesis provides information (Chapter 4) about the relevant capabilities needed to maneuver the institutional environment to design, deploy and evaluate the corporate entrepreneurship strategy. For example, it is a challenge for firms to increase human capital (Calabrò et al., 2021), political networks (Yiu and Lau, 2007), and other capabilities such as absorptive capacity (Mardani et al., 2018), marketing (Xu et al., 2018), and technological capabilities (Yunis et al., 2018). These capabilities are critical to enhancing the performance of firms (Liu et al., 2013; Liu et. al, 2015).

Our results offer relevant implications for managers. The business strategies designed to target innovation should pay attention to the specificities of the firm corporate entrepreneurship strategy and the national-level institutional ecosystem. We suggest that firms could generate synergies with educational institutions to develop methods and new knowledge to create distinctive capabilities. Hence, build new abilities to reorganize their routines to promote interactions that lead to successful solutions to particular problems. Furthermore, entrepreneurship policy usually focuses on new business creation, ignoring the emergence of intrapreneurship. This thesis shows the relevance of developing policy to encourage and foster intrapreneurship. Intrapreneurs are relevant in generating a more significant number of high-growth firms (Antoncic and Antoncic, 2011). In Chapter 5, this thesis proposes that the conditions to support the development of entrepreneurship or intrapreneurship may be different. Thus, understanding the main configuration of country-level management practices helps the government design valid policies to develop innovative entrepreneurial activity (Baumol, 1990), whether inside or outside the boundaries of established firms. In addition, to increase innovation, countries require an improved framework that encourages entrepreneurship within firms (Chapter 6). Therefore, policy should design mechanisms and specialized resources that differ significantly from resources supporting new firms (Napier and Hansen, 2011). For example, the financial environment

for entrepreneurship significantly impacts new businesses created by independent entrepreneurs. However, it is still lacking to finance entrepreneurial initiatives from employees.

Moreover, our indicators suggest that the government should also pay attention to the tax burden and reduce the bureaucracy needed for entrepreneurial activity. However, recent scholars highlight the role of individuals (intrapreneurs) as critical players in nurturing the ecosystem, decreasing the role of the government. The government is a "feeder" instead of a "leader." The government can adjust laws and regulations and enhance economic freedom, whereas intrapreneurs can look for opportunities based on market and system failures (Stam, 2015). Therefore, individuals with entrepreneurship behavior can deal with opportunities and restrictions with the government or other "feeders," such as professional services providers, which are also relevant to fostering intrapreneurship in Latin America.

Additionally, R&D and knowledge transfer may make a difference in developing intrapreneurship in the region (Chapter 6). The region requires policies like labor flexibility mobility for R&D transfer (Menzel et al., 2007). Promoting flows of R&D workers from other innovating firms carries important policy implications in Latin America by removing obstacles and facilitating intraregional mobility. Furthermore, public policy programs may provide resources for collaborative projects involving universities and firms in the region or promote corporate and startup collaborations. In addition, creative employees with entrepreneurship capabilities must be able to obtain support and resources within a firm to bring their efforts to fruition. Some ways to support are increasing corporate—startup collaborations, allowing employees to work part-time at startups, develop their startups, or being exposed to a different industry (Rigtering and Behrens, 2021).

Finally, the focus of the policy is on stimulating high-growth entrepreneurship and innovation, which cannot be restricted to entrepreneurs and founders. Intrapreneurs are predictors of firms' growth as they provide innovativeness, proactivity, and risk-taking to the performance of firms. Therefore, national or regional policies should include different actors who interplay in a system devoted to boosting the development of Latin American countries. Usually, Latin American policies encourage entrepreneurship in all forms, but they should turn their attention to intrapreneurship.

7.4 Limitations and future research lines

Finally, we recognize several limitations and suggest future research lines. The first limitation is theoretical because there is a broader literature on entrepreneurship within firms beyond intrapreneurship and corporate entrepreneurship. For example, some authors include entrepreneurial orientation or corporate venturing and strategic entrepreneurship (Lampe et al., 2020). These mentioned concepts are not studied profoundly in this thesis. Further research should deep into these definitions to complement the integrative approach.

Second, the variable intrapreneurship used in this study is employed in other research and was introduced in the GEM project precisely to gauge entrepreneurial employee activity (Stam, 2013). However, it is necessary to include more accurate proxies for measuring intrapreneurship. The theory suggests a wide definition of intrapreneurship (Antoncic and Hisrich, 2001) and corporate entrepreneurship (Kuratko and Audretsch, 2013) that is partially collected in the variables used in this study.

Third, in our research, we have not tested several other factors that may moderate or mediate the effect of institutions on intrapreneurship and corporate entrepreneurship. Therefore, future researchers may consider additional factors. For instance, the dynamism of the industry, the ownership (Zahra, 1996), and the degree of internationalization of firms (Brouthers et al., 2015).

Fourth, Chapter 4 was performed by gathering information from managers, which could lead to response biases that may be further compounded in the cross-cultural context and to common method variance (Podsakoff and Organ, 1986). Future research should have multiple respondents in each organizational unit to minimize the effects of systematic response bias (Mustafa et al., 2016).

Fifth, Chapter 4 focuses in Colombia. Therefore, considering the little research conducted in the field in different developing countries, future research should expand to other countries in Latin America to provide a better generalization of the results.

Sixth, Chapter 4 is limited to the institutional and organizational factors affecting corporate entrepreneurship. Further research should follow into the managerial and employee

behavior, antecedents, and motivations to influence corporate entrepreneurship in firms to answer how they contribute to the entrepreneurial mindset of the firm.

Seventh, in Chapter 5 our findings may have limited generalizability to other countries and industries. WMS investigates management practices in manufacturing firms in a limited set of countries. Therefore, further research should employ additional data and test the results in a sample involving a higher number of countries and other industries and firms.

Eighth, in our research, we have not tested several other factors that may be relevant to understanding the allocation of talent over intrapreneurship and entrepreneurship. Therefore, future researchers may consider additional factors. For instance, the intrapreneur faces society's rules, and firm-level factors often interact with society's institutions to shape entrepreneurial incentives (Elert and Stenkula, 2020; Mahoney and Thelen, 2010). Strong employment protection legislation may affect the allocation of talent. On the one hand, strong legislation causes firms to contract out more work, relying less on intrapreneurship (Román et al., 2011). On the other hand, it may increase the opportunity costs of leaving employment if self-employment is pursued (Liebregts and Stam, 2019).

