Antecedents, process, and outcomes of entrepreneurial teams. An institutional approach.

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Dissertation submitted in part fulfilment of the requirements for the degree of Doctor of Philosophy in Business and territorial competitiveness, innovation, and sustainability of University of Deusto (European PhD Degree).

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San Sebastian, September 24th, 2021

Deusto
Universidad de Deusto
University of Deusto

Doctoral Programme in Business and territorial competitiveness, innovation, and sustainability

José Luis González-Pernía, Associate Professor at Deusto Business School in Donostia-San Sebastián and Javier Montero Villacampa, Assistant Professor at University of Zaragoza,

CERTIFY:

That the present dissertation *Antecedents, process, and outcomes of entrepreneurial teams. An institutional approach* has been carried out under their direction, at Deusto Business School of the University of Deusto, by Nathaly Pinzón Rubio and constitutes her doctoral thesis.

For the record, in compliance with current legislation, authorises the presentation of the thesis to the Academic Committee of the University of Deusto, by signing this certificate,

San Sebastián, September 24th, 2021.

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Javier Montero Villacampa

To my parents

Contents

List of figures

List of tables

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Abstract

This dissertation studies the phenomenon of entrepreneurial teams. Specifically, it investigates (1) the decision to form entrepreneurial teams and the influence that context has on that decision; (2) the new venture creation process and the differences experienced in such by individual entrepreneurs and entrepreneurial teams; and (3) the outcomes of ventures created by both groups in terms of innovation, internationalisation, and employment generation. To address these issues, this research is based on several literature streams and proposes two sets of hypotheses and one set of propositions.

The first group of hypotheses, which cover the first part of the theoretical framework, analyses how certain individual attributes of entrepreneurs influence the likelihood of creating an entrepreneurial team (instead of starting a new venture alone). Although a rich body of literature about entrepreneurial teams' creation has focussed on the formation of teams, the role played by their context, specifically their culture, has not been studied empirically (Lazar et al., 2019). Consequently, the first objective of this dissertation is to analyse the influence of individuals' characteristics on the propensity to form entrepreneurial teams and how their cultural contexts moderate such relationships. Apart from the individuals' factors suggested in the literature to explain why some entrepreneurs decide to form a team and others do not, the present dissertation shows that an individualistic culture negatively moderates the decision to create teams.

The set of propositions, which covers the second part of the theoretical framework of this thesis, permits the analyses of the differences between the new venture creation process developed by individual entrepreneurs and entrepreneurial teams. Both groups make different decisions about the activities to be performed during the process, their order, and their timing, all of which

influence the results of the process. Despite the different paths followed by both groups of entrepreneurs (individuals and teams), when they perform activities in the entrepreneurial process, patterns can be established from its analysis. Most of the literature on the new venture creation process has essentially analysed its results (Delmar & Shane, 2004a; Shane & Delmar, 2004), such as whether a new venture succeeds or fails. Little attention has been given to when these significant endpoints are accomplished or what could speed the emergence process of a new venture (Tornikoski & Renko, 2014). Thus, this part of the dissertation sheds light on comparing the process that teams vs. individuals perform in terms of the activities carried out, including their order and their timing, the results of the new venture creation process, and the time to reach those results.

Finally, the second set of hypotheses, which refers to the third part of the theoretical framework, addresses the impact of new ventures comparing the outcomes of firms created by individual entrepreneurs and entrepreneurial teams. The impact of the entrepreneurial activity is measured by considering their capacity to introduce innovations, to compete in international markets, and to create jobs from their very early stages. However, many new firms have limited potential impact, and public policies should concentrate on recognising and promoting entrepreneurial projects with growth potential (Delmar & Wiklund, 2008; Shane, 2009). Moreover, the contextual antecedents of the institutional environment influence the capacity of new firms to have a quality impact in a region. Although the quality impact of new firms created by teams has received considerable attention by scholars, research reveals conflicting results (Jin et al., 2017) about the role of the context, and its impact on firm outcomes has not been sufficiently analysed (Capelleras et al., 2019). Consequently, this part of the dissertation provides empirical evidence that entrepreneurial teams create more innovative, internationalised, and high employment growth firms than do individual entrepreneurs and that economic freedom positively moderates such relationships.

All three issues are developed in this manuscript, which follows a conceptual framework that is explained in the first chapter. The second chapter develops the theoretical framework of this dissertation and presents the formulated hypotheses and propositions. The third chapter describes the databases employed for this dissertation. Chapters Four, Five and Six include three different empirical studies that cover the three parts of the theoretical framework. Those three chapters describe the data, variables and methodology employed in each empirical study, and they discuss the results obtained. Finally, Chapter Seven presents the conclusions, covering the main findings, limitations, and recommendations for entrepreneurs and policy makers.

Chapter 1: Introduction

1.1 Background

Entrepreneurship is an important factor for national economic growth due to its effect on innovation and employment (Acs & Audretsch, 1990; Baumol, 1996; Wong et al., 2005). Indeed, entrepreneurship leads to the technological development, economic growth, and social mobility of a country (Lazar et al., 2019). Then, it influences the national economy at the micro and macro levels. At the micro level, it affects individuals and/or firms, and at the macro level, it impacts countries' economies.

Individuals with specific demographic, economic and perceptual characteristics that discover, evaluate and exploit opportunities are defined as "entrepreneurs" (Shane & Venkataraman, 2000). Entrepreneurs act as facilitators of economic activity by transforming unexploited profit opportunities into marketable products and services (Arenius & Minniti, 2005). At the firm level, entrepreneurship acts as a key conduit of knowledge spill overs. Knowledge created in one organisational context that remains uncommercialised because a firm does not value its innovation potential allows employees to create a new, innovative firm.

At the country level, entrepreneurship has an important influence because it not only increases quantities of labour, capital and knowledge but also improves the allocation of these factors throughout the economy (Acs & Armington, 2004). The theoretical literature suggests that entrepreneurship may contribute to growth through a diverse range of behaviours, including innovation, resource combination and increased competitive pressures. Business creation and innovation are important determinants of national economic growth in developing and developed countries (Wong et al., 2005).

Entrepreneurship has been analysed from an individualist approach in traditional entrepreneurship literature. Shane & Venkataraman (2000) incorporate the study of individuals

who discover, evaluate, and exploit opportunities into the entrepreneurship research. According to their structure, entrepreneurial behaviour must be recognised as the connection of two situations: the presence of lucrative opportunities and the existence of individuals. This individualist view is shared by the leading economic theories of entrepreneurship and provides the major economic foundations for the field of entrepreneurship research (Harper, 2008). In those theories, the individual is the basic unit of analysis, and only individuals can make judgemental (i.e., entrepreneurial) decisions regarding the coordination of scarce resources. Moreover, entrepreneurial discovery tends to be an individualist phenomenon because entrepreneurs are the most alert individuals in a society, and alertness is an individual's propensity (noncollective) to notice opportunities. In summary, the leading economic theories of entrepreneurship locate the entrepreneurial function within a single person (Harper, 2008).

This view has led to the myth of the entrepreneur as a lone hero (Cooney, 2005). However, alongside this concept is a group of people who help in the development of an entrepreneurial idea. Gartner (1985) stated that "the entrepreneur in entrepreneurship is more likely to be plural, rather than singular. The locus of entrepreneurial activity often resides not in one person, but in many". Instead of starting with a single founder, many new companies are created by **entrepreneurial teams**—defined as two or more individuals who pursue a new business idea, who share ownership, and who each play a significant role in management and have a direct influence on the strategic choices of the firm at the time of founding (Bolzani et al., 2019; Lazar et al., 2019).

Entrepreneurial teams perform better than do individual entrepreneurs in terms of greater employment generation, higher innovation levels and higher profit levels (Chowdhury, 2005; Reynolds, 2011; Shane, 2009). Subsequently, the decision to form entrepreneurial teams is important because it can define the potential outcome of new ventures and therefore the social

and economic impact of entrepreneurship. Despite its relevance, not all entrepreneurs create a team. Some simply begin a venture as a matter of necessity and develop their venture alone (Lau & Busenitz, 2001; Reynolds, 1997).

Even though many new ventures are founded by teams, entrepreneurial teams only attracted scholarly attention in the late 1970s, when scholars started challenging the myth of the lone entrepreneur (Timmons, 1975). Later, in 1985, Gartner stated that new business formation was a team activity, and in 1990, Kamm et al. suggested that teams were a fruitful research area. However, researchers did not begin to focus on the phenomenon until the 2000s. Scholars have been studying the formation of entrepreneurial teams and the relationships between entrepreneurial teams' characteristics and outcomes. Despite the extended literature that has studied entrepreneurial teams (Bolzani et al., 2019; Lazar et al., 2019), still not completely understood are the differences between individual entrepreneurs' and entrepreneurial teams' new firm creation processes and the outcomes and influence of regional or national contexts on different entrepreneurial activities (Capelleras et al., 2016; Lazar et al., 2019; Tornikoski & Renko, 2014).

Another current within the literature is the study of the preceding stage of entrepreneurial team formation, that is, the process through which founders establish a team to start a new venture. This process includes the recruitment of cofounders by the first founder and the attraction of cofounders. It identifies two origins based on whether a single person or a group identifies a business opportunity and decides to create a new venture (Harper, 2008; Kamm & Nurick, 1993a). The implicit debate relates to the question of which comes first: the idea or the team. The lead entrepreneur is first motivated to create a new venture due to intrinsic aspirations, an identified business opportunity, and/or environmental push/pull factors, and this person subsequently searches for cofounders to shape the new venture and realise the opportunity

(Harper, 2008; Schad et al., 2016). In contrast, the origin of groups proposes that new venture creation results from the desire to work with preferable others or because preformed groups working on (research or innovation) projects seek to create a new venture together (Agarwal et al., 2015; Discua Cruz et al., 2013). In both approaches, entrepreneurs establish teams with trusted others. When building a new venture, entrepreneurs select both the venture (business idea) to develop and the partners with whom to work (Discua Cruz et al., 2013; Harper, 2008). These decisions are influenced by the contexts in which entrepreneurs develop their projects. The literature has theoretically argued for the influence of national culture on the early formation phase of entrepreneurial teams; however, there are no empirical studies on this influence (Lazar et al., 2019). Therefore, investigating the early formation phase of entrepreneurial teams provides a unique opportunity to understand the initial stage of the team development process and leads to the creation of new ventures (Bolzani et al., 2019; Lazar et al., 2019).

Scholars are interested in new ventures not only because they are a crucial source of job creation but also because new firm creation is an important career option for individuals. However, the emphasis on the creation of new ventures can represent a partial view, since long before their creation, many ventures disappear. From this perspective, understanding the elements of the new venture creation process that enable new ventures' survival is a key point to better determine the entrepreneurial contribution to society. Several authors propose that the study of this process, although not highly addressed by research in the field, is the epicentre of the debate on the nature of entrepreneurship (Moroz & Hindle, 2012).

A process is defined as all activities and actions associated with identifying opportunities and creating the organisations to pursue them (Bygrave & Zacharakis, 2004; Davidsson, 2016; McMullen & Dimov, 2013; Salamzadeh, 2015; Shane & Venkataraman, 2000). Academic

research in the venture creation process began in 1985 when Gartner proposed a challenging view to understand entrepreneurship as a process. This view of entrepreneurship as a process has dominated the literature and has served as a basis for including activities and temporal dimensions in the analysis of new venture creation(Bird, 1992; Carter et al., 1996a; Davidsson & Honig, 2003a; Delmar & Shane, 2004a; Low & MacMillan, 1988; McMullen & Dimov, 2013; Reynolds & Miller, 1992a; Wood et al., 2019).

Studies show that a prevailing quantitative methodological bias obtains in all areas of entrepreneurship research because entrepreneurship begins with a discontinuous, nonlinear (and usually unique) event. However, even though the start and development of a new venture creation process have their own characteristics and do not follow a unique sequence of activities, patterns can be established from its analysis. Nevertheless, most literature on the entrepreneurship process has basically studied the outcomes of the process (Delmar & Shane, 2004a; Shane & Delmar, 2004), such as whether a new firm was created. Little attention has been given to when significant milestones are achieved or what could accelerate the process of emergence (Tornikoski & Renko, 2014).

Another important factor to include in the analysis of the new venture creation process is the relevance of decisions and activities followed by teams compared to those followed by individual entrepreneurs. According to Bolzani, the presence of entrepreneurial teams can impact start-ups in terms of the processes they follow when establishing new businesses, the timing of the activities in that process and even the decision to exit the process (Bolzani et al., 2019).

Some of the differences between the new venture creation process followed by individual entrepreneurs and entrepreneurial teams lie in teams' greater ability to discover and exploit new

opportunities, garner larger social networks and access more resources when compared to individuals (Aldrich & Kim, 2007; Chandler et al., 2005; Klotz et al., 2014; Penrose, 1995; Ruef, 2010; Wasserman, 2012). The process followed by each group to establish a new firm includes a selection of key activities and a decision of the order in which to perform them and the timing for their performance, which are essential for the new ventures' survival. Tornikoski & Renko (2014) state that it is important to understand why some entrepreneurs can act more quickly than others and with different results when setting up a new venture.

In addition, scholars have been studying new ventures because they are a critical source of employment, enhanced productivity, and innovation. However, not all new firms contribute to the economy and society as they are supposed to. Consequently, a question arises: Should public policies encourage all entrepreneurial activity?

This question requires an answer because most people who start new businesses are not entrepreneurs of businesses that grow and generate employment and wealth. Shane (2009) argues that when public policies indiscriminately encourage the creation of new businesses, they disproportionately stimulate more entrepreneurial activity in industries with lower barriers to entry and high failure rates. Therefore, Shane (2009) recommends that governments move away from subsidising the mere formation of new businesses and focus on identifying and encouraging entrepreneurial projects with growth potential. In this regard, policy makers need to recognise that entrepreneurs differ and that only a few of them create new businesses with a significant economic impact. This impact translates into competitive businesses with the potential to innovate, to create jobs and to export their products or services to other markets. In this way, being able to identify the kinds of entrepreneurs who create firms that grow is fundamental to discovering their contribution to society and its economy. Although the determinants of new competitive businesses have been studied, the influence of the national

context on the prevalence of this type of new business has not been satisfactorily analysed (Capelleras et al., 2019).