Ninth, Chapter 6 studies the role of the formal entrepreneurial context in motivating intrapreneurship. Nevertheless, there are some future avenues to investigate. Future studies should design empirical models to test the ecosystem's systematic performance that measures the interplay of different conditions. For example, how the conditioning factors interact to gauge intrapreneurs. Our dependent variable focuses on employees' entrepreneurial activity. GEM program is weak in measuring the performance of the intrapreneurial activity, whether it is productive or non-productive (Elert and Stenkula, 2020). Hence, future studies could go deep into this consideration by distinguishing institutional conditioning factors, resources, and outputs.

Tenth, our study elaborates on factors affecting intrapreneurship in upward causation. Recent studies on the ecosystem have a downward relationship between entrepreneurial ecosystems as the dependent variable and high-growth firms as the independent variable, finding promising results (Stam and van de Ven, 2021). This attainment could be tested by including intrapreneurship in the equation.

Eleventh, the doctoral thesis uses information from 2011 to 2018, therefore, further research needs to test empirical models with updated information.

Twelfth, several authors in the management, entrepreneurship, and comparative international research have evidence of differences between developed and developed countries. However, developing countries have a rich diversity of institutional environments (Basco et al., 2020; Welter, 2011). Therefore, to make theory more context-sensitive future research should address this limitation by investigating the differences within developing countries.

Finally, we were challenged to conduct field research during the pandemic of COVID-19. Unfortunately, it made it difficult to contact firms because most of the managers worked by distance and adapted their organization to the pandemic. Consequently, further research should evaluate new insights to robust the results after the pandemic to avoid additional bias.

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Appendix

Appendix

Appendix 1. Articles used in the literature review

Author	Title	Journal	Year	Objective	Theoretical framework	Database	Country	Tecnique
Agapie, A.; Vizitiu, C.; Cristache, S.; Nastase, M.; Craciun, L.; Molanescu, A.	Analysis of Corporate Entrepreneurship in Public R&D Institutions	SUSTAINABILITY	2018	This paper aimed at establishing a Corporate Entrepreneurship diagnosis model within public R&D institutions.		Survey to 50 public entities.	Romania	Logistic Regression Analysis
Agca, V.; Topal, Y.; Kaya, H.	Linking intrapreneurship activities to multidimensional firm performance in Turkish manufacturing firms: an empirical study	INTERNATIONAL ENTREPRENEURSHIP AND MANAGEMENT JOURNAL	2012	This study investigates the relationships among the external environment, intrapreneurship and performance of Turkish manufacturing firms	Theory of Job Enrichment	Survey to 331 Turkish manufacturing firms.	Turkey	Multiple Regression Analysis
Ali, A.; Kelley, D. J.; Levie, J.	Market-driven entrepreneurship and institutions	JOURNAL OF BUSINESS RESEARCH	2020	This research seeks to explain how particular conditions in the external environment are associated with market- driven entrepreneurship—more specifically, startup or early-stage business activity that addresses opportunities in the market (opportunity-driven entrepreneurship), and that which offers unique and novel products or ser- vices to customers (innovative entrepreneurship).	Institutional Theory	Global Entrepreneurship Monitor (GEM). World Economic Forum (WEF) data in 44 economies.	Cross-country	OLS Regression Analysis
Alpkan, L.; Bulut, C.; Gunday, G.; Ulusoy, G.; Kilic, K.	Organizational support for intrapreneurship and its interaction with human capital to enhance innovative performance	MANAGEMENT DECISION	2010	To investigate the direct and interactive effects of organizational support and human capital on the innovative performance of companies.	Contingency Theory	Survey to 184 firms.	Turkey	Multiple Regression Analyses

An, W.; Zhao, X.; Cao, Z.; Zhang, J.; Liu, H.	How Bricolage drives corporate entrepreneurship: the roles of opportunity identification and learning orientation	JOURNAL OF PRODUCT INNOVATION MANAGEMENT	2018	To reframe bricolage as a concrete activity of experiential resource-learning that creates subjective knowledge of resource at hand.	A Subjectivist Theory of Entrepreneurship	Survey to 248 firms.	China	Structural Equation Modelling
Antoncic, B; Hisrich, R.	Intrapreneurship: Construct refinement and cross-cultural validation	JOURNAL OF BUSINESS VENTURING	2001	The objective of this research was to generalize the intrapreneurship construct in a cross-national study.	Institutional Theory	Survey to 145 firms in Slovenia and 56 firms in USA.	Slovenia	Structural Equation Modelling
Antoncic, B.; Prodan, I.	Alliances, corporate technological entrepreneurship and firm performance: Testing a model on manufacturing firms	TECHNOVATION	2008	This study developed and tested a model of alliance-driven corporate technological entrepreneurship activities that impact on organisational performance.		Survey to 226 firms.	Slovenia	Structural Equation Modelling
Aziz, N. A.; Omar, N. A.	Exploring the effect of internet marketing orientation, learning orientation and market orientation on innovativeness and performance: sme (exporters) perspectives	JOURNAL OF BUSINESS ECONOMICS AND MANAGEMENT	2013	This study explores the relationship between Internet Marketing Orientation, Market Orientation, Learning Orientation, Innovation Capabilities and Performance. The study also investigates the role of Internet Marketing Orientation integration in the linkage between Market Orientation-Innovativeness and Learning Orientation-Innovativeness.	Market Orientation, Organzational Learning	Survey to 187 Bumiputera SMEs manufacturing and services firms.	Malaysia	Multiple Regression Analysis
Azulay, I.; Lerner, M.; Tishler, A.	Converting military technology through corporate entrepreneurship	RESEARCH POLICY	2002	To examine the relationship between entrepreneurial behavior of employees and defense technology conversion (the use of military technologies for products aimed at the civilian market).		Survey to 133 firms.	Israel	Multivariate Analysis

Bachmann, J.; Engelen, A.; Schwens, C.	Toward a better understanding of the association between strategic planning and entrepreneurial orientation - the moderating role of national culture	JOURNAL OF INTERNATIONAL MANAGEMENT	2016	This study contextualizes the relationship between strategic planning and a firm's EO by studying the moderating influence of national culture, captured by the four prominent national cultural dimensions from Hofstede (2001): uncertainty avoidance, power distance, individualism, and masculinity.	Hofstede's Cultural Dimensions Theory	Survey to 294 firms from nine culturally and economically diverse countries.	Cross-country	Multilevel Hierarchical Liner Models (HLM)
Ben Arfi, W.; Hikkerova, L.	Corporate entrepreneurship, product innovation, and knowledge conversion: the role of digital platforms	SMALL BUSINESS ECONOMICS	2019	The primary objective is to study how CE affects product innovation through knowledge conversion processes.	knowledge Management Theory	Analysis of 3 firms.	Tunsia	Case Study
Calabro, A.; Torchia, M.; Jimenez, Gimenez, D. ; Kraus, S.	The role of human capital on family firm innovativeness: the strategic leadership role of family board members	INTERNATIONAL ENTREPRENEURSHIP AND MANAGEMENT JOURNAL	2020	This study investigates the relationship between human capital (employees' experience, knowledge and technical skills, man- agerial talent) and innovativeness (propensity to innovate) in a sample of 478 family firms taken from a cross-country dataset (STEP Project).	Resource-based View	Data from 478 family firms, from Successful Transgenerational Entrepreneurship Practices Project (STEP Project).	Cross-country	Structural Equation Modelling (PLS)
Celec, R.; Globocnik, D.; Kruse, P.	Resources, capabilities, export performance and the moderating role of entrepreneurial orientation in the context of SMEs	EUROPEAN JOURNAL OF INTERNATIONAL MANAGEMENT	2014	This research investigates the direct impact of EO in the business context of export venturing and the interplay between resources, capabilities, EO and export performancermance.	Dynamic Capabilities View	Survey to 102 SMEs.	Slovenia	Structural Equation Modelling
Chang, Y.; Liu, Y.; Chang, C.	A multilevel examination of entrepreneurial orientation and corporate entrepreneurship: the joint impact of unit-level social capital and firm-level transformational leadership	ENTREPRENEURSHIP RESEARCH JOURNAL	2019	To answer: (1) does unit-level EO affect unit-level CE, and (2) do moderating mechanisms including the unit-level social capital and firm-level transformational leadership affect the unit-level EO-CE relationship?	Conversion of Resource Theory	Survey to 132 units of 44 firms involved in service and non-service industries.	Taiwan	Hierarchical Regression Analysis

Chang, Y.; Wang, X.; Cui, A.	Solving the innovation problem in state-owned firms: The role of entrepreneurial orientation and high-commitment HR practices	INDUSTRIAL MARKETING MANAGEMENT	2019	To answer this two questions (1) Can HCHR help SOEs reduce the negative influence of state own- ership on entrepreneurial orientation, and thereby, innovation capability? (2) If yes, under what conditions might HCHR be more beneficial for SOEs?		Survey to 196 firms.	China	Multilevel Hierarchical Liner Models (HLM)
Chen, M.; Chang, Y.; Chang, Y. C.	Entrepreneurial orientation, social networks, and creative performance: middle managers as corporate entrepreneurs	CREATIVITY AND INNOVATION MANAGEMENT	2015	To examine the effects of entrepreneurial orientation and social networks on middle managers' creative performance.	Social Capital Theory	Survey to 337 firms.	Taiwan	Hierarchical Regression Analysis
Chen, Y.; Tang, G.; Jin, J.; Xie, Q.; Li, J.	CEOs' transformational leadership and product innovation performance: the roles of corporate entrepreneurship and technology orientation	JOURNAL OF PRODUCT INNOVATION MANAGEMENT	2014	This study aimed to investigate the processes through which such effect is achieved and to determine whether corporate entrepreneurship and technology orientation as intervening factors influence this effect.	Transformational Leadership	151 matched top management team (TMT) members and chief executive officers (CEOs) from Chinese manufacturing firm.	China	Hierarchical Regression Analysis
Dai, W.; Arndt, F.; Liao, M.	Hear it straight from the horse's mouth: recognizing policy-induced opportunities	ENTREPRENEURSHIP AND REGIONAL DEVELOPMENT	2020	This paper aims to explore policy-induced opportunities by examining the following two questions: (1) How are 'policy- induced' opportunities identified and developed? (2) Does it pay for entrepreneurs to engage with government policies and exploit 'policy-induced opportunities'?.	Institutional Theory	2012 China National Privately Owned Firms Survey. Index of Marketisation of Chinese Provinces.	China	Multilevel Hierarchical Liner Models (HLM)
Dai, W.; Liao, M.	Entrepreneurial attention to deregulations and reinvestments by private firms: Evidence from China	ASIA PACIFIC JOURNAL OF MANAGEMENT	2019	To examine the positive relationship between entrepreneurial attention to deregulation (formal institution at the country level) and reinvestment by Chinese private firms.	Institutional Theory	Data from 3,284 private firms in China.	China	Multilevel Hierarchical Liner Models (HLM)

Dai, W. ; Si, S.	Government policies and firms' entrepreneurial orientation: Strategic choice and institutional perspectives	JOURNAL OF BUSINESS RESEARCH	2018	This paper examines how economic policies promulgated by the central government can attempt to shape the entrepreneurial orientation of privately owned firms in China.	Institutional Theory	2,112 from National Survey of Chinese Private Enterprises	China	Hierarchical Regression Analysis
De Clercq, D.; Castaner, X.; Belausteguigoitia, I.	Entrepreneurial initiative selling within organizations: towards a more comprehensive motivational framework	JOURNAL OF MANAGEMENT STUDIES	2011	To extend research on influence and issue selling, and particularly its use of expectancy theory to explain intra-organizational selling efforts.	Expectancy Theory	Survey to 192 individuals in one firm.	México	Regression Analysis
De Clercq, D.; Dimov, D.; Belausteguigoitia, I.	Perceptions of adverse work conditions and innovative behavior: the buffering roles of relational resources	ENTREPRENEURSHIP THEORY AND PRACTICE	2016	To investigate the relationship between employees' perceptions of adverse work conditions and their engagement in innovative behavior, as well as some contextual moderators of this relationship.	Innovative Behavior Theory	707 matched pairs of employees and supervisors.	México	Moderated Regression Analysis
Douglas, E. J.; Fitzsimmons, J. R.	Intrapreneurial intentions versus entrepreneurial intentions: distinct constructs with different antecedents	SMALL BUSINESS ECONOMICS	2013	To study entrepreneurial intentions and intrapreneurial intentions and investigating the differences between these.	Theory of Planned Behavior	Survey to 414 individuals in Australia (n = 46), China (n = 39), India (n = 204), and Thailand (n = 125).	India	Seemingly Unrelated Regression Analysis
Falahat, M.; Knight, G.; Alon, I.	Orientations and capabilities of born global firms from emerging markets	INTERNATIONAL MARKETING REVIEW	2018	The purpose of this paper is to examine the impact of entrepreneurial orientation and networking capabilities of born global firms in an emerging market on marketing strategy and foreign market performance	Dynamic Capabilities View	1,001 internationalized firms.	Malaysia	Structural Equation Modelling