In general, entrepreneurial activity, understood as the propensity of individuals to create new firms, is influenced by the interaction between the individual (micro) antecedents of entrepreneurs and the contextual (macro) conditions of the institutional environment in which they make decisions (Autio & Acs, 2010; Capelleras et al., 2019; Donaldson, 2021; Fuentelsaz et al., 2018a; van der Zwan et al., 2016). A person's entrepreneurial behaviour depends on microlevel factors that vary across individuals, as well as macrolevel factors that are related to institutions and that fluctuate across geographical and social contexts. Countries usually represent the geographical and social contexts in which institutions make a difference.

To conclude, despite the existence of a rich body of literature on entrepreneurial teams—including the incipient process of the team's formation, the new venture formation process, and its subsequent performance –, it is not yet completely understood, and there are knowledge gaps. The present dissertation is aimed at contributing to this emerging field by analysing three main areas: first, to determine the likelihood of being an entrepreneur as a team rather than alone and the way in which context influences this likelihood; second, to compare the new venture formation process followed by individual entrepreneurs and entrepreneurial teams; and third, to assess the different outcomes of entrepreneurial teams and individual entrepreneurs in terms of innovation, internationalisation, and employment generation and the influence of the context on these outcomes. The research questions related to these three main subjects are formulated in the next section.

1.2 Research questions

Research in entrepreneurship in the last twenty years has evolved in its analytical focus. In the 1970s and 1980s, the emphasis was on an entrepreneur's characteristics and the importance of the individual entrepreneur in both venture creation and growth. However, most new ventures are created by teams; consequently, the entrepreneurship research has been more diversified in terms of both research topics and methodology, including entrepreneurial teams and the role it plays in venture development. Nevertheless, the literature has evolved in a fragmented way (Bolzani et al., 2019; Lazar et al., 2019).

The literature has researched entrepreneurial teams' formation, its development, the key relationships between the teams, and the new business formation process as well as its subsequent performance. In the incipient process of entrepreneurial teams' formation, scholars have studied the processes by which and the contexts within which entrepreneurial teams originate. Among the contexts, the sociocultural environment has been studied from a theoretical perspective, confirming its influence on the origin of teams. However, no empirical study has been made on the role of national contexts, specifically, national cultures, on the formation of teams (Lazar et al., 2019). Given the importance of context in the analysis of entrepreneurship, it is necessary to measure it to have more precise answers about the phenomenon and to be able to define more appropriate public policies than those currently in place. Additionally, scholars have studied the new business formation process focussing on its results (i.e., whether a new business emerges). However, the activities and timing necessary for a new business to emerge are not completely clear (Tornikoski & Renko, 2014). This finding implies that opportunities and challenges remain in the analysis of the business creation process (Davidsson & Gruenhagen, 2020). The analysis of the results of the business creation process represents a partial view. As most new firms die during the process, their survival can benefit

from knowing the activities that accelerate the process before reaching an endpoint. It is not clear how the process trajectory and timing to create a new business differ between individual entrepreneurs and entrepreneurial teams. Finally, regarding the outcomes of new firms, the differences between the types of new firms created by individual entrepreneurs and those created by entrepreneurial teams are not completely understood. Additionally, the role of context and its impact on this latter issue have not been sufficiently analysed (Capelleras et al., 2019).

This dissertation aims to contribute to the literature by analysing certain unexplored antecedents in the decision to form entrepreneurial teams and the moderating influence of culture on this decision. Additionally, this research analyses the new business formation process, focussing on the differences experienced by individual entrepreneurs and entrepreneurial teams, which include the types of activities selected, their order, and their timing. Finally, it complements the above with a view of the results of the process followed by both groups at a firm level and how these results are impacted by their contexts. This approach is summarised in the following research questions, which are theorised in Chapter 2 and tested in three different empirical studies in Chapters 4, 5 and 6.

Antecedents: theoretical development in Chapter 2 (2.1) and empirical study in Chapter 4:

> Why do some entrepreneurs develop their projects by building a team instead of starting a business alone?

Process: theoretical development in Chapter 2 (2.2) and empirical study in Chapter 5:

> What are the differences between the new venture creation process of individual entrepreneurs and entrepreneurial teams and their results?

Outcomes: theoretical development in chapter 2 (2.3) and empirical study in chapter 6:

> What are the differences between firms' outcomes created by individual entrepreneurs and entrepreneurial teams?

These research questions represent the foundations of the conceptual framework of this dissertation developed in the next subsection.

1.3 Conceptual framework

The present study enhances the stream of literature on entrepreneurial teams by examining how individual and contextual factors influence the propensity of forming entrepreneurial teams; the comparison between the type of new venture creation process activities; their timing and the order that entrepreneurs and entrepreneurial teams follow; the results of the new venture creation process and the timing for reaching those results; and the influence that the country-level context has on firm performance in terms of innovation, internationalisation, and employment generation.

When analysing contextual antecedents, the entrepreneurship literature has studied institutions, which define the rules that regulate political, social, and economic relationships in a society (Welter, 2011). The institutions are classified as formal or informal. The former includes constitutions, laws, economic rules, property rights and contracts, whereas the latter include values, norms, sanctions, taboos, and traditions (Veciana & Urbano, 2008). Entrepreneurial activities are highly conditioned by informal and formal institutions. Among informal institutions, culture shapes an individual's propensity to form an entrepreneurial team; however, according to Lazar et al. (2019), no empirical papers include culture as part of determining the propensity of forming entrepreneurial teams. Among formal institutions,

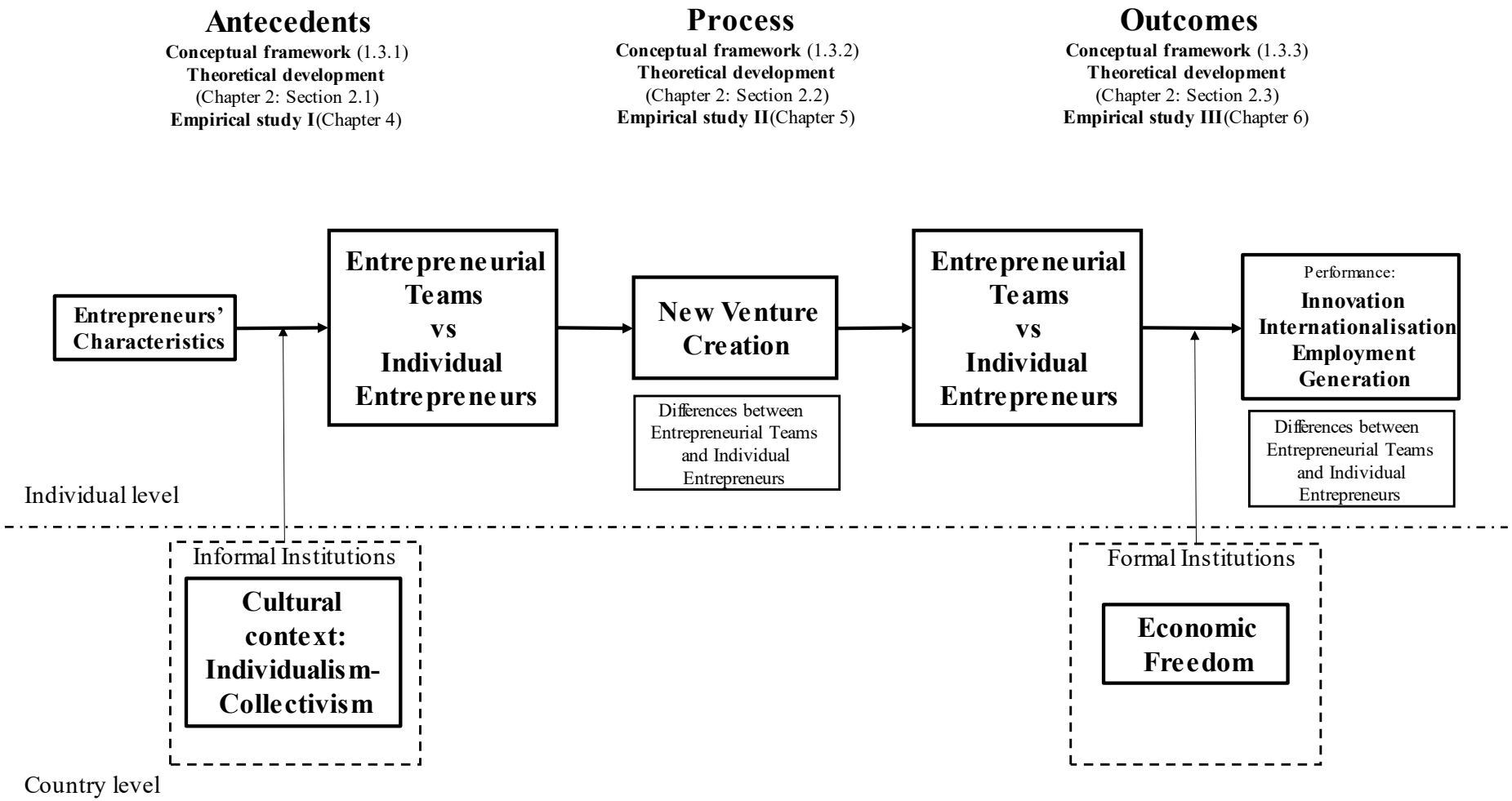
economic freedom is used by scholars; however, its influence on firm outcomes has not been sufficiently analysed (Capelleras et al., 2019).

In response to these knowledge gaps, first, this dissertation studies the **antecedents** of the decision to form entrepreneurial teams (Harper, 2008; Kamm & Nurick, 1993a). Specifically, it analyses the influence that individual characteristics have on the propensity to form an entrepreneurial team and how culture moderates such relationships. Second, regardless whether individuals decide to build their idea by themselves or join a team, the **process** of new business formation includes a set of steps (Gartner, 1985; P. Reynolds & Miller, 1992b; Tornikoski & Renko, 2014) that individuals or entrepreneurial teams perform differently. Consequently, this dissertation compares the process of new business creation between individuals and entrepreneurial teams in terms of activities, results, and their timing. Finally, this dissertation compares the types of firms that entrepreneurial teams and individual entrepreneurs create in terms of innovation (Ruef et al., 2003; Walter et al., 2016), internationalisation (Lafuente et al., 2015; X. Li et al., 2016; Meewella, 2015) and, employment generation (Federico et al., 2012; Ganotakis & Love, 2012; Thiess et al., 2016), and the influence of economic freedom on these different **outcomes**.

In this way, this thesis responds to calls for research on entrepreneurial teams that integrates a multilevel analysis (Autio et al., 2013; Capelleras et al., 2018; Lazar et al., 2019; Pinillos & Reyes, 2011) to support and test new hypotheses.

Figure 1 shows the conceptual framework of this dissertation, which is described in the following subsections, beginning with the antecedents of forming entrepreneurial teams in Section 1.3.1. The conceptual framework for the process of new venture creation is described in Section 1.3.2, and finally, Section 0 explains the outcomes of new firms.

Figure 1: Conceptual framework of the dissertation.



Source: Own elaboration

1.3.1 Antecedents of forming entrepreneurial teams

One of the great myths of entrepreneurship has been the notion of the entrepreneur as a lone hero (Cooney, 2005), fighting against competitors and other environmental forces to achieve success. However, behind every great entrepreneur is always a group of people who help the dream become a reality. Rather than being established by individuals, new ventures are often the result of entrepreneurial teams (Carland et al., 1984; Cooney, 2005; Lazar et al., 2019). Indeed, many of the most successful companies in the world were created in this way: Larry Page and Sergey Brin created Google, Bill Gates and Paul Allen started Microsoft, and Steve Jobs and Steve Wozniak founded Apple, among many other examples. Wasserman (2012a) highlighted the fact that 85% of high technology start-ups were created by entrepreneurial teams with at least two members.

Members of an entrepreneurial team have two main characteristics: First, they have a significant financial interest, so they should have an important share of the ownership, and second, they manage the company daily. Several studies have noted that firms created by entrepreneurial teams are more likely to survive and experience faster growth rates than those started by individual entrepreneurs (Harper, 2008). They have a greater capacity to manage growth, to discover and exploit new opportunities, to build social networks, and to access more resources (Aldrich & Kim, 2007; Klotz et al., 2014; Ruef, 2010; Wasserman, 2012a). All these elements are key factors in the successful development of a new venture. Consequently, starting a business as a member of an entrepreneurial team rather than as an individual is an important choice.

Even though the creation of a new business by an entrepreneurial team has several advantages, many individuals still prefer to develop enterprises by themselves. The literature on

entrepreneurial teams addresses questions such as why, how, when, and where entrepreneurial teams are formed (Lazar et al., 2019). Previous research has tried to answer questions such as the following: Why are entrepreneurial teams formed? How are cofounders selected? Where do founders look for potential partners? This research explains why individuals launch new ventures with partners rather than on their own and the factors that play a role in the process.

Shane & Venkataraman (2000) describe entrepreneurship research as "the study of sources of opportunities; the processes of discovery, evaluation, and exploitation of opportunities; and the set of individuals who discover, evaluate, and exploit them". In this study, the importance of the entrepreneur's individual characteristics is highlighted. These characteristics have proven to be useful in explaining why individuals become involved in business creation and the profiles of emerging organisations. Previous researchers have highlighted the importance of the educational level of individuals and their intrapreneurial experience as factors that explain the predisposition of individuals to create entrepreneurial teams, but the findings have been inconsistent.

For example, previous studies have shown that individuals with higher levels of education are more aware of their weaknesses and therefore seek out people who complement their abilities, skills, and knowledge (Chowdhury, 2005). When an entrepreneur has a higher educational level, the likelihood is greater that they will build an entrepreneurial team. Other research has suggested that highly educated individuals are more autonomous and self-confident about their own skills and capabilities (Davidsson & Honig, 2003a), so they prefer to have complete control of their business and desire to create a new venture alone. Results also conflict regarding intrapreneurial experience. On the one hand, previous research has argued that individuals with previous intrapreneurial experience are accustomed to working as part of a team within an organisation, and they know how to manage team interactions to extract the members' full

potential (Guth & Ginsberg, 1990). For this reason, it has been suggested that intrapreneurial experience increases the likelihood of creating a team. On the other hand, some research has stressed that ventures promoting intrapreneurship foster employees' autonomy (Bosma et al., 2010), so individuals with intrapreneurial experience prefer to create new ventures on their own (Hayton, 2005).