Filatotchev, I.; Wright, M.; Buck, T.; Zhukov, V.	Corporate entrepreneurs and privatized firms in Russia, Ukraine, and Belarus	JOURNAL OF BUSINESS VENTURING	1999	To provide an exploratory examination of the nature and extent of corporate entrepreneurship in the former USSR, concentrating on outside influences from owners and lenders on the entrepreneurial decisions of incumbent managers		Survey to 273 firms.	Belarus, Rusina and Ucrania	Anova
Gao, Y.; Ge, B.; Lang, X.; Xu, X.	Impacts of proactive orientation and entrepreneurial strategy on entrepreneurial performance: An empirical research	TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE	2018	To explore the relationship between proactive orientation and entrepreneurial performance, as well as the moderating effect of the entrepreneurial strategy.	Contingency Theory	Survey to 235 new ventures.	China	Logistic Regression Analysis
Genc, E.; Dayan, M.; Genc, O. F.	The impact of SME internationalization on innovation: The mediating role of market and entrepreneurial orientation	INDUSTRIAL MARKETING MANAGEMENT	2019	The aim of this study is to fill this gap by looking at an understudied area and investigate the relationship between internationalization and innovation performance in the context of emerging-market SMEs.	Innovation in SMEs	Survey to 235 SMEs in the UAE.	United Arab Emirates	Structural Equation Modelling
Guerrero, M.; Amoros, J.; Urbano, D.	Do employees' generational cohorts influence corporate venturing? A multilevel analysis	SMALL BUSINESS ECONOMICS	2019	This paper aims to understand how some determinants (i.e., employees' human capital and attitudes, organization- al climate, and environmental economics conditions) of entrepreneurial organizations' outcomes (i.e., corporate venturing) are influenced by a diversified workforce-related with their generational cohorts.	Institutional Theory	Global Entrepreneurship Monitor.	Cross-country	Multilevel Logistic Regression Analysis
Gupta, V.; MacMillan, I.; Surie, G.	Entrepreneurial leadership: developing and measuring a cross-cultural construct	JOURNAL OF BUSINESS VENTURING	2004	This article develops the construct of entrepreneurial leadership using the works on entrepreneurship and leadership as a guide.	Leadership Theory	Globe Project survey.	Cross-country	Exploratory and confirmatory factor analisys

Gupta, V. K.; Batra, S.	Entrepreneurial orientation and firm performance in Indian SMEs: Universal and contingency perspectives	INTERNATIONAL SMALL BUSINESS JOURNAL-RESEARCHING ENTREPRENEURSHIP	2016	This article investigates the EO-performance relationship among small- and medium-sized enterprises (SMEs) in India.	Contingency Theory	Survaey to 198 firms.	India	Hierarchical regression and structural equation modeling (SEM)
Huang, S.; Ding, D.; Chen, Z.	Entrepreneurial leadership and performance in chinese new ventures: a moderated mediation model of exploratory innovation, exploitative innovation and environmental dynamism	CREATIVITY AND INNOVATION MANAGEMENT	2014	To examine the underlying mechanism through which entrepreneurial leadership influences new venture performance by focusing on exploratory and exploitative innovations.	Entrepreneurial Leadership theory	Survey tp 168 firms.	China	Confirmatory Factor Analysis and Moderated Mediation Analysis
Hughes, M.; Mustafa, M.	Antecedents of corporate entrepreneurship in SMEs: evidence from an emerging economy	JOURNAL OF SMALL BUSINESS MANAGEMENT	2017	To study wht enables corporate entrepreneurship (CE) in emerging economy SME.		Interviews to 6 CEO in Nairobi.	Kenya	Case Study
Jiao, H.; Alon, I.; Koo, C. K.; Cui, Y.	When should organizational change be implemented? The moderating effect of environmental dynamism between dynamic capabilities and new venture performance	JOURNAL OF ENGINEERING AND TECHNOLOGY MANAGEMENT	2013	To explore the moderating effect of environmental dynamism on the relationship between dynamic capabilities and new venture performance using the rapidly changing environment in China as a case.	Dynamic Capabilities View	115 firm observations.	China	Structural Equation Modelling (PLS)
Kaya, N.	The impact of human resource management practices and corporate entrepreneurship on firm performance: evidence from Turkish firms	INTERNATIONAL JOURNAL OF HUMAN RESOURCE MANAGEMENT	2006	To outline the important role of human resource management practices with a link between corporate entrepreneurship and firm performance.		Survey of 124 firms operating in different industries in Turkey.	Turkey	Hierarchical Regression Analysis

Kearney, C.; Hisrich, R. D.; Antoncic, B.	The mediating role of corporate entrepreneurship for external environment effects on performance	JOURNAL OF BUSINESS ECONOMICS AND MANAGEMENT	2013	To study the external environment's influence on performance is enhanced through corporate entrepreneurship.		Survey to 51 private sector organizations in the United States, 141 private sector organizations in Slovenia and 134 public sector state and semi-state enterprises in Ireland.	Cross Country - Slovenia	Hierarchical Regression Analysis
Knoerr, H.; Alvarez, C.; Urbano, D.	Entrepreneurs or employees: a cross-cultural cognitive analysis	INTERNATIONAL ENTREPRENEURSHIP AND MANAGEMENT JOURNAL	2013	This study examines the influence of the cultural-cognitive dimension - measured through creativity, risk taking and independence - on the probability of becoming an entrepreneur or an employee.	Institutional Theory	World Values Survey, for the period 2005- 2008, considering a sample of 41 countries and 56,875 individuals	Cross-country	Binomial Probit Analysis
Kreiser, P. M.; Marino, L. D.; Kuratko, D. F.; Weaver, K. M.	Disaggregating entrepreneurial orientation: the non-linear impact of innovativeness, proactiveness and risk-taking on SME performance	SMALL BUSINESS ECONOMICS	2013	To provide a finer-grained analysis of the EO-performance relationship.	Behavioral Theory	Survey to 1,668 small-to-medium sized enterprises (SMEs) in nine countries across 13 different industries.	México, Indonesia entre otros	Hierarchical Regression Analysis
Lee, T.; Chu, W.	The relationship between entrepreneurial orientation and firm performance: Influence of family governance	JOURNAL OF FAMILY BUSINESS STRATEGY	2017	To examine the EO-performance relationship when family ownership is combined with active family management and control, specifically when family members serving as CEOs, top management, chairpersons and directors.		Survey 223 public firms in Taiwan	China	Multiple Regression Analysis
Liebregts, W.; Stam, E.	Employment protection legislation and entrepreneurial activity	INTERNATIONAL SMALL BUSINESS JOURNAL-RESEARCHING ENTREPRENEURSHIP	2019	To provide greater understanding of how labour market regulations, in particular, two of EPL's components, affect the allocation of entrepreneurial talent in society.	Institutional Theory	156,000 individuals from 52 countries completed	Cross-country	Multilevel Logistic regression

Liu, J.; Chen, J.; Tao, Y.	Innovation Performance in New Product Development Teams in China's Technology Ventures: The Role of Behavioral Integration Dimensions and Collective Efficacy	JOURNAL OF PRODUCT INNOVATION MANAGEMENT	2015	This article elucidates the relationships between behavioral integration dimensions (i.e., collaborative behavior, information exchange, and joint decision-making) and innovation performance and also examines how collective efficacy moderates these relationships in China's NPD teams.	Social Cognitive Theory	Survey to 96 NPD teams in China's technology ventures	China	Structural Equation Modelling
Luo, X.; Zhou, L.; Liu, S.	Entrepreneurial firms in the context of China's transition economy: an integrative framework and empirical examination	JOURNAL OF BUSINESS RESEARCH	2005	This research proposes and substantiates an integrative framework that characterizes determinants for corporate entrepreneurship (institutional, organization-specific, and strategic market factors) and consequences of entrepreneurship (sales growth and market share performance).	Institutional Theory	Survey to 289 Chinese managers.	China	Structural Equation Modelling
Lyu, C.; Yang, J.; Zhang, F.; Teo, T. S. H.; Gue, W.	Antecedents and consequence of organizational unlearning: Evidence from China	INDUSTRIAL MARKETING MANAGEMENT	2020	This research proposes and substantiates an integrative framework that characterizes determinants for corporate entrepreneurship (institutional, organization-specific, and strategic market factors) and consequences of entrepreneurship (sales growth and market share performance).	Organizational Unlearning	Interviews to 320 firms.	China	Hierarchical Regression Analysis
Martin, S. L.; Javalgi, R. G.	Explaining performance determinants: A knowledge based view of international new ventures	JOURNAL OF BUSINESS RESEARCH	2019	To study the nature of the contingent relationship between EO and knowledge-based resources in de-termining the performance of INVs.	Knowledge-based Resources Theory	Survey to 265 INVs.	México	Structural Equation Modelling
Martin, S. L.; Javalgi, R. G.; Ciravegna, L.	Service advantage built on service capabilities: An empirical inquiry of international new ventures	JOURNAL OF BUSINESS RESEARCH	2018	To extend the literature by empirically analyzing an integrative model of EO, service capabilities, and informational resources, and by examining how the latter are interlinked and contribute to service advantages.	Marketing Theory	Survey to 260 INVs from Mexico.	México	Structural Equation Modelling

Mitchell, R.; Boyle, B.; Nicholas, S.; Maitland, E.; Zhao, S.	Boundary conditions of a curvilinear relationship between decision comprehensiveness and performance: The role of functional and national diversity	JOURNAL OF BUSINESS RESEARCH	2016	This research examines topmanagement team (TMT) functional and national diversity as moderators ofa curvilin- ear relationshipbetween decision comprehensiveness and organizational performance.	Resource Allocation Theory	Survey to 107 TMTs of multinational companies.	China	Structural Equation Modelling
Mustafa, M.; Lundmark, E.; Ramos, H. M.	Untangling the relationship between human resource management and corporate entrepreneurship: the mediating effect of middle managers' knowledge sharing	ENTREPRENEURSHIP RESEARCH JOURNAL	2016	To theorize that HRM practices reinforce the knowledge-sharing behaviors of middle managers, which in turn contributes to CE.	Social Exchange Theory	Survey to 163 middle managers.	Malaysia	Multiple Regression Analysis
Nasution, H. N.; Mavondo, F. T.; Matanda, M. J.; Ndubisi, N.	Entrepreneurship: Its relationship with market orientation and learning orientation and as antecedents to innovation and customer value	INDUSTRIAL MARKETING MANAGEMENT	2011	This paper seeks to address two main problems. First, it evaluates the direct effect of entrepreneurship and business orientations namely, learning orientation, integrated market orientation and human resource practices on innovation and customer value. Second, it examines the interaction effect of entrepreneurship and business orientations on innovation and customer value.		Survey to 231 hotel managers.	Indonesia	Structural Equation Modelling
Pandey, J.; Gupta, M.; Hassan, Y.	Intrapreneurship to engage employees: role of psychological capital	MANAGEMENT DECISION	2020	The objective of this paper is to examine the mediating role of psychological capital (PsyCap) in the relationship between intrapreneurship and work engagement.	Human Capital Theory	Survey to 309 individuals working in different Indian industries.	India	Structural Equation Modelling
Pati, R. K.; Nandakumar, M. K.; Ghobadian, A.; Ireland, R. D.; O'Regan, N.	Business model design-performance relationship under external and internal contingencies: Evidence from SMEs in an emerging economy	LONG RANGE PLANNING	2018	To test the impact of two archetypal BM designs (novelty and efficiency) on firm performance.		Survey to 241 entrepreneurss and owner managers	India	OLS Regression Analysis