Shane & Venkataraman (2000) emphasise that it is not possible to analyse individuals without considering the contexts in which they operate. Indeed, Lazar et al. (2019) demonstrate that one fertile area of research is the analysis of how contextual factors shape the formation of teams. One of the most important dimensions of context is the culture of a country (Autio et al., 2013; Busenitz & Lau, 1996a). Hofstede (1984) defines culture as "the collective programming of the mind which distinguishes the members of one human group from another… (and) includes systems of values". As an underlying value system, culture shapes the development of certain personality traits and motivates individuals in a society to engage in behaviours that may not be as prevalent in other societies (Mueller & Thomas, 2001; Donaldson, 2021). One dimension of culture that may be particularly relevant in the creation of teams is the degree of individualism in a society. This element is considered key in describing people's behaviours and attitudes (Li & Zahra, 2012), and should be understood as a continuum along which individualism and collectivism are at opposite ends (Hofstede, 2001). This dissertation focusses on this dimension because it expresses the cultural tendency to place more value on the individual or group (Hofstede, 1984), and it uses the degree of individualism as the moderating factor in the relationship between some individual factors and the likelihood of forming entrepreneurial teams.

When considering the individual-level characteristics of entrepreneurs, this research focusses on their educational level and experience, such as their entrepreneurial role within

organisations, known as intrapreneurship (Pinchot, 1985). It also concentrates on the motivational drivers of entrepreneurs, of which opportunity and necessity are the most studied classifications (Arenius & Clercq, 2005; Baker et al., 2005; Pinillos & Reyes, 2011). Specifically, this research analyses the effect of educational level and intrapreneurial experience on the likelihood of an entrepreneur forming a team as mediated by their motivation to start the new venture (i.e., opportunity vs. necessity).

The goal of this part of the dissertation is to deepen the understanding of how certain individual attributes of entrepreneurs influence the likelihood of pursuing a market opportunity as a member of an entrepreneurial team (instead of doing so alone) and how the degree of individualism of society moderates such influence. The research is relevant because entrepreneurial teams are much more frequently found in new venture creation than might be expected given the evidence presented in the entrepreneurship literature, and they strongly shape new ventures' performance (Cooney, 2005; Klotz et al., 2014). When an individual pursues a business idea, one of the first decisions that they must make is whether to develop their idea alone or with partners. This issue is developed theoretically in Chapter 2, Section 2.1., and empirically in Chapter 4.

This part of the study uses data on individual factors provided by the Global Entrepreneurship Monitor (GEM) project and Hofstede Index to access country informal institutions with respect to culture over the period 2014–2017.

1.3.2 Process of new venture creation: individual entrepreneurs vs entrepreneurial teams

A venture's journey, from the development of an idea to establishment as a firm, follows a process that is started when an individual or an entrepreneurial team (Davidsson, 2016; McMullen & Dimov, 2013; Shane & Venkataraman, 2000) decides to participate in creating a new venture (Reynolds et al., 2004).). The conceptual development in this field was initiated in the 1980s, mainly with the seminal paper published by Gartner (1985), who proposed that new venture creation is a process with a specific number of activities. This view later became the basis for other authors to include more activities and temporal dimensions in the analysis of entrepreneurship as a process. However, empirical research emerged in the late 1990s thanks to the Panel Study of Entrepreneurial Dynamics (PSED) project (Gartner et al., 2004; Reynolds & Curtin, 2008). Precursors of the PSED project defined the conceptualisation of the business creation process, incorporating the definition of transition points and activities. Recently, other authors have complemented it by including temporal dimensions relevant to entrepreneurial action (Davidsson & Gruenhagen, 2020; McMullen & Dimov, 2013; Wood et al., 2019).

Empirical research on the new venture creation process has shown that it is crucial for societies pursuing economic growth due to its impact on innovation and employment (Acs & Armington, 2004; Audretsch, 2004, 2007). Moreover, the process is important because it includes knowledge development. Even those ventures that fail provide learnings to society that translate into spill over entrepreneurial knowledge directly influencing entrepreneurs' decisions to create new ventures. According to the knowledge spill over theory of entrepreneurship (KSTE), knowledge generated from research and development activities performed by firms that do not exploit them economically can later be employed by new firms (Acs et al., 2013; Agarwal et al., 2004, 2007; Ghio et al., 2015).

As part of the knowledge transfer in the new venture creation process, initial decisions have substantial consequences for the subsequent development of new ventures. “Initial opportunity characteristics exercise imprinting effects on the time it takes to create new organisations” (Tornikoski & Renko, 2014). The time must be right to launch a reliable business venture with a competitive advantage, for which an entrepreneur may exclude some activities and include others (Bird, 1992; Delmar & Shane, 2004a; McMullen & Dimov, 2013).

Among the activities, the number of those selected and their sequencing and timing have a significant influence on the ability of entrepreneurs to successfully create new ventures. Entrepreneurs who have successfully created a new firm make decisions that can be identified and differentiated from the decisions of those who have failed (Carter et al., 1996a). The examination of venture formation as an evolutionary process, rather than a static event—in which activities, their sequencing and timing are selected by entrepreneurs—will lead the entrepreneurship research to develop better explanations for the development of new firms (Shane & Venkataraman, 2000).

Another important factor to include in the analysis of the new venture formation process is the importance of the decisions and processes pursued by teams compared to those pursued by individual entrepreneurs. Both groups make different decisions regarding which activities to perform during the process, their order and their timing, and those decisions influence the process’s results.

The new venture creation process begins when individual entrepreneurs or entrepreneurial teams start a new venture (conception—first transition point). The process continues with gestation, which includes start-up activities and concludes with firm birth. After firm birth, there are three possible results: new firm (reaching profits), quit the start-up effort or remain

active in the process. In general, in this part of the research, the activities, their order and their timing; the results of the new venture creation process, mainly the creation of a new firm (reaching profits); and the timing for reaching the results are contrasted. Consequently, this research aims to answer the following questions: Which activities of the business creation process differ between individual and entrepreneurial team ventures? What are the number of new venture process activities, as well as their order and timing, that are followed by individual entrepreneurs and entrepreneurial team ventures? These ideas are theoretically developed in Chapter 2, Section 2.2, while the empirical analysis is done in Chapter 5.

This part of the dissertation uses data on entrepreneurs and entrepreneurial teams provided by the PSED projects from 1998–2009. Projects to gather data on the entrepreneurship process in four countries were implemented in this period using a very similar methodology to identify the occurrence and timing of start-up activities and determine the results of the process: two projects in the United States and individual projects in Australia, China, and Sweden.

1.3.3 Outcomes of new firms: individual entrepreneurs vs entrepreneurial teams

The impact of entrepreneurial activity in a region depends on the quality of the businesses that are created. Empirical evidence indicates that the capacity of new businesses to introduce innovations, compete in international markets, or create jobs from their very early stages are some of the characteristics of entrepreneurial activity that ensure a quality impact (Bosma, 2013). However, not all business ventures are the same, nor do they have the same impact (Shane, 2009). While some businesses have the potential for high impact in terms of the innovations they bring to the market, their international market approach, or the employment they create, many businesses have limited impact potential. They are simply a source of self-employment for entrepreneurs' subsistence (Lau & Busenitz, 2001).

Three characteristics of entrepreneurial activity ensure a better impact in a region. First, the level of innovation of the new businesses that emerge from entrepreneurial activity is an indication of quality. The literature in the 1970s was dominated by the idea that innovation and technological change corresponded only to large and mature corporations and that small businesses would disappear due to their own inefficiencies. Thus, even after Birch (1981) pointed out that small firms serve as the engine of job creation for the United States, most scholars still believed that small firms might create the bulk of new jobs, but innovation and technological change remained with large firms. More recently, a vast majority of studies have challenged this conventional wisdom and have identified that small entrepreneurial firms are as important as the large established incumbents when generating innovation and technological change. Entrepreneurship and small firms play a role as conduits for the spill over of knowledge that is commercialised through innovative activity (Acs et al., 2013; Agarwal et al., 2004, 2007; Ghio et al., 2015).

Second, the international orientation of entrepreneurial activity is a relevant quality indicator that should be analysed. The development of communication and the advantages that come from it allow businesses to start a new activity and access foreign markets. However, quality initiatives have the greatest capacity to address the market globally from the earliest stages of the entrepreneurial process. Empirical evidence indicates that the early internationalisation of newly created businesses contributes to regional economic growth to a significantly greater extent than does entrepreneurial activity directed only to the domestic market (Agarwal et al., 2007; Fryges & Wagner, 2020; Gonzalez-Pernia & Pena-Legazkue, 2015).

Third, when studying the impact of entrepreneurial activity in a region, its capacity to generate employment is quite important. Therefore, at the level of social impact, the size of new businesses in terms of people employed represents a key quality indicator. Recent research has

shown that entrepreneurs who expect to extensively grow their firms in terms of job creation contribute more strongly to macroeconomic growth than does entrepreneurship in general (Hermans et al., 2015; Minniti, 2011; Stam et al., 2009).

Overall, most entrepreneurs do not create firms that generate innovation, internationalisation, and employment generation (Delmar & Wiklund, 2008; Shane, 2009). Consequently, identifying which entrepreneurs can do so is a key point for understanding the real contribution of entrepreneurship to society and the economy. Scholars have pointed out that entrepreneurial teams usually perform better than do solo entrepreneurs (Chowdhury, 2005; Reynolds, 2011; Shane, 2009) and are perhaps more influential than individual entrepreneurs on new ventures' performance, but the research results conflict (Jin et al., 2017). For instance, some research shows that individual entrepreneurs' human capital has a positive impact on new venture performance (Marvel, 2013; Unger et al., 2011); however, other research reveals that the team's aggregated level of individual human capital may or may not have a positive impact on the same outcome (Simsek et al., 2005).

Entrepreneurial activity is influenced by the interaction between the individual level of entrepreneurs and the contextual antecedents of the institutional environment in which they develop their projects (Autio & Acs, 2010; Capelleras et al., 2019; Donaldson, 2021; Fuentelsaz et al., 2018a; van der Zwan et al., 2016). This research focusses on what economic and public policy literature refers to as economic freedom, an aspect of the formal institutional environment. Economic freedom is the presence of protective rights to defend individuals against others who would invade and/or take the individuals' property (Gwartney & Lawson, 2003). Economic freedom is "the fundamental right of every human to control his or her own labour and property. In an economically free society, governments allow labour, capital, and

goods to move freely, and refrain from coercion or constraint of liberty beyond the extend necessary to protect and maintain liberty itself" (The Heritage Foundation, 2020).

The goal of this part of the dissertation is to deepen the understanding of how individual entrepreneurs and entrepreneurial teams create different kinds of firms in terms of innovation, internationalisation, and employment generation. Additionally, the role of economic freedom is further analysed as a moderator of the differences between both groups and the firm type that each group creates. The topic is developed theoretically in Chapter 2, Section 2.3., and empirically in Chapter 6.

For this part of the dissertation, data from GEM project is used to obtain information on individual factors. To assess a country formal institution with respect to its economic freedom, the Economic Freedom Index over the period 2014-2018 is employed.

1.4 Contributions

This work provides several contributions. First, in terms of **antecedents**, it provides a multilevel approach to the influence of individual characteristics (in particular, educational level and intrapreneurial experience) on the decision whether to form an entrepreneurial team in pursuit of a business opportunity. More importantly, it shows that the effect of these factors is moderated by the level of individualism in a society. This cultural dimension explains why individuals with similar educational levels and intrapreneurial experience make different decisions concerning the creation of an entrepreneurial team in different cultural contexts. In addition, it reveals that opportunity motivation partially mediates the relationship between individual factors and the creation of an entrepreneurial team. This dissertation proposes that individuals with a high educational level and intrapreneurial experience are more likely to pursue a business opportunity involving the creation of a team. Finally, the dissertation is the

first to analyse the empirical relationship between certain characteristics of individuals and their propensity to be involved in entrepreneurial teams across countries using a multilevel logistic regression analysis. The wide range of countries in the sample and the time horizon selected allow for the results to be generalised.

Second, as a part of the **process**, it contributes to the new-firm formation literature by analysing the activities that entrepreneurs perform, highlighting the order and timing of these activities, which influence how quickly a new firm is created. While the timing of strategic actions by consolidated firms has been extensively studied in the strategic management literature, little is known in the context of new firm creation (Tornikoski & Renko, 2014). Most studies about the process of new business formation have analysed the results, such as whether a new firm successfully launched or was cut off during the formation process (Delmar & Shane, 2004a; Edelman et al., 2010; Gartner, 1985). Little attention has been given to when these significant highlights are reached or what could speed the emergence process of a new firm (Tornikoski & Renko, 2014). This part of the dissertation contributes to the understanding of the new venture creation process by showing how the differences between the selection of activities, their order and timing influence the results of entrepreneurial team ventures when compared to individual ones. This research argues that entrepreneurial team ventures can speed the new venture creation process in which they perform more key activities, such as faster employment generation and profitability, making these ventures more valuable for society. As such, it aligns with Shane's view that public policies should encourage entrepreneurship that generates growth instead of encouraging all types of entrepreneurship (Shane, 2009).

Third, as a part of the analysis on **outcomes**, this dissertation contributes to the literature on entrepreneurial teams. It does so by providing a multilevel approach to show that entrepreneurial teams exhibit better results than do individual entrepreneurs in terms of

innovation, internationalisation, and employment generation. More importantly, it shows that starting a venture is moderated by the level of economic freedom in a society, which represents the freedom of organising their activities to create more innovative firms with higher levels of exports and employment. The national context and its influence on firm performance are not thoroughly analysed in the literature (Capelleras et al., 2019). This research contends that entrepreneurial teams create firms with higher levels of innovation, internationalisation, and employment generation than do individual entrepreneurs and that the level of economic freedom affects those firms. The wide range of countries in the sample and the time horizon selected allow the possibility of generalising the conclusions.