Ramirez-Pasillas, M.; Lundberg, H.; Nordqvist, M.	Next Generation External Venturing Practices in Family Owned Businesses	JOURNAL OF MANAGEMENT STUDIES	2020	To deepen our understanding of corporate entrepreneurship in FOBs by examining how next generation members in FOBs engage in external venturing.	Entrepreneurship as Practice (EaP)	Two cases.	México	Case Study
Rigtering, J. P. C.; Eggers, F.; Kraus, S.; Chang, M.	Entrepreneurial orientation, strategic planning and firm performance: the impact of national cultures	EUROPEAN JOURNAL OF INTERNATIONAL MANAGEMENT	2017	This study investigates the relationship between three Hofstede (1980, 1991) dimensions of national culture (uncertainty avoidance index, power distance index, and long term orientation), as well as EO and firm performance at the level of the individual sub-dimensions of EO: innovativeness, proactiveness, and risk-taking.	Culture Theory	Data from 2,907 firms.	Chinese, Dutch, German, Malaysian, and Spanish.	Fuzzy Set Qualitative Comparative Analysis (fsQCA)
Runyan, R. C.; Ge, B.; Dong, B.; Swinney, J. L.	Entrepreneurial orientation in cross-cultural research: assessing measurement invariance in the construct	ENTREPRENEURSHIP THEORY AND PRACTICE	2012	To assess the measurement invariance of the most frequently utilized EO scale.		Survey to 250 U.S. SMEs and 187 Chinese SMEs.	China, USA	Confirmatory Factor Analysis (CFA)
Sakhdari, K.; Burgers, H.; Farsi, J. Y.; Rostamnezhad, S.	Shaping the organisational context for corporate entrepreneurship and performance in Iran: the interplay between social context and performance management	INTERNATIONAL JOURNAL OF HUMAN RESOURCE MANAGEMENT	2020	To study how corporate entrepreneurship to mediate the relation between behaviour-framing attributes and firm performance.	Social Exchange Theory	Survey to 160 firms.	Iran	Structural Equation Modelling (PLS)
Sakhdari, K.; Burgers, J. H.	The moderating role of entrepreneurial management in the relationship between absorptive capacity and corporate entrepreneurship: an attention-based view	INTERNATIONAL ENTREPRENEURSHIP AND MANAGEMENT JOURNAL	2018	To investigate the effects of an organisational context characterised by the interaction of attributes on corporate entrepreneurship in the Iranian context	Attention Based-view	Survey to 298 firms.	Iran	Hierarchical Regression Analysis

Sanz, L.; Lessiza, M.	Lidersoft	JOURNAL OF BUSINESS RESEARCH	2013	The teaching case focuses on the relationships between an entrepreneur, the initial investors (providing capital and human resources), and angel investors.		One case.	Costa Rica	Case study
Sargent, J.; Matthews, L.	The drivers of evolution/upgrading in Mexico's maquiladoras: How important is subsidiary initiative?	JOURNAL OF WORLD BUSINESS	2006	To determine if subsidiary initiative is related to industrial upgrading in a sample of 50 Mexican maquiladoras.		Interview to 50 Mexican firms.	México	Case Study
Schneider, M.; Engelen, A.	Enemy or friend? The cultural impact of cross-functional behavior on the EO-performance link	JOURNAL OF WORLD BUSINESS	2015	To analyze both the impact of cross-functional cooperation and competition (and the closely related conflict) on the EO–performance link.	National Culture	Survey to 846 respondants Anglo (Australia the US and the UK), Confucian (China), Germanic (Germany, Austria, and German-speaking Switzerland), Latin European (Spain), and Southeast Asian (India).	China india	Hierarchical Regression Analysis
Sebora, T. C.; Theerapatvong, T.	Corporate entrepreneurship: a test of external and internal influences on managers' idea generation, risk taking, and proactiveness	INTERNATIONAL ENTREPRENEURSHIP AND MANAGEMENT JOURNAL	2010	This study investigated influences on the idea creation, risk taking, and proactiveness perceptions of upper managers in Thailand.	Expectancy Theory	105 managers	Thailand	Multivariate Regression Analysis (GLM)
Stam, E.	Knowledge and entrepreneurial employees: a country-level analysis	SMALL BUSINESS ECONOMICS	2013	To study where entrepreneurial opportunities come from and in which organizational setting are they recognized and pursued.	Knowledge Spillover Theory of Entrepreneurship	Data from GEM 2012, UNESCO, and International Labour Organization	Cross-country	Multiple Regression Analysis

Sun, B.; Liu, Y.	Business model designs, big data analytics capabilities and new product development performance: evidence from China	EUROPEAN JOURNAL OF INNOVATION MANAGEMENT	2020	To study how do BM designs affect NPD performance.	Activity Systems perspective	Survey to 208 Chinese firms,	China	Multiple Regression Analysis
Sun, S. L.; Yang, X.; Li, W.	Variance-enhancing corporate entrepreneurship under deregulation: An option portfolio approach	ASIA PACIFIC JOURNAL OF MANAGEMENT	2014	To examine the relationship between deregulation and corporate entrepreneurship.	The Option Portfolio Approach	526 Chinese listed firms in five innovative industries from 2001 to 2005. Wind database for the years 2001 to 2005 (unbalanced 2,360 observations in total) Deregulation Index.	China	Negative Binomial Regression Analysis
Tang, G.; Wei, L.; Snape, E.; Ng, Y. C.	How effective human resource management promotes corporate entrepreneurship: evidence from China	INTERNATIONAL JOURNAL OF HUMAN RESOURCE MANAGEMENT	2015	This study was designed to extend that reasoning by linking SHRM with a devolved management style and to test whether or not such a style might promote corporate entrepreneurship.	Resource-based View	Survey to 201 firms, 104 (52%) were state-owned, 26 (13%) were foreign-invested and 71 (35%) were private firms.	China	Structural Equation Modelling
Tang, G.; Yu, B.; Chen, Y.; Wei, L.	Unpacking the mechanism linking market orientation and corporate entrepreneurship: the mediating role of human resource management strength	ASIA PACIFIC JOURNAL OF MANAGEMENT	2019	To examine how a strong HRM system designed based on market orientation translate the market-oriented strategy into corporate entrepreneurship.		Survey to 97 CEOs, CFOs and also 220 employees in 97 Chinese companies.	China	Structural Equation Modelling
Tang, Z.; Hull, C.	An investigation of entrepreneurial orientation, perceived environmental hostility, and strategy application among chinese smes	JOURNAL OF SMALL BUSINESS MANAGEMENT	2012	To answer the following questions: How do Chinese entrepreneurial SMEs per- ceive environmental hostility when industry competition is taken into con- sideration?; (2) how does this perceived environmental hostility affect these firms' choices of strategies?	Contingency theory	170 cases survey	China	Multiple Regression Analysis