1.5 Structure of the dissertation

This dissertation is divided into seven chapters. After this introduction, chapter 2 presents the theoretical framework of this thesis. Specifically, it explains the This dissertation is divided into seven chapters. After this introduction, Chapter 2 presents the theoretical framework of this thesis. Specifically, it explains the propensity of forming entrepreneurial teams; the process of new venture creation by individual entrepreneurs and entrepreneurial teams; and the results for the process in terms of innovation, internationalisation, and employment generation. Chapter 3 describes the databases used in this dissertation. Chapters 4, 5 and 6 describe the three empirical studies mentioned in the conceptual framework. Chapter 4 contains the first empirical study of this dissertation, which covers the first part of the theoretical framework of the thesis (Section 2.1.); Chapter 5 includes the second empirical study, which is related to the second part of the theoretical framework (Section 2.2); and Chapter 6 presents the third empirical study, covering the last part of the theoretical framework (Section 2.3.). Finally, Chapter 7 summarises the main findings of this dissertation and presents the main conclusions and implications.

Chapter 2: Theory and hypotheses

This chapter presents the theoretical framework with the following subsections: section 2.1 establishes the antecedents of the decision of forming entrepreneurial teams, exploring the influence of entrepreneurs' characteristics on the likelihood of creating them and how national culture impacts such relationships. Section 2.2 develops the differences between individual entrepreneurs and entrepreneurial teams' new venture creation process. Finally, section 2.3 contrasts the types of firms that both groups create in terms of innovation, internationalisation and employment generation, and the influence of economic freedom on these different outcomes.

2.1 Antecedents of forming entrepreneurial teams

In recent decades, the literature on team formation has addressed issues such as: first, why entrepreneurial teams are formed; second, how cofounders are selected; third, where founders look for potential partners; and fourth, which kind of factors stimulate individuals to look for partners when they create a new venture (Lazar et al., 2019). The main goal of the first part of the theoretical framework is to analyse why some individuals prefer and decide to launch new ventures with partners instead of doing it by themselves. This objective implicitly assumes the previous questions and tries to incorporate them into the conceptual framework. If one wonders why some individuals prefer to set up a new venture with partners, one should also try to find out why teams are formed, how and where cofounders are selected, and which individual attributes lead to the decision to share the leadership of new business projects.

The previous literature has addressed the issue of *why entrepreneurial teams are formed* in two main ways. The first argues that one individual has a business idea and afterwards looks for partners to develop their project. In this scenario, the idea comes before the team (see, e.g., Grossman et al., 2012; Kamm et al., 1990). The second explains how a group of founders decide

to start a project and they develop the idea together; that is, the team comes before the idea (see, e.g., Forbes et al., 2006; Kamm & Nurick, 1993a). Recognising that some business ideas are elaborated by a group of people, the point of departure of the present framework is that an individual has a business idea, and they then look for partners that help them to pursue it with success.

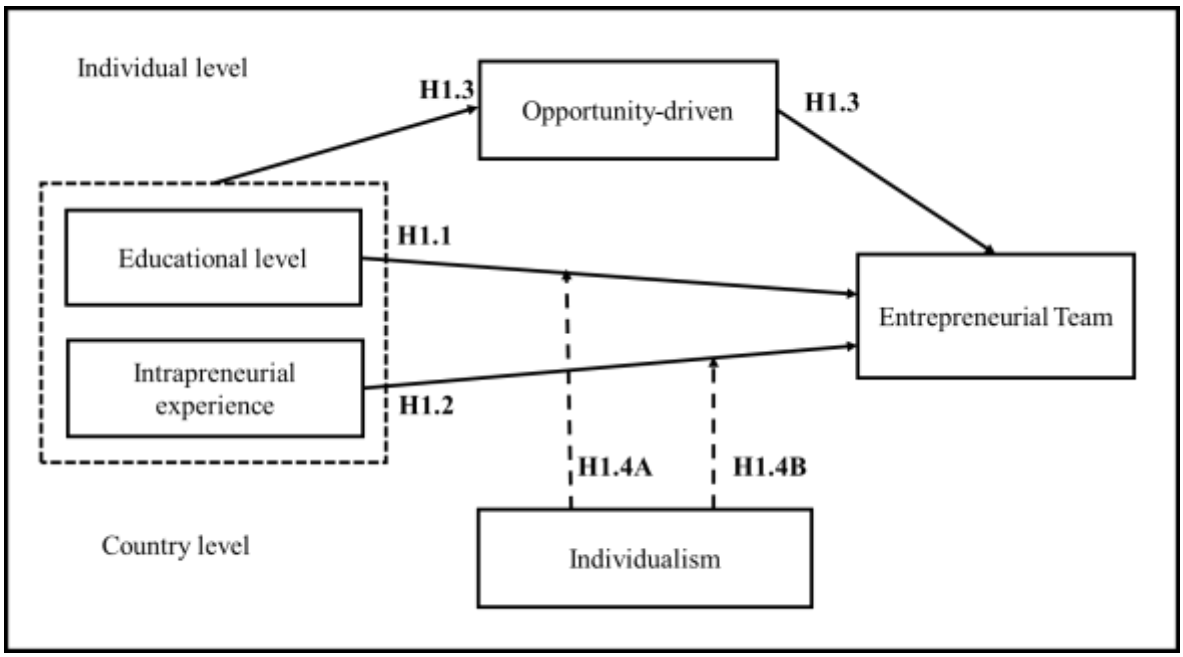
Another interesting issue is *how cofounders are selected*, and it is here that the previous literature has proposed a range of explanations (Lazar et al., 2019). One of these is the *interpersonal attraction strategy*. Cofounders select each other because they share similar interests and possess perceived admirable qualities. In that sense, cofounding relations arise because of the need to work with similar individuals with whom one can initiate a rich and fruitful connection (Lazar et al., 2019). Another strategy is the *resource-seeking strategy*, in which cofounders are selected based on the resources that are required for the creation of the new venture. This strategy highlights the complementarity among members. It is focused on individuals' human capital (i.e., knowledge, skills, and capabilities), which allows access to relevant resources and assets.

The third issue is *where founders look for potential partners*. This is closely related to the second one. The previous literature has revealed the role played by networks. Individuals are much more likely to find potential partners among people they already know. Studies have highlighted the role played by the educational process and previous employment (Kacperczyk, 2012; Kacperczyk & Marx, 2016). As a result, the educational level and the intrapreneurial experience of the individual are two fertile contexts in which to find the right partners for the creation of an entrepreneurial team.

A final question asked in the literature is *which kind of factors stimulate individuals to look for partners*. Previous research has studied many of these. Two are particularly relevant – the educational level of individuals, and their intrapreneurial experience (Davidsson & Honig, 2003b; Mindruta, 2013; Wasserman, 2012a) – but the findings have been inconsistent. As it has been explained above, one way of advancing the understanding of this subject is to take into account the context in which individuals operate (Donaldson, 2021), and to examine whether their behaviour is contingent in that context. The analysis is focused on the moderating role of individualism. This research states that this dimension is closely related to why some individuals set up a business alone and others prefer to do so with partners, and so is closely related to the present dissertation's objectives.

Two direct relationships between individual factors (*educational level* and *intrapreneurial experience*) and the likelihood of being a member of an entrepreneurial team (hypotheses 1.1 and 1.2 respectively) are proposed. The previous literature has presented inconsistent findings on these relationships. The level of *individualism* will help to reconcile these conflicting results, because this research highlights that the influence of the individual factors referred to will not be the same in countries with very different cultural profiles. For this reason, two additional moderating relationships (hypotheses 1.4A and 1.4B respectively) are proposed. Finally, the fact that individuals' attributes strongly affect motivation cannot be ignored. Both the educational level and the intrapreneurial experience may affect the pursuit of a business *opportunity*, which is turn positively affect the creation of a team. Therefore, 1.3 is a mediating hypothesis. In the three next subsections, this framework is developed. Figure 2 shows the conceptual framework.

Figure 2: Conceptual framework of forming entrepreneurial teams.



Source: Own elaboration.

2.1.1 Individual's characteristics and the formation of entrepreneurial teams

As has been explained at the beginning of this section, this framework analyses the influence of the educational level and intrapreneurial experience of individuals on the likelihood of creating a team.

2.1.1.1 Education level

Opportunity discovery is not easy. Some scholars have argued that it depends on the previous information that individuals have (Kato et al., 2015). The ability to create and recognise market opportunities requires a set of basic tools and knowledge, which suggests that systematic training may be necessary (Shane & Venkataraman, 2000), at least in the case of high value-added prospects. Therefore, the educational level of the entrepreneur plays a key role in this process. This research confirms that entrepreneurs with higher levels of education have a more specific skillset because they are specialists in particular disciplines (for instance, management, law, science, or engineering). For this reason, they do not always possess all the specific

abilities and capabilities needed to start a new venture based on an idea (Kamm & Nurick, 1993b; Wasserman, 2012a), so they need to find people who have similar beliefs, interests, particular abilities, and competencies that complement their individual human capital (Aldrich & Kim, 2007; Mindruta, 2013). Moreover, previous research has indicated that individuals with higher levels of education can identify their own weaknesses and look for partners who can compensate for these (Chowdhury, 2005). Therefore, following the resource-seeking strategy, in which cofounders are selected based on the resources required for new venture creation, individuals of a higher educational level may be more likely to create a business as a member of an entrepreneurial team.

However, some researchers have suggested that the opposite can be the case. Individuals with a high educational level may also be more prepared to set up a new venture because they have more skills and knowledge. Therefore, as they follow the resource-seeking strategy described above, the likelihood of creating a new venture as part of a team is reduced. Furthermore, highly educated individuals are more autonomous and self-confident about their own skills and capabilities (Davidsson & Honig, 2003a). For this reason, they may prefer to have the control over their project and think that developing a new venture alone may be a better option.

Nevertheless, it must be considered that the educational process enhances the individual's network of contacts, which improves the likelihood of them finding the right partners (Wennberg et al., 2011). It seems reasonable to suggest that this network will be smaller among individuals with a lower level of education. The more formal studies completed by individuals, the wider their network becomes, therefore increasing the probability of forming entrepreneurial teams (Chowdhury, 2005; Phan et al., 2009). Previous research has found that most new venture member partnerships arise from friendships between individuals. This kind of argument is based on the interpersonal attraction strategy (Lazar et al., 2019) explained

above. Recognising that the reasoning followed in this research may offer arguments in both directions, it can be stated that individuals with higher levels of education are, on average, more aware of their limitations and have a larger network of contacts that will allow them to find the right partners. The following hypothesis is therefore proposed:

Hypothesis 1.1: *A higher educational level increases the likelihood of an entrepreneur to create a business as a member of an entrepreneurial team (instead of starting a new venture alone).*

2.1.1.2 Intrapreneur experience

Intrapreneurial experience is the output of a learning by doing process where employee develops intrapreneurial activities within an organisation and acquires specific knowledge and specific leadership skills (Guerrero & Pena-Legazkue, 2013). Companies support intrapreneurs with finance and access to corporate resources, while intrapreneurs create innovation for companies, developing new ideas with work partners (Covin & Miles, 1999). Entrepreneurs with intrapreneurial experience discover the advantages and disadvantages of working as part of a team, and they know how to manage team interactions to enable effective communication and to resolve conflicts among members (Guth & Ginsberg, 1990). As a result, they can strengthen the pros and manage the cons of working as part of a team, thereby achieving superior results.

Some studies have stressed that ventures which promote intrapreneurship foster employees' autonomy (Bosma et al., 2010; Fis & Cetindamar, 2021) because they want those involved to develop their own projects. This argument leads to think that individuals with intrapreneurial experience would prefer to create a new venture alone (Hayton, 2005). As their skills mature, and following the resource-seeking strategy, they do not need other partners to pursue their market ideas. Furthermore, they usually pursue ideas that were initially thought of during their

employment in a company fulfilling their intrapreneurship roles, so when they create new ventures, they might prefer to have absolute control.

Nevertheless, most of the intrapreneurship literature acknowledges that intrapreneurs develop the ability of working in an interdisciplinary mode because intrapreneurial projects within organisations often require close attention to complex financial, technical, and administrative issues, including collecting, analysing, and interpreting data from internal and external environments. This kind of argument is aligned to the resource-seeking strategy. Moreover, intrapreneurs know that by facilitating integration between organisational units, they enable a more fluid exchange of information, which ultimately benefits the success of projects. Companies that promote intrapreneurship invest more time and effort in group-oriented training, which supports cooperation and knowledge sharing (Hayton, 2005). Consequently, intrapreneurial experience provides entrepreneurs with a means of developing projects based on cooperation and integration.

Finally, intrapreneurial experience provides entrepreneurs with the opportunity to find suitable people for their teams because they have a broader network of contacts. Many entrepreneurs keep in close touch with their former employees and co-workers, who then become a key part of their networks (Aldrich & Kim, 2007; Kamm & Nurick, 1993a). Following the interpersonal attraction strategy, previous intrapreneurs can subsequently find partners for their new venture more easily. Therefore, the following hypothesis can be proposed:

Hypothesis 1.2: *Intrapreneurial experience increases the likelihood of an individual creating a business as a member of an entrepreneurial team (instead of starting a new venture alone).*

2.1.2 The mediating effect of entrepreneurial motivation

Both educational levels and intrapreneurial experience strongly influence the motivation to create a business, and this also affects the likelihood of an individual creating a venture as part of a team. Previous research has demonstrated the different types of motivation. Some individuals create a new venture looking for flexibility in their work schedules, others are pursuing their passion and dreams, and others see entrepreneurship simply to earn a living. Reynolds et al., (2005) distinguish between opportunity and necessity entrepreneurs. The former identifies possible business openings, while the latter start new ventures because of a lack of better job prospects. The entrepreneurship literature has explained that opportunity-driven and necessity-driven entrepreneurs differ systematically in their expectations of job creation, their export revenues, and their innovation levels (Reynolds et al., 2005).

Entrepreneurs with higher levels of education are more likely to identify entrepreneurial opportunities of high added value (Arenius & Clercq, 2005). By contrast, entrepreneurs with a lower educational level pursue, on average, opportunities of lower added value and of lesser sophistication, so they do not have such a great need for the resources and knowledge of other individuals. For them, creating a new venture is a matter of necessity (Fuentelsaz et al., 2015). Therefore, the educational level of the entrepreneur has a positively influence on whether they are an opportunity entrepreneur or not. Similarly, individuals with previous intrapreneurial experience are, on average, people with a better background because they will have held a job in an enterprise for a long time, and this will have allowed them to pursue projects with greater freedom. It seems reasonable to think that, if they decide to create a new venture, it will be motivated by the discovery of a business opportunity, and not because they do not have better job options. Therefore, both individual factors (the educational level and the intrapreneurial experience) make it more likely that these individuals are opportunity-driven entrepreneurs.

Nevertheless, to successfully develop their business idea, a team may be very important. Previous research has tried to explain the reasons behind the formation of teams, highlighting that an individual may have an idea and, afterwards, they look for potential partners to develop it (Grossman et al., 2012; Kamm et al., 1990).

Previous research has also shown that a good business idea requires different types of knowledge and skills. Transforming an idea into a real project requires entrepreneurs to establish links with others who control resources or have resource connections (Aldrich & Kim, 2007). For this reason, opportunity-driven entrepreneurs look for people with different characteristics and experience to enhance the likelihood of achieving their own ambitions and goals (Tabares et al., 2021). Opportunity entrepreneurs attempt to manage growth successfully by finding people to create entrepreneurial teams (Aldrich & Kim, 2007; Klotz et al., 2014; Ruef, 2002). By contrast, necessity-driven entrepreneurs often spend less time designing their ventures, making the business less attractive to other potential team candidates.

Opportunity-driven entrepreneurs usually create and develop projects with challenging tasks that require specific and diverse knowledge (Tabares et al., 2021). They need a broad range of resources (Cullen et al., 2014), leading them to seek support from other people with better resources and capabilities. They follow the resource-seeking strategy, looking for other people who are selected based on the resources required for the new venture. Consequently, the following hypothesis can be proposed:

Hypothesis 1.3: *Being an opportunity-driven entrepreneur mediates the relationship between individual characteristics (i.e., educational level and intrapreneurial experience) and the likelihood of creating a business as a member of an entrepreneurial team (instead of starting a new venture alone).*

2.1.3 The contingent role of individualism

In hypotheses 1.1 to 1.2, different relationships were proposed among certain individual entrepreneurial characteristics and the likelihood of creating an entrepreneurial team. However, entrepreneurs are influenced by the institutional context in which they operate (Autio & Acs, 2010). Culture is one of the main elements of context that influences entrepreneurial behaviour. The degree of individualism of a country is a cultural dimension that can help to explain the inconsistent results of the previous literature.

As explained above, individualism and collectivism are on the opposite poles of a continuum (Hofstede, 2001). In individualist societies, individuals are expected to take care only of themselves and their immediate families. These are societies where people are motivated by individual rewards. In collectivist countries, individuals are considered from birth to be part of a group, and they are more oriented to collectivist rewards (Triandis, 1993). Traditionally, individualism has been related to entrepreneurship because many of the characteristics of entrepreneurs seem to refer to an individualist orientation, such as autonomy, independence, the need for control, and self-confidence (Taylor & Wilson, 2012).

In hypothesis 1.1, it has been argued that entrepreneurs with higher levels of education have a very specific knowledge of some subjects, but they may need other resources to complement their knowledge. Similarly, the educational process is an important source of contacts, providing a wider range of options by which to find the right partners. However, highly educated individuals are also more autonomous and are more self-confident about their own capabilities, and so are less likely to look for business partners.

In an individualist society, a high educational level gives entrepreneurs a set of skills and abilities that incentivise the creation of an individual venture, because they may believe that

they have the requisite knowledge. Moreover, although they can identify their weaknesses, they prefer to have total control over their business and to involve new people as employees or external collaborators. They have a lower appreciation for cooperative strategies, and they prefer to be more independent to make their own decisions without considering others' opinions (Steensma et al., 2000). In contrast, in less individualist societies, the educational process will be focused on exploiting good business opportunities, and if entrepreneurs do not have all the necessary resources, they will not feel troubled by having to incorporate new partners. In these kinds of societies, group decisions are considered better than individual decisions. Consequently, individual initiatives are discouraged (Hayton et al., 2002; Thomas & Mueller, 2000), and entrepreneurs with a high level of education have a greater incentive to start an entrepreneurial team.

In hypothesis 1.2 it was proposed that entrepreneurs with intrapreneurial experience know better the advantages and disadvantages of working as part of a team. In addition, the intrapreneurial experience may be very important for identifying the right partners for their new business. However, it is also true that ventures that promote intrapreneurship also foster employees' autonomy, so individuals with intrapreneurial experience might prefer to create a new venture alone.

Nevertheless, it was also explained that individuals are strongly influenced by the cultural contexts in which they must operate. In individualist countries, the intrapreneurial process is based on individual competition, instigating stronger employee self-confidence (Morris et al., 2006). For this reason, individuals are less used to working as part of the team, and thus, such entrepreneurs will prefer to start a business alone. If they need additional resources, they will look for specialised individuals or workers but without involving them as members of the team (i.e., without having a significant financial interest in the venture). In contrast, entrepreneurs

with intrapreneurial experience in less individualist societies know quite well the benefits of working as part of a team and will therefore prefer to develop their business with partners, especially if these are necessary to have a high value-added business. They will then prefer to integrate people into teams.

Therefore, the following hypotheses can be proposed:

Hypothesis 1.4A: *The positive relationship between educational level and the entrepreneurial team is negatively moderated by individualism.*

Hypothesis 1.4B: *The positive relationship between intrapreneurial experience and an entrepreneurial team is negatively moderated by individualism.*

2.2 New venture creation process: individual entrepreneurs vs entrepreneurial teams

The literature on new firms has focused on the results of the new venture creation process. However, little attention has been given to when these results are achieved or what could accelerate the process (Tornikoski & Renko, 2014). Lately, some studies have included the timing of the different activities in the analysis. In addition, the literature has highlighted the differences in the process between ventures created by individual entrepreneurs and entrepreneurial teams and the importance of decisions from one group to another (Reynolds, 2017; Wood et al., 2019).

Speeding up a new firm creation is desirable from a macroeconomic and microeconomic perspective. From a macroeconomic perspective, new firms have the highest labour output, are responsible for a substantial increase in sector productivity and are clearly a major source of technical and market innovations (Reynolds, 2017). From a microeconomic perspective, the

new firm creation process provides entrepreneurs with knowledge, as even those that fail create lessons to be learned by societies. According to the Knowledge Spill over Theory of Entrepreneurship (KSTE), knowledge created by firms in the market is passed to other economic agents as entrepreneurs, and is identified as the primary factor in resource allocation (Acs et al., 2013). As a result, even firms that abandon the entrepreneurial process (disengaged) leave knowledge that can be exploited by new firms.

The main goal of this section of the thesis is to compare the new firm creation process followed by individual entrepreneurs and entrepreneurial teams. Therefore, the following subsections explain the main differences and propose a set of propositions in terms of activities, their order, the results attained at the end of the process, and the timing to perform the different activities, and achieve the results of the process.

To explain the process, scholars have developed two leading theories: the entry of an economic actor, and an analogy to the birth of a biologic organism (Reynolds & Miller, 1992b). On the first theory, the classic model of economy (focusing on a market system) analyses business entities as rational players of the economy and highlights the specific activities taken by nascent entrepreneurs to create businesses and non-profits organizations. These activities include an intention of creating a new organization, building resources (financial support and expertise), creating a boundary for the new venture, and developing exchanges (trading resources across the boundary). However, there is no discussion about the sequencing of activities, or the time required to complete them. The other theory is a biological analogy where gestation is often applied as part of an organisational life cycle in which activities and their sequence are important. If this sequence is constant, the theory pretends to find the point when the gestation process is completed, and a new business entity is created. The two theories complement each other. The biologic parallelism focuses on the time of conception, the activities to develop an

economic system, and it finishes with the new firm birth. This economic perspective ignores the conception processes and focuses on different options to decide when the nascent firm is considered a business entity (Reynolds & Miller, 1992a; Ruef, 2002).

In addition, scholars have been classifying the entrepreneurial process using four main models, according to Moroz & Hindle (2012). First, the "stage model", divides the stages of the process in major tasks or phases, however, the chronological order of events do not suit the proposed stages and/or often overlap. Examples of this model include Gartner, 1985; Lim et al., 2008. Second, the "static framework", where the overall process is studied without taking into account the sequencing of activities (e.g. Bhave, 1994; Katz & Gartner, 1988). Third, the "process dynamic" model, incorporates a qualitative methodology to examine the impact of the context in the results of the process (e.g. Lichtenstein et al., 2007). Fourth, the "quantification sequence" model, includes a historical sequence-based approach (e.g. Carter et al., 1996b; Salamzadeh, 2015), however, the approach does not allow scholars to understand the dynamics of present and subsequent future conditions within the process. Finally, if a model does not fit within the above four models (For instance: Aldrich, 1999; Delmar & Shane, 2004), the classification is called "other".

The study of the creation of a new firm as a process started in the mid-1980s with Garner. For Gartner (1985), new venture formation consists of organising and assembling ongoing interdependent actions into sequences that generate sensible results. The entrepreneurial process involves characteristics such as: entrepreneurs finding a business opportunity, accumulating resources, marketing products and services, creating products, building the organisation, and responding to government and society. However, the author does not include either the activity sequencing or timing required.

This work is followed by others such as Katz & Gartner (1988), who identified four characteristics of ongoing organisations: (1) intention to achieve organisational purpose, (2) resources, (3) creating a boundary and (4) trading resources across the boundary, ignoring that a process exist to create these ongoing organisations.

Later, Reynolds & Miller (1992) captured all four properties of ongoing organisations from Katz & Gartner (1988) including the sequence and timeframe related to the four major events: personal commitment, financial support, sales and hiring employees. Based on the four major events, in 1993, Reynolds and his colleges started a project which would later become the most recognised database for the new venture creation process: the PSED.

In 1994, Bhave defined venture creation as the process that begins with an idea for a business and finishes with a product or service sold to customers in a market to define the "conception point" for new ventures. Later, Ruef (2003), defined the initiation of a new firm as a declared intention to form an organisation and includes: serious discussion, the formation of the founding team, public announcements of the organisation and the public name of a new collective identity. In the start-up stage, other activities are included: resource mobilisation, buying permanent facilities and equipment, and asking and getting external financial funds. Legal establishment of an organisation, social organisation (including the hiring of its first employee) and the creation of authority systems. The operational stage of organisational founding includes events such as announcing and delivering a service or product to a market. Gartner and Carter (2003) identified twenty four activities for business creation as thinking about starting a business, investing the founders own money in the business, developing the prototype, preparing the business plan, organising the start-up team, projecting financial statements, and hiring employees or managers, among others.

The entrepreneurship literature has also pointed out that inside the entrepreneurial process there are differences between firms which are developed by an individual and by an entrepreneurial team. Scholars have highlighted the crucial importance of the teams in the formation of new firms and the key differences when compared to individual entrepreneurial ventures (Bolzani et al., 2019). Teams can have a key impact in the new venture process in terms of establishing a firm or not, the timing of the foundation and key decisions such as disengaging the venture (Bolzani et al., 2019). Individual start-ups reach the results at different times than entrepreneurial teams new ventures (Reynolds, 2017). Moreover, scholars have studied the formation of new firms in terms of individual and team's characteristics, social capital and social networks, among others (Almandoz, 2012; Durda & Krajcik, 2016; Müller, 2010).

The differences between the process followed by an individual entrepreneur and entrepreneurial teams are influenced by different aspects. First, the interaction among team members creates an "affective fusion" that favour the pre-launch and launch of the business. For D'hont et al. (2016) this "affective fusion" refers to solidarity and benevolence. In addition, interaction among team members creates trust and can increase the use of knowledge and information, increasing their innovative capacity (Dimov & Shepherd, 2005; Ensley et al., 2000; Lechler, 2001), and develops an environment that favours risk taking and advance faster from one activity to another in the entrepreneurial process.

Second, the development of the team and the subsequent team learning process co-evolves with stages of the venture's development where the cognition at a team level is more than the sum of individual team members' cognitions, letting new teams to develop the process faster and with better results than individual entrepreneurs. The participation of the different members means that they can carry out the activities sooner and they can do a greater number of activities and speed up the process to reach profits than individual entrepreneurs. According to Bryant

(2014) teams have a better adaptation capacity during the new venture creation process, facing risks and uncertainty better than individual entrepreneurs.

Third, entrepreneurial teams lead to more innovative companies than individual entrepreneurs as differences between team members provide a stimulus for innovation because ideas come from a variety of contexts, with diverse perspectives and a variety of decision-making criteria. This cognitive diversity in terms of skills, knowledge, tools, and perspectives allow more innovative decisions which encourage more and faster activities to be performed. Some authors, argue that these processes of synergy between team members help to face non-routine problems and thus achieve, higher quality results (Chowdhury, 2005; Ensley et al., 2003; Ensley & Hmieleski, 2005; Ensley & Pearce, 2001; Jin et al., 2017).