Thomas, N.; Randolph, A.; Marin, A.	A network view of entrepreneurial cognition in corporate entrepreneurship contexts A socially situated approach	MANAGEMENT DECISION	2020	To propose a formal model in which information acquisition, distribution and interpretation are tested as a function of cognition-based trust, perceived expertise and tie strength between organizational members in two different corporate entrepreneurship (CE) types.	Organizational Learning	Survey to 309 employees working in different industries in India.	India	Multiple Regression Analysis (quadratic assignment procedure (MRQAP)
Turro, A.; Urbano, D.; Peris-Ortiz, M.	Culture and innovation: The moderating effect of cultural values on corporate entrepreneurship	TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE	2014	To analyze the environmental factors that condition innovation within the firms. Specifically, the study determines themoderating effect ofcultural values on corporate entrepreneurship.	Institutional Theory	Global Entrepreneurship Monitor (GEM) database from the years 2004–2008	Cross-country	Logistic Regression Analysis
Urban, B.	The effect of pro-entrepreneurship architecture on organisational outcomes	JOURNAL OF BUSINESS ECONOMICS AND MANAGEMENT	2012	This study aims to capture and verify the presence and strength of an en-trepreneurial strategic vision as a defining mind-set shared by the owner managers, with the entrepreneurial orientation (EO) construct.		Survey to 532 owner managers.	South Africa	OLS regression analysis
Urban, B.; Wood, E.	The innovating firm as corporate entrepreneurship	EUROPEAN JOURNAL OF INNOVATION MANAGEMENT	2017	To formulate and test an integrative model of corporate entrepreneurship.		Survey to 784 firms from the South African financial system.	South Africa	Structural Equation Modelling
Urban, B.; Wood, E.	The importance of opportunity recognition behaviour and motivators of employees when engaged in corporate entrepreneurship	JOURNAL OF BUSINESS ECONOMICS AND MANAGEMENT	2015	The study focuses on understanding opportunity recognition behaviours and motivators of employees and how these perceptions may influence corporate entrepreneurial activity.	Theory of Opportunity Recognition	Survey to 187 firms in the financial sector industry.	South Africa	Structural Equation Modelling

Urbano, D.; Alvarez, C.; Turro, A.	Organizational resources and intrapreneurial activities: an international study	MANAGEMENT DECISION	2013	To analyse the influence of resources and capabilities on the probability of becoming an intrapreneur, using resource-based theory as a conceptual framework.	Resource-based View	Global Entrepreneurship Monitor.	Cross-country	Logistic Regression Analysis
Wales, W. J.; Shirokova, G.; Sokolova, L.; Stein, C.	Entrepreneurial orientation in the emerging Russian regulatory context: the criticality of interpersonal relationships	EUROPEAN JOURNAL OF INTERNATIONAL MANAGEMENT	2016	The present research examines the understudied impact of the regulatory environment on the manifestation of Entrepreneurial Orientation (EO) among firms within an emerging market context.	Institutional Theory	Survey to 432 Russian Small and Medium-Sized Enterprises.	Russia	Hierarchical Regression Analysis
Wan, W.; Liu, L.; Wang, X.	How user-driven innovation and employee intrapreneurship promote platform enterprise performance	MANAGEMENT DECISION	2020	To investigate the impact of user-driven innovation (UDI) and employee intrapreneurship (EI) on the innovation performance of platform enterprises through the mediating role of market intelligence responsiveness (MIR) and the moderating role of knowledge and information resource acquisition (KRA and IRA, respectively) between MIR and innovation performance.	Resource-based View	Survey to 167 platform enterprises in northern, eastern and southern China.	China	Structural Equation Modelling
Wang, E. S. T.; Juan, P. Y.	Entrepreneurial Orientation and Service Innovation on Consumer Response: A BandB Case	JOURNAL OF SMALL BUSINESS MANAGEMENT	2016	The effect of EO and service-innovative performance on consumer-level responses.		401 dyadic sample data were collected from both bed-and-breakfast (BandB) innkeepers and corresponding consumers.	Taiwan	Structural Equation Modelling
Wang, Z.-M.; Wang, S.	Modelling regional HRM strategies in China: An entrepreneurship perspective	INTERNATIONAL JOURNAL OF HUMAN RESOURCE MANAGEMENT	2008	The main objective of this study was to test the effects of strategic entrepreneurship and HRM practices on organizational performance.	Resource-based View	Survey to 103 firms from 11 different cities and provinces.	China	Hierarchical Regression Analysis

Wei, L .Q.; Ling, Y.	CEO characteristics and corporate entrepreneurship in transition economies: Evidence from China	JOURNAL OF BUSINESS RESEARCH	2015	To examine the importance of CEOs' institution-related characteristics, which reflect their human and relational capital, for corporate entrepreneurship in transition economies.	Social Capital Theory	Survey to 198 firms.	China	Hierarchical Regression Analysis
Widya-Hasuti, A.; Mardani, A.; Streimikiene, D.; Sharifara, A.; Cavallaro, F.	The role of process innovation between firm-specific capabilities and sustainable innovation in SMEs: empirical evidence from indonesia	SUSTAINABILITY	2018	To determine the mediating role of process innovation between firm-specific capabilities and sustainable innovation, and whether the specific capabilities of SMEs can activate process innovation for sustainable innovation achievement, particularly in developing countries such as Indonesia.	Dynamic Capabilities View	Suervey and interview to 190 firms	Indonesia	Structural Equation Modelling (PLS)
Wu, C. W.	Global-innovation strategy modeling of biotechnology industry	JOURNAL OF BUSINESS RESEARCH	2013	This study investigates whether firm entrepreneurship, learning orientation, and R&D innovation strategy are in terms of predicting future performance in the biotechnology industry context.	Resource-based View	Survey to 254 firms.	Taiwan	Structural Equation Modelling
Wu, H. L.; Lin, B. W.; Chen, C. J.	Examining governance-innovation relationship in the high-tech industries: monitoring, incentive and a fit with strategic posture	INTERNATIONAL JOURNAL OF TECHNOLOGY MANAGEMENT	2007	This study aims to complement the prior institutional approach by addressing how a firm's internal governance, via board competence and managerial incentives, shapes innovation performance.	Agency Theory	Survey to 178 Taiwanese firms in the high-tech industries.	Taiwan	Hierarchical Regression Analysis
Xu, H.; Guo, H.; Zhang, J.; Dang, A.	Facilitating dynamic marketing capabilities development for domestic and foreign firms in an emerging economy	JOURNAL OF BUSINESS RESEARCH	2018	To investigate the antecedents of building strong DMCs from the perspectives of both external (inter-or-ganizational relationships) and internal factors (entrepreneurial or- ientation).	Dynamic Capabilities view	Survey to 225 firms	China	Structural Equation Modelling

Yiu, D. W.; Hoskisson, R. E.; Bruton, G. D.; Lu, Y.	Dueling institutional logics and the effect on strategic entrepreneurship in chinese business groups	STRATEGIC ENTREPRENEURSHIP JOURNAL	2014	This study examines the dueling institutional logics that simultaneously operated as business groups wereimplemented to foster strategic entrepreneurship activities in China	Institutional Theory	Data from National Statistics Bureau, 1,095 firms	China	Multiple Regression Analysis
Yiu, D. W.; Lau, C. M.	Corporate entrepreneurship as resource capital configuration in emerging market firms	ENTREPRENEURSHIP THEORY AND PRACTICE	2008	To examine how firms in emerging markets configure and transform different types of network resource capital for the realization of firm performance via carrying out different corporate entrepreneurial actions.	Dynamic Capabilities View	Survey to 458 firms	China	Structural Equation Modelling
Yu, A.; Lumpkin, G. T.; Parboteeah, K. P.; Stambaugh, J. E.	Autonomy and family business performance: The joint effect of environmental dynamism and national culture	INTERNATIONAL SMALL BUSINESS JOURNAL-RESEARCHING ENTREPRENEURSHIP	2019	To investigate the relationship between autonomy and performance among family firms experiencing contrasting cultural contexts and varying levels of environmental dynamism.		Survey to 71 US small firms and 247 Taiwanese small firms	Taiwan	Moderated Multiple Regression.
Yuan, W.; Bao, Y.; Olson, B. J.	CEOs' ambivalent interpretations, organizational market capabilities, and corporate entrepreneurship as responses to strategic issues	JOURNAL OF WORLD BUSINESS	2017	To explore the moderating effect of organizational market capabilities on the relationship between CEOs' ambivalent interpretations of strategic issues in a macro crisis and corporate entrepreneurship responses to cope with the crisis (CE thereafter).	Heuristic-systematic Model (HSM)	Survey to 170 firms in mainland China	China	Stepwise Hierarchical Moderated Regression Analysis
Yunis, M.; Tarhini, A.; Kassar, A.	The role of ICT and innovation in enhancing organizational performance: The catalysing effect of corporate entrepreneurship	JOURNAL OF BUSINESS RESEARCH	2018	To study the relationship between ICT adoption and/or use and innovation level on one hand and a firm's corporate entrepreneurship innovation and performance on the other.	Dynamic Capabilities View	Survey to 374 employees and managers, both middle and senior level, working in organizations that had adopted ICT	Lebanon	Structural Equation Modelling
Zhai, Y. M.; S., W. Q.; Tsai, S. B.; Wang, Z.; Zhao, Y.; Chen, Q.	An empirical study on entrepreneurial orientation, absorptive capacity, and smes' innovation performance: a sustainable perspective	SUSTAINABILITY	2018	This study discusses the relationship between entrepreneurial orientation, absorptive capacity, environmental dynamism, and corporate technological innovation performance.	Theory of Technological Innovation	Survey to 324 small and medium-sized enterprises (SMEs)	China	Hierarchical Regression Analysis

Appendix 2. List of countries

Developed countries	Transition countries	Developing countries	
Australia	Albania	Afghanistan	Lesotho
Austria	Bosnia and Herzegovina	Algeria	Liberia
Belgiuma	Montenegro	Angola	Libya
Canada	North Macedonia	Argentina	Madagascar
Denmark	Serbia	Bahamas	Malawi
Finlanda	Armenia	Bahrain	Malaysia
Francea	Azerbaijan	Bangladesh	Maldives
Germany	Belarus	Barbados	Mali
Greece	Georgiaa	Belize	Mauritania
Iceland	Kazakhstan	Benin	Mauritius
Ireland	Kyrgyzstan	Bhutan	Mexico
Italy	Republic of Moldova	Bolivia	Mongolia
Japan	Russian Federation	Botswana	Morocco
Luxembourg	Tajikistan	Brazil	Mozambique
Netherlands	Turkmenistan	Brunei Darussalam	Myanmar
New Zealand	Ukraineb	Burkina Faso	Namibia
Norway	Uzbekistan	Burundi	Nepal
Portugal	Montenegro	Cabo Verde	Nicaragua
Spain	North Macedonia	Cambodia	Niger
Sweden	Poland	Cameroon	Nigeria
Switzerland	Republic of Moldova	Central Africa	Oman
United Kingdom	Romania	Central African Republic	Pakistan
United States	Russian Federation	Chad	Panama
Bulgaria	Serbia	Chile	Papua New Guinea
Croatia	Slovakia	China	Paraguay
Cyprusa	Slovenia	Colombia	Peru
Czechia	Tajikistan	Comoros	Philippines
Estonia	Turkmenistan	Congo	Qatar
Hungary	Ukraine	Congo	Republic of Korea
Latvia	Uzbekistan	Costa Rica	Rwanda
Lithuaniaa		Côte d'Ivoire	Samoa
Maltaa		Cuba	Sao Tome and Prinicipe
Poland		Democratic	Saudi Arabia
Romania		Djibouti	Senegal
Slovakia		Dominican Republic	Sierra Leone
Slovenia		Ecuador	Singapore
		Egypt	Solomon Islands
		El Salvador	Somalia
		Equatorial Guinea	South Africa
		Eritrea	South Asia

		Eswatini	South Sudan
		Ethiopia	Sri Lanka
		Fiji	State of Palestine
		Gabon	Sudan
		Gambia	Suriname
		Ghana	Syrian Arab Republic
		Guatemala	Taiwan Province of China
		Guinea	Tanzania
		Guinea-Bissau	Thailand
		Guyana	Timor-Leste
		Haiti	Togo
		Honduras	Trinidad and Tobago
		Hong Kong SAR	Tunisia
		India	Turkey
		Indonesia	Uganda
		Iran	United Arab Emirates
		Iraq	United Republic
		Israel	Uruguay
		Jamaica	Vanuatu
		Jordan	Venezuela
		Kenya	Viet Nam
		Kiribati	West Africa
		Kuwait	Yemen
		Lao	Zambia
		Lebanon	Zimbabwe

*Based on World Economic Situation Prospects report