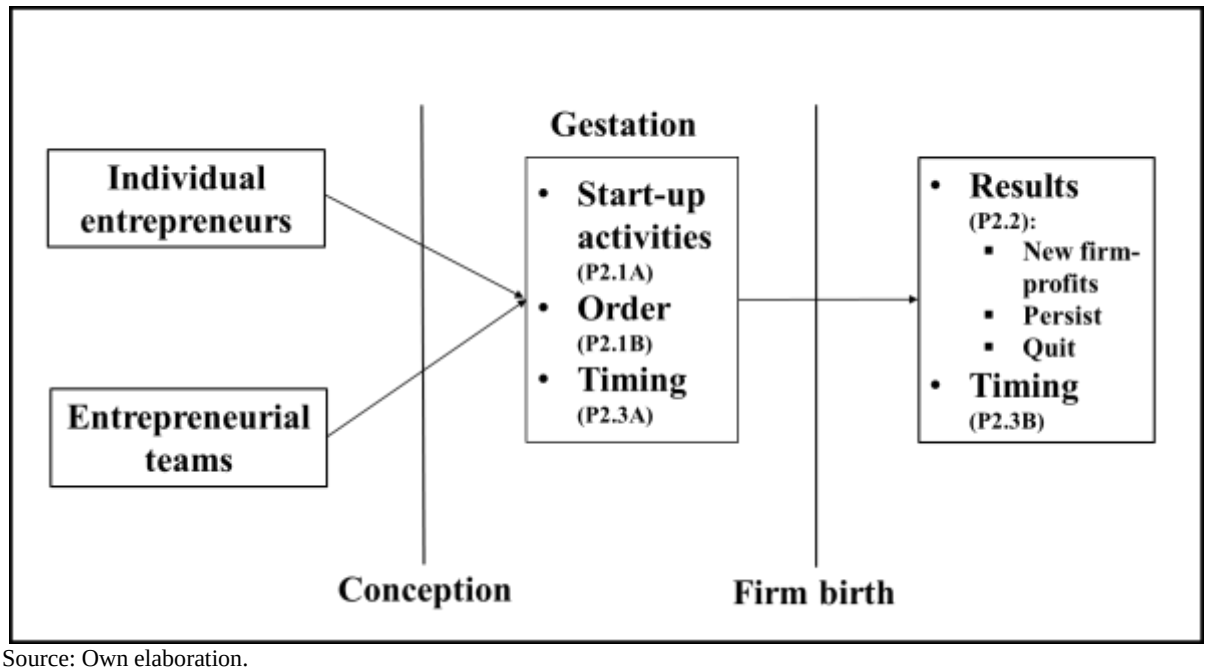
Fourth, entrepreneurial teams have greater resources in terms of time, energy, money, and experience, which benefit the development of complex tasks in difficult environments and uncertainty. While the new venture is created, there are several sources of uncertainty regarding products, institutional factors, organisational structures, access to resources and consumer needs. Some scholars claim that the additional resources that teams have in comparison to individual entrepreneurs, crucially influence the development of firms since the lack of resources is one of the most important obstacles faced by new ventures (Autio et al., 2011; Brush et al., 2001, 2002; Tang, 2011).

Finally, teams have a greater ability to discover and exploit new opportunities and have larger social networks (Aldrich & Kim, 2007; Chandler et al., 2005; Klotz et al., 2014; Penrose, 1995; Ruef, 2010; Wasserman, 2012). Moreover, teams find those opportunities to develop more complex projects with greater opportunities for growth. That is, entrepreneurial teams have higher growth aspirations and greater ability to manage growth than individual entrepreneurs

(Ensley & Pearce, 2001; Hmieleski & Ensley, 2007a). These abilities let teams perform more activities and faster. Kamm et al. (1990) found evidence that ventures created by teams are more likely to achieve higher sales sooner than individual entrepreneurs.

In conclusion, to be able to analyse the differences in the new venture creation process followed by individuals and entrepreneurial teams, the next subsections propose a set of propositions covering the activities within the process, their *order*, the *time* to perform them (propositions 2.1A and 2.1B respectively), the *results* of the process (proposition 2.2), and *timing* to reach them (propositions 2.3A and 2.3B respectively). The conceptual framework is summarised in Figure 3.

Figure 3: Conceptual framework of the new venture creation process.



Source: Own elaboration.

2.2.1 Start-up activities

In the past two decades different authors tried to explain the process of creating new firms, including the activities to perform with the goal of having a new successful firm. However, Reynolds and his colleagues (Reynolds et al., 2004) defined the conceptualisation of the

process, including the definition of transition points and activities, building one of the most recognised databases for the new venture creation process (i.e., databases from the PSED project). As mentioned in the conceptual framework, the first transition point is conception, when individuals decide to engage in starting a new business start-up. Subsequently, the process continues with the gestation stage, that includes start-up activities and concludes with the second transition point, the firm birth, which starts with the infancy stage. In this stage three types of paths or results are possible: new firm (profits), persistent but stable survival, or quit.

Following Reynolds (2018) after conception, the gestation stage includes 19 start-up activities for the PSED harmonised database. Business start-up activities are events, behaviours, and actions of individuals that lead to the creation of new businesses. Organisations come into existence by the actions of entrepreneurs (Delmar & Shane, 2004b; Gartner et al., 2004).

However, not all entrepreneurs do the same activities, and the sequence of these activities is also often different (Delmar & Shane, 2004a). Some activities are more popular than others. For instance, among 19 activities, *serious thought* (of creating a new venture) is reported by all entrepreneurs, however, *serious thought* is not an action. Some of these are one-time events, while others are continuous activities. Some activities are common for all entrepreneurs, while others are less likely to be initiated (Reynolds, 2017). In a similar way, not all entrepreneurs perform the activities at the same pace. There are activities performed at the beginning of the process, while others occur in the first or second year, and also the time that entrepreneurs spend doing those activities is different (Reynolds, 2017).

In the process of new venture creation there are differences between the activities that entrepreneurial teams and individual entrepreneurs perform. Teams can combine their abilities and make different and faster decisions than individuals. Entrepreneurial teams attract others

who possess characteristics and capabilities to complement their own, and which are needed for starting the planned new firm (Kamm & Nurick, 1993b). Additionally, other studies support that teams produce synergies which improve the potential for creating new ventures from their collective efforts (West, 2007), letting teams to perform more activities during the new venture formation process. Teams manage crisis situations and have a greater ability to achieve fast growth, mainly due to the improved range of ideas within the team.

Teams have more capacity for developing actions to increase the velocity of forming new ventures. Teams achieve this by joining the effort of their members, abilities, knowledge, and different backgrounds, so they can do more activities and do them faster. For instance, asking for formal funding requires projections of growth and, as teams manage growth better than individuals, entrepreneurial team start-ups have an edge over individual new ventures (Thakur cited by Francis & Sandberg (2000).

Moreover, entrepreneurial teams and individual entrepreneurs make different decisions about how to perform activities, in which order of priority and sequence, and how faster they perform them. For instance, some entrepreneurs make a first sale in an early phase of the process, while others may focus on the time to reach a combination of different milestones (Reynolds & Curtin, 2010). Teams are more capable of facing risks and make better decisions when facing the volatile context surrounding their new ventures.

Entrepreneurial teams have higher levels of knowledge because the learning process is not only individual learning, but also collective, derived from teamwork, cooperation and integration among team members, generating new routines also based on the knowledge of past experience (Chowdhury, 2005; Jin et al., 2017). These help them choose activities and accelerate the new firm creation process.

Therefore, the following two propositions can be formulated:

Proposition 2.1A: *Ventures created by entrepreneurial teams perform more entrepreneurial activities than ventures created by individual entrepreneurs.*

Proposition 2.1B: *Ventures created by entrepreneurial teams perform entrepreneurial activities in a different order than ventures created by individual entrepreneurs.*

2.2.2 Start-up results

As a dynamic process, the results of the process can be different. Reynolds and his colleagues in the PSED project determined three possible results of the process: (1) the birth of a new firm, (2) disengagement from the process and (3) active in the start-up process without having benefits. Despite the high amount of research in this topic, there is no consensus on either the conceptual (theoretical) or the operational (measurement) definitions of the birth of a new firm (Reynolds, 2017).

According to Reynolds (2017) there are at least five definitions of a new firm: (1) founder's interpretations; (2) as a new agent involved in economic operations; (3) initial entry into a business registry; (4) input of work contribution; and (5) initial profits. In the first case, founders respond to questions like: "In what year was this business originally established?" or "Is this an operating business?". These questions are relatively easy to answer, however, every founder has a different concept of "establish" or "operating" which makes it difficult to compare firms. In the second case, based on industrial organisation theory, a firm is born when it has its first economic transaction. Most of the research in this area relates to the initial entry into markets as a producer. Despite the precision of the concept, there is a lack of detailed data on new buyers or sellers in the large number of markets. Regarding business registration, it is the most

extensively used measure in research since it is a public recognition of a new entity. Scholars have employed different methods to measure the registration of new businesses, including new listings in phone books, initial federal social security, etc. In the fourth case, input of work contribution refers to the time and effort an entrepreneur invested in the creation of the new firm before its incorporation. This time and effort must be valued and is an important part of the process. Finally, those establishing new firms, either as individuals or in teams, have a common goal: to achieve profitability, which leads the transition from start-up to new firm (Reynolds, 2017).

From the above, and following Reynolds (2017), the definitions for the three results of firms in the process that was used to develop the framework in this subsection are: first, new firm entry is defined as the presence of monthly profits that covers expenses and owner salaries. If owner's salaries were covered, the venture was assumed to be in profits. Second, the disengagement from the process is defined as quit the start-up effort. Finally, if the venture does not reach some of the activities (be in profits or quit the start-up effort), it is still active in the start-up process (Reynolds 2018, 2017; Reynolds et al., 2004; Reynolds & Miller, 1992a).

According to the literature, entrepreneurial teams perform better than individual entrepreneurs (Ensley & Hmieleski, 2005; Vyakarnam et al., 1999). Kamm et al. (1990) found evidence that ventures created by teams are more likely to achieve high sales. Thakur cited by Francis & Sandberg (2000) found that ventures created by teams presented superior growth than its counterparts created by individuals. Evidence indicates that knowledge diversity within teams contribute to team learning (West, 2007) and the venture's ability to acquire additional resources necessary for its growth. Team collective cognition formed memory systems that can imprint the way start-ups are capable of adapting in time (Bolzani et al., 2019; Hayton, 2005).

In addition, ventures created by teams can deal with the uncertainties and volatilities that require flexibility and complexity of decision making during the entrepreneurial process as opposed to ventures created by individuals (Vesper, 1990 cited by Chowdhury, 2005). Being able to better cope with volatility allows teams to take more risks, diversify their markets, probably making it possible to achieve profits faster than individual entrepreneurs.

An entrepreneurial team provides more internal resources and better external networking than individual entrepreneurs (Aldrich & Kim, 2007; Chandler et al., 2005; Klotz et al., 2014; Penrose, 1995; Ruef, 2010; Wasserman, 2012a) and internal and external resources let ventures growth faster and have better projections to reach profits.

Following these arguments, the following proposition is suggested:

Proposition 2.2: *Entrepreneurial teams create more ventures that reach profits than individual entrepreneurs.*

2.2.3 Timing to perform start-up activities and to reach process results

Conceptually, a process cannot occur without the passing of time (Tornikoski & Renko, 2014). The time dimension is crucial because new ventures face an initial disadvantage relative to established organisations. According to Delmar & Shane (2004) the timing for completing particular activities will influence the survival of new ventures for two reasons. First, some activities affect the life of the new venture only in the initial months, while others affect it later. For instance, failing to identify consumers at the beginning poses a higher risk of venture disbanding, whereas activities related to competing with established firms will not be present until the new venture has created a product, triggering responses from established firms. Second, activity sequencing and the accomplishment of some activities is also important. For

example, the creation of products can only occur once raw materials are acquired. Temporal considerations are relevant for entrepreneurs to construct the future. Three main dimensions of time are vital to entrepreneurs for building the future: initialisation, speed, and chronology, confirming that the creation of a new business is a dynamic process (Wood et al., 2019).

Scholars affirm that a rapid reaching of stages and activities in the new venture creation process increases the likelihood of maintaining the firm over time. Entrepreneurs need to learn quickly to determine if they need to continue with the start-up process or if it should be abandoned, confirming that time is crucial in the new venture creation process (Tornikoski & Renko, 2014). The speed of performing activities in the new venture creation process influences the subsequent venture performance (Wood et al., 2019).

Entrepreneurs need to legitimise their firms to improve the likelihood of survival. These entrepreneurs should decide which activities are more relevant and speed them up to ensure firm emergence. The most efficient strategy for implementation may vary among entrepreneurs, depending on the nature of business, the competitive context, and their available resources (Tornikoski, 2009). As entrepreneurial teams accelerate the execution of new venture creation activities, their process results are consequently reached sooner than those for individual entrepreneurs. According to Tornikoski & Renko (2014), it is important to understand why some entrepreneurs are able to act more quickly than others in the new venture creation process.

Following these arguments, two propositions to compare the timing to perform activities and the timing to reach the results of the process are proposed below:

Proposition 2.3A: *The speed in which new ventures perform entrepreneurial activities is faster for entrepreneurial teams than for individual entrepreneurs.*

Proposition 2.3B: *Ventures created by entrepreneurial teams reach profits more quickly than the ones created by individual entrepreneurs.*

To evaluate the new firm creation process by entrepreneurial teams with that created by individual entrepreneurs, a harmonised dataset from the PSED project is used, enabling this research to generalise conclusions for four different countries. For the consolidated datasets, our focus is on nascent entrepreneurs. According to Reynolds et al. (2018) an approach exists to determine representative observations of active nascent entrepreneurs from the PSED dataset. Firstly, interviews with entrepreneurs identified if a venture is in the pre-profit stage. Secondly, new ventures that reported less than three of eighteen start-up activities were removed. Thirdly, new ventures with lack of activity in one year period were also eliminated. For each resulting observation, the first two activities that occurred in one year period are identified, and the earliest date in these two activities is considered the date of entry into the start-up process.

2.3 Outcomes of new firms: individual entrepreneurs vs entrepreneurial teams

The value-added of new businesses determines the impact of entrepreneurial activity in a region or country. To ensure a good impact from entrepreneurship, new firms should have the capability to introduce innovations in the economy, to compete in foreign markets, and to generate employment from very early stages (Bosma, 2013). However, most entrepreneurs do not create firms that grow and bring wealth to the society. Policy makers need to recognise which entrepreneurs have a real impact in society and a country's economy (Shane, 2009).

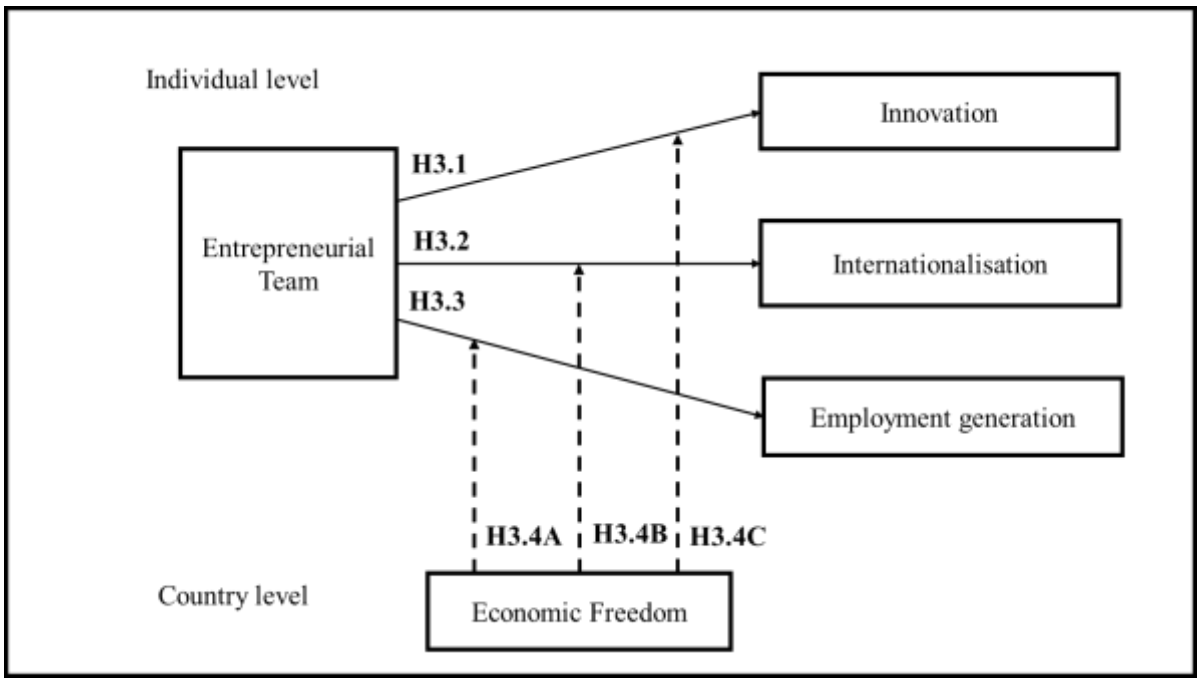
Building on resource-based theory (Alvarez & Busenitz, 2001; Barney, 1996, 2000), this dissertation states that individual entrepreneurs and entrepreneurial teams have crucial differences in the resources that each group has. Moreover, these differences influence the type

of firms that individual entrepreneurs and entrepreneurial teams create in terms of *innovation*, *internationalisation*, and *employment generation*.

In addition, the quality of businesses is influenced by formal constraints of the particular institutional framework in which a firm is operating (Busenitz & Lau, 1996b; De Clercq et al., 2013; Gupta et al., 2004; Urbano & Alvarez, 2014; Veciana & Urbano, 2008). Among formal institutions, *economic freedom* is one of the most relevant factors. It is defined as "the fundamental right of all human beings to control their own labour and property. In an economically free society, governments allow labour, capital, and goods to move freely, and refrain from coercion or restriction of freedom beyond the extent necessary to protect and maintain freedom itself". (The Heritage Foundation, 2020).

Therefore, the main goal of this part of the dissertation is to compare the types of firms created by individuals with the ones created by teams, and how the level of economic freedom influences these differences. In the following subsections, subsection 2.3.1 explains the main differences of both groups and proposes hypotheses in terms of innovation (hypothesis 3.1), internationalisation (hypothesis 3.2), and employment generation (hypothesis 3.3). Subsection 2.3.2 explains the contingent role of economic freedom and presents a set of hypotheses about the influence that economic freedom has on the types of firms that both groups create (hypotheses 3.4A, 3.4B and 3.4C). Figure 4 shows the conceptual framework of this last section of the theoretical framework.

Figure 4: Conceptual framework of outcomes of new firms.



Source: Own elaboration.

2.3.1 Characteristics that influence the quality of entrepreneurial activity

2.3.1.1 Innovation

As the first element to determine the quality of new companies and their subsequent impact on the economy and society, innovation is the process that involves the commercialisation of ideas, implementation and the modification of existing products, systems and resources (Mueller & Thomas, 2001). Product market innovations, innovative technological processes and new organisational designs are forms of innovative entrepreneurship (Fuentelsaz et al., 2018a). Literature has pointed out that small firms have an inherent deficit of knowledge assets, encumbering them with a clear and distinct disadvantage in producing innovative output. More recent scholars have stated a revised view that recognises entrepreneurial small firms as making a key contribution to innovative activity and technological change. The new view of small firms as engines of innovative activity reflects changes in technology, globalisation and other factors that have modified the importance and process of innovation (Acs & Varga, 2005). Though

literature has documented the importance of innovation and entrepreneurship to both regional and national growth, the conditions that encourage entrepreneurs and their firms remain relatively understudied (Stenholm et al., 2013).

As said before, in terms of innovation, the decisions that entrepreneurial teams make in comparison to the ones made by individual entrepreneurs influence the innovation level in new firms from different aspects. First, team members provide a stimulus for innovation because ideas come from a variety of individuals, with diverse perspectives and a variety of decision-making criteria. This cognitive diversity in terms of skills, knowledge, tools, and perspectives allow more innovative decisions to be made (Agarwal et al., 2007; Jin et al., 2017). In comparison with individual entrepreneurs, those involved in entrepreneurship through a team are more likely to have access to knowledge in different areas, which allows entrepreneurial teams know better the market, including the needs and wants of customers that are not completely addressed yet. In this manner, the diverse knowledge base allows unfulfilled niches of the market to be found and develop innovative products or services (Dimov & Shepherd, 2005). In addition, such differences are important to analyse in complex environments, where firms face many challenges. For example where forms of intellectual property, such as patents or licenses, are negotiated (Vyakarnam & Handelberg, 2005).

Second, an entrepreneurial team has, on average, higher levels of human capital than an individual entrepreneur because human capital is not only the sum of members' human capital, but also the result of the synergies that occurs among members. Synergy processes are characterised by flexibility and open communication which encourage members to share and build on the ideas and perspectives of other partners. These processes of synergy among team members help to face non-routine problems and thus achieve, higher quality, more creative and

innovative results (Chowdhury, 2005; Ensley et al., 2003; Ensley & Hmieleski, 2005; Ensley & Pearce, 2001; Jin et al., 2017).

Third, team members find support that strengthens their characteristics (confidence in their own skills, optimism, greater creativity, curiosity and questioning of the current market situation, and firmer decisions to experiment). These features provide entrepreneurs with the courage to innovate. Team members perceive their team as valuable and choose more challenging goals where innovation is required to achieve by them. Trust among team members can increase the use of knowledge and information, increasing innovative capacity (Dimov & Shepherd, 2005; Ensley et al., 2000; Lechler, 2001).

Fourth, entrepreneurial teams can establish more powerful networks compared to individual entrepreneurs. Network access contributes a critical knowledge that consequently helps in creating innovative entrepreneurial activity. The innovative capacity of organisations depends on the relationships between people within their networks. External and internal networks provide important sources of information and knowledge. External networks are vital for entrepreneurs to seek opportunities, test ideas and gain resources to increase innovation. Internal networks allow team members to have more opportunities to share resources, information, ideas, and increase knowledge. Internal networks are an important resource for teams because members can work together more effectively and efficiently when they know and trust each other and it is a path to increase innovation in the firm (Chen, 2007; Chen & Wang, 2008; Lechler, 2001).

In relation to the previous argument, the following hypothesis is proposed:

Hypothesis 3.1*: Entrepreneurial teams create more innovative firms than individual entrepreneurs.*

2.3.1.2 Internationalisation

Internationalisation is the second element that we have defined to assess the quality of entrepreneurship. International new ventures are defined as "a business organisation that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries" (Bloodgood et al., 1996). Internationalisation is a learning process in which a company generates new knowledge based on its behaviour abroad, shared and built up over time by means of certain organisational routines (Casillas et al., 2009). The international business research has been studying the motivations behind firms expanding internationally since 1970. Over the past three decades, scholars have presented various descriptive models of internationalisation. However, comparatively few studies of international entrepreneurship have empirically examined the cross-level association between motivation factors and the decision of early-stage entrepreneurs to internationalise their ventures (Li, 2018).

There are different characteristics that influence the early-stage entrepreneurs to internationalise. First, entrepreneurial teams have greater resources in terms of time, energy, money, and experience, which benefit the development of intricate tasks in complex environments and uncertainty, such as those presented by a company when deciding to internationalise. In this process there are several sources of uncertainty regarding products, institutional factors, organisational structures, access to resources and consumer needs. The increment of resources that teams have in relation to individual entrepreneurs crucially influence the internationalisation of firms since lack of resources is one of the most important obstacles (Autio et al., 2011; Bloodgood et al., 1996; Brush et al., 2001, 2002; Tang, 2011).

Second, entrepreneurial teams are more likely to have experience in different areas than an individual entrepreneur which may benefit the process of internationalising a firm. Capabilities, knowledge of processes and routines to carry out internationalisation facilitate this process for a firm because the dynamics of such markets are known and allow to find opportunities abroad (Autio et al., 2011).

Third, entrepreneurial teams have higher levels of knowledge because the learning process is not only individual, but collective, derived from teamwork, cooperation, and integration among team members, generating new routines based on previous ones. Therefore, among all, they can generate more efficient and effective routines required in the internationalisation process (Casillas et al., 2009; Moreno & Casillas, 2007).

Fourth, entrepreneurial teams have greater access to networks than individual entrepreneurs. External social capital – external networks (social and business) – positively impacts knowledge of foreign markets and can lead to the international growth of new firms. Networks with consumers, producers, institutions, etc. generate opportunities and can provide external resources for the development of the firm internationally. Internal networks enable knowledge generation. The dynamics of entrepreneurial teams versus individual entrepreneurs allow the acquisition of knowledge with other areas of the firm since the team is more accustomed to work under cooperation and integration. This dynamic permits the identification of internationalisation opportunities (Arenius & Clercq, 2005; Coviello, 2006; Jones et al., 2011; Kwon & Arenius, 2010).

Finally, entrepreneurial teams get more funding than individual entrepreneurs to grow in uncertain environments, so they will have greater incentives to internationalise (Arenius & Autio, 2006).

In relation to the previous argument, the following hypothesis is formulated:

Hypothesis 3.2*: Entrepreneurial teams create more internationalised firms than individual entrepreneurs.*

2.3.1.3 Employment generation

Finally, the generation of employment is a key dimension that contributes to enhancing the quality of entrepreneurship. In the findings of his research, David Birch (1981) revealed that small firms create the bulk of new jobs in the United States. After Birch's findings, scholars have been interested in new ventures as a crucial source of job creation (Beckman, 2006; Bruton & Rubanik, 2002; Chaganti et al., 2008; Hmieleski & Ensley, 2007b).

Different traits influence the employment generation decisions at the early stages of firm creation. First, entrepreneurial teams are used to work with others through integration and cooperation strategies. They passionately believe they can share knowledge and experience and learn from new employees. Individual entrepreneurs are going to delay hiring employees because they are used to work alone and want to maintain their independence (Jin et al., 2017).

Second, entrepreneurial teams find opportunities more easily to develop more complex projects with greater opportunities for growing. To address this growth and develop projects efficiently and effectively, they need to hire employees. Individual entrepreneurs generally develop less complex projects that do not require as many resources and generally develop them on their own (Kolvereid, 1992; Wiklund & Shepherd, 2003).

Third, entrepreneurial teams have larger (external) social networks which would eventually allow them to meet valuable people whom they may want to integrate to their firms as new

employees. Hiring employees who strengthen the human and social capital of firms is a key factor in growing effectively and efficiently (Hermans et al., 2015).

Finally, employment is generated because they are higher value-added businesses, they grow more for that reason, meaning that more workers are needed to complement the skills of the team.

In relation to the previous argument, the following hypothesis is proposed:

Hypothesis 3.3*: Entrepreneurial teams create more jobs in their new ventures than individual entrepreneurs.*

2.3.2 The contingent role of economic freedom

To explain the differences in the performance of the companies that entrepreneurial teams create, this part of the research focuses on the level of economic freedom of countries. As mentioned, economic freedom is "the fundamental right of all human beings to control their own work and property". This economic freedom is measured by the Index of Economic Freedom, which includes 12 different dimensions divided into four categories (The Heritage Foundation, 2020). The first category is the strength of the “rule of law” and includes respect for property rights, judicial effectiveness, and government integrity. The second is the “size of government”, which includes the existing tax burden, public spending, and fiscal health. The third is “regulatory efficiency”, which includes business, labour, and monetary freedom. And finally, the fourth category is “market openness”, including business freedom, freedom to invest and financial freedom.

Entrepreneurs can setup their businesses in the contexts of greater or less economic freedom. Previous literature has shown how a context of greater freedom generally allows businesses to unleash their full potential (Pinillos & Reyes, 2011). In contexts of greater economic freedom there is greater respect for property rights, which makes it easier to appropriate innovative effort. This respect for property rights translates into patents, whose economic returns allow entrepreneurs to appropriate the economic efforts they make, so they have more incentives to innovate (Fuentelsaz et al., 2018a). Judicial efficiency goes in the same direction, as entrepreneurs will have more confidence in the judicial system around them and will be able to focus on improving their business model, which will have positive repercussions on the three dimensions that are being analysed: innovation, internationalisation, and employment generation.

On the other hand, a smaller state will leave more room for the private sector to innovate in many sectors of the economy (Aidis et al., 2012). Lower public spending will allow more credit to flow to private activity, which will help entrepreneurs to have more money to invest in their businesses. This dimension will be linked to others that also characterise a context of high economic freedom, such as “freedom to invest” and “financial freedom”. Both dimensions will also make credit flow more easily to entrepreneurial activity, allowing businesses to be more innovative and with greater prospects for internationalisation.

Furthermore, economic freedom is also characterised by less red tape in setting up a new business, which allows lower barriers to entry and allows the entrepreneur to concentrate his or her efforts on developing an attractive business model (Tian et al., 2019). Less bureaucracy and administrative requirements to grow a business will make it easier for entrepreneurs to scale their businesses, which will have a positive effect when it comes to internationalising or hiring workers.

Precisely, a dimension closely linked to the hiring of workers will be the so-called "freedom of labour", which reduces the fees that a company must pay for hiring new workers, which encourages them to hire more people (Acs et al., 2016). Similarly, it allows the employer to have more flexibility in hiring, firing, and organising their activity, also favouring employment (Shane, 2009).

Finally, "market openness" measures how easy it is to enter other markets, which is closely related to the internationalisation dimension. If the formalities required to access other markets are fewer and easier, more firms will be interested in exporting their products to other geographical contexts.

Therefore, this research predicts a positive moderating effect of economic freedom towards the creation of more innovative firms, which are more internationalised and generate more jobs. Then, we propose the following hypotheses:

Hypothesis 3.4A*: The higher likelihood of entrepreneurial teams of creating more innovative firms than individual entrepreneurs is strengthened in contexts of high economic freedom.*

Hypothesis 3.4B*: The higher likelihood of entrepreneurial teams of creating more internationalised firms than individual entrepreneurs is strengthened in contexts of high economic freedom.*

Hypothesis 3.4C*: The higher likelihood of entrepreneurial teams of creating more jobs in their firms than individual entrepreneurs is strengthened in contexts of high economic freedom.*

Chapter 3: Databases for Entrepreneurship and Institutions

As mentioned earlier, this research employs different databases for empirical analysis. One of the two most recognised databases that have information regarding entrepreneurial activity are the Global Entrepreneurship Monitor (GEM) and the Panel Study of Entrepreneurial Dynamics (PSED).

GEM was created as a collaborative research initiative by Babson College and London Business School. Its central focus was to bring together the world's best scholars in entrepreneurship to study the complex relationship between entrepreneurship and economic growth. Since 1998 GEM provides several national indicators on entrepreneurial activity for an increasing number of countries. It is a multi-year major research project designed to describe and analyse entrepreneurial processes within a wide range of countries. GEM focuses on measuring differences in the level of entrepreneurial activity between countries and finding policies that improve the level of entrepreneurial activity.

The PSED research program is conceived to understand scientifically how people start a business. The first effort to collect data was completed by the University of Wisconsin Survey Research Laboratory. Based in this first effort, in 1996 the Survey Research Centre at the University of Michigan collected data from a representative sample of United States households. The PSED offers valid and reliable data on the business formation process based on nascent entrepreneurs, those active in business creation.

Moreover, as entrepreneurship is a phenomenon, not only influenced at an individual level, but also at a country context, one of the most common approaches to analyse entrepreneurship is that embedded in Institutional theory (North, 1991). According to North, "institutions" are the humanly devised restrictions that structure political, economic, and social interaction. They consist of both informal institutions (values, norms, customs, traditions, and codes of conduct),

and formal institutions (laws, economic rules, property rights, and contracts) (Veciana & Urbano, 2008). Hofstede is one of the most utilised data set used to measure informal institutions; and economic freedom data is one of the most preferred data used to measure formal institutions.

Hofstede is a six-dimensional model that serves to identify the cultural behaviours of each group or category and helps to improve the understanding of other cultures by examining how cultural values affect this behaviour. To develop this theory, Geert Hofstede relied on multiple studies from the 1980s and involved more than 50 countries. This theory presents six cultural dimensions: “Power Distance Index (POI)”, “Individualism (IDV)”, “Masculinity (MAS)”, “Uncertainty Avoidance Index (UAI)”, “Long Term Orientation (LTO)”, and “Indulgence vs Containment (Indulgence vs Restraint - IVR)”.

The “Economic Freedom Index” is a series of twelve indicators, created by The Wall Street Journal and the Heritage Foundation. Its stated objective is to measure the degree of economic freedom in each country of the world, applying the ideological concept from economic liberalism, in the field of market economy. The Heritage Foundation and The Wall Street Journal created the index in 1995, inspired by the spirit of The Wealth of Nations, the work of Adam Smith, which assumes that "basic institutions that protect the freedom of individuals to pursue their own economic interests result in greater prosperity for society". (Smith, 2016).

These databases are explained in the following subsections.

3.1 Global Entrepreneurship Monitor (GEM)

3.1.1 Introduction

The Global Entrepreneurship Monitor is a research project initiated in 1998, time in which there was a total lack of information about entrepreneurship that would have allowed comparisons between nations. To better understand the phenomenon, the GEM was established with the objectives of: measuring differences among many economies across the globe from entrepreneurial attitudes, activity and aspirations of individuals; discovering aspects which determine drivers and levels of entrepreneurial activity; and recognising policy implications for improving entrepreneurship in an economy (Bosma, 2013). GEM monitored and kept monitoring entrepreneurial framework conditions in each country through harmonised surveys of experts on entrepreneurial ecosystem. Components of entrepreneurship were and are tracked using the adult population survey. The first model was revised by the GEM research and scientific committee to enrich the theoretical framework. It incorporated an understanding of how economies change as they develop, and the changing nature and contribution of entrepreneurship in this development (Reynolds et al., 2005). However, the primary objective has been investigating differences in national levels and types of entrepreneurship and linking these to job creation and economic growth (Sternberg & Wennekers, 2005).

The GEM project is unique in several ways (Bosma, 2013):

a) The project focuses on the creation of data about new business activity, that provides relevant harmonised data on an annual basis. It is essential for making comparisons across countries.

b) GEM consortium has more than 500 specialists in entrepreneurship research around the world. Moreover, the GEM National Teams publish an annual GEM National Report

following the year when data is collected. These reports emphasise the GEM results of every country because are written by key local specialists in the field.

c) GEM focuses on individuals to understand entrepreneurship.

d) GEM understands entrepreneurship as a process.

e) The annual data collection results in massive datasets that allow analysing individuals' entrepreneurial attitudes, activity and aspirations of firms and sectors from different regional and national contexts.

f) GEM sees innovative activities in firms which are not in innovative or high-tech industries.

g) GEM provides a unique data of informal investors.

h) The way the surveys are administered is of statistical nature.

i) GEM is the exclusive source of information of entrepreneurial ecosystem.

While entrepreneurship is a multifaceted phenomenon with many different meanings and definitions, GEM defines entrepreneurship as: "any attempt at new business or new venture creation, such as self-employment, a new business organisation, or the expansion of an existing business, by an individual, a team of individuals, or an established business" (Bosma, 2013). In this individual view, every person engaged in any behaviour related to new business creation is relevant to the national level of activity.

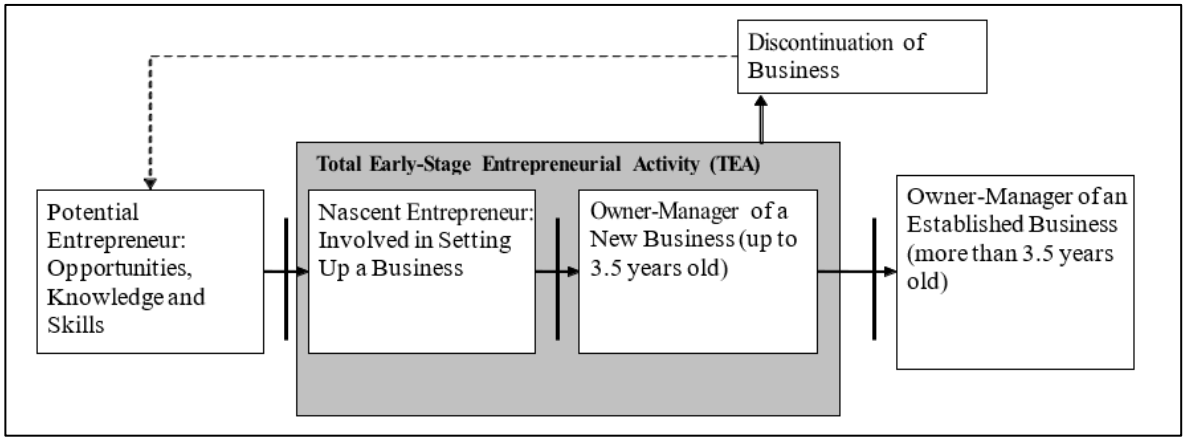
Most available data relate to the number and size of businesses, using sources from company registrations or values. The GEM method considers instead, individuals, assessing attitudes and perceptions towards entrepreneurship and self-reported involvement in starting and/or owning and managing a business. This provides a profile of an entrepreneur that is unique. This is important, because the entrepreneurial process is influenced by attitudes, activities and

ambitions of people, and an economy needs individuals at all stages of the process. This includes those with ambitions and intentions, who have taken action to start a business, and others who have sustained a business into maturity. Moreover, it is important to survey individuals as it provides information about the "informal economy". This informal activity is obviously not captured by official statistics but may be a significant part of the national economy.

3.1.2 Conceptualisation of the entrepreneurship process according to GEM

The entrepreneurial process according to the conceptualisation by the GEM conceives entrepreneurship as a process of identifying, evaluating, and exploiting business opportunities. To this end, the GEM project offers a series of indicators that permit the assessment of the levels of entrepreneurial activity of a territory by identifying people involved in business initiatives that are at different stages of the entrepreneurial process. Such stages include the period in which a person intends to start in the near future, the period in which the individual is immersed in the start-up of a nascent business, the period in which the individual already owns and manages a new business, the period in which the individual created a business is considered established or consolidated, and even the time when the individual leaves a business activity (see Figure 5).

Figure 5: The entrepreneurial process according to GEM.



Source: Bosma, 2013

The various GEM project indicators associated with the entrepreneurial process are described below:

a) Percentage of *potential entrepreneurs* or people in the adult population (18 to 64 years old) who have declared their intention to start a new company in the next 3 years.

b) Percentage of *nascent entrepreneurs* or adults who are launching a company in which time and effort have been invested for its creation, but within which salaries has not been paid for more than 3 months.

c) Percentage of *new entrepreneurs* (owning-managing a new firm) or adults who own a business that has paid salaries for more than 3 months and no more than 42 months and has therefore not consolidated.

d) *Total entrepreneurial activity rate (TEA)* or initial phase, which is the main indicator developed by the GEM project and corresponds to the sum of the percentage of nascent and entrepreneurs.

e) Percentage of *established entrepreneurs* or adults who own a business that has already taken hold in the market after paying salaries for more than 42 months.

f) *Discontinued entrepreneurs*: Indicator of discontinuation of business activity measured as the percentage of adults who have closed or left a business in the last 12 months.

The GEM project is based in two sources of information:

a) **The Adult Population Surveys (APS)**: Consists of a core set of questions to derive GEM measures as perceived opportunities, perceived skills, nascent entrepreneurship, TEA, and entrepreneurial aspirations. It takes place between the months of April and July in all participating nations, regions, and cities.

b) **The National Expert Surveys (NES)**: NES data permits the assessment of the environmental conditions that influence the entrepreneurial activity. It serves to assess the status of the main variables that influence the entrepreneurial process and can condition its magnitude and characteristics. Each country, region or city selects a representative sample of people who are experts in topics related to: financing, government policies, public programs, education, R+D transfer, commercial and physical infrastructure, internal market opening and social and cultural norms, which are interviewed through an extensive questionnaire designed by GEM. The survey is conducted between the months of March and July.

The two data sources of the GEM project nurture various parts of the theoretical model and are complemented by inputs from other secondary sources of proven validity, such as those offered by national statistical institutes or international bodies such as the World Bank or the World Economic Forum, amongst others.

3.1.3 Advantages of the GEM data

The GEM data is especially valuable for the analysis across national contexts as it provides information regarding socio-economic characteristics of entrepreneurs from many countries in a wide time horizon. Socio-economic characteristics include information on age, education level, work experience, intrapreneurial experience, along with their motivations for starting their businesses. Additionally, the GEM data allows comparisons across individual economies, economic development levels, and geographic regions on phases of entrepreneurship, entrepreneurial motives, demographics, impact characteristics (growth potential, innovation, international sales, industry), societal attitudes, and entrepreneurial investors. Moreover, the GEM data provides information regarding the owners of ventures, which allows the classification of ventures created by individual entrepreneurs and those created by entrepreneurial teams.

For the first and third empirical studies of this dissertation (chapter 4 and 6), the GEM data provides relevant harmonised data on an annual basis regarding individual's characteristics to compare the intention of forming entrepreneurial teams, and to compare the types of firms that individual entrepreneurs and entrepreneurial teams created across countries. Moreover, as this research included in the empirical analysis a sample of entrepreneurs from more than 60 countries, the results can be generalised to arrive at strong conclusions.

However, the GEM data has limitations. GEM collects data at a single moment in time on individuals who are at different phases of the entrepreneurial process. The process requires data for different activities at various times in homogeneous entrepreneurs. Empirical based analysis of the business creation process requires at least two elements: first, representative samples of all potential start-ups, including those that succeed and those that finally quit; and second, the

potential of start-ups over time to determine how and why some succeed and others quit. The PSED has been created to respond to this challenge (Reynolds & Curtin, 2010; Reynolds & Curtin, 2007), as we are going to see in the next section.

3.2 Panel Study of Entrepreneurial Dynamics (PSED)

3.2.1 Introduction

The Panel Study of Entrepreneurial Dynamics (PSED) is a research program that contains data on important features of the entrepreneurial or start-up process. It includes information on the adult population's characteristics involved in venture creation, the activities that entrepreneurs make during the process and the proportion and characteristics of the start-ups that can finish as enterprises with profits, start-ups that continue within the process or businesses that finally exit the process (Reynolds & Curtin, 2007, 2010).

Consequently, due to its dynamic nature, the comparison of data collected at a single moment in time on individuals who are at different stages of the entrepreneurial process is limited to understanding the transitions that occur from one stage to another within said process and identifying possible factors that hinder or drive the creation of firms. A more precise understanding of the entrepreneurial process requires examining data from initially homogeneous entrepreneurs, collected periodically for a period that sufficiently covers the duration of the process.

The project began in 1993 with an initial survey of Wisconsin adults. This first effort obtained information regarding who is active in business creation, obtaining data on the start-up effort, and with following interviews, determining the outcomes of the new businesses. University of

Wisconsin completed the data collection. Based on the achievement of this first attempt, several national PSED projects have been implemented.

The most extensive data sets were developed in the United States (US PSED I in 1999 and US PSED II in 2005). PSED was established and guided to the formation of the Entrepreneurial Research Consortium. Over 120 scholars from 34 entrepreneurial research centres provided financial support to implement this first PSED. Midway through the project, the University of Wisconsin Survey Laboratory was closed. Fortunately, and with major support from the Ewing Marion Kauffman Foundation, the data collection responsibilities were transferred to the University of Michigan's Institute for Social Research, where the second and third follow-ups were finalised (PSED II) and the complete data set was harmonised, documented, and placed in the public domain under the supervision of Dr Richard Curtin.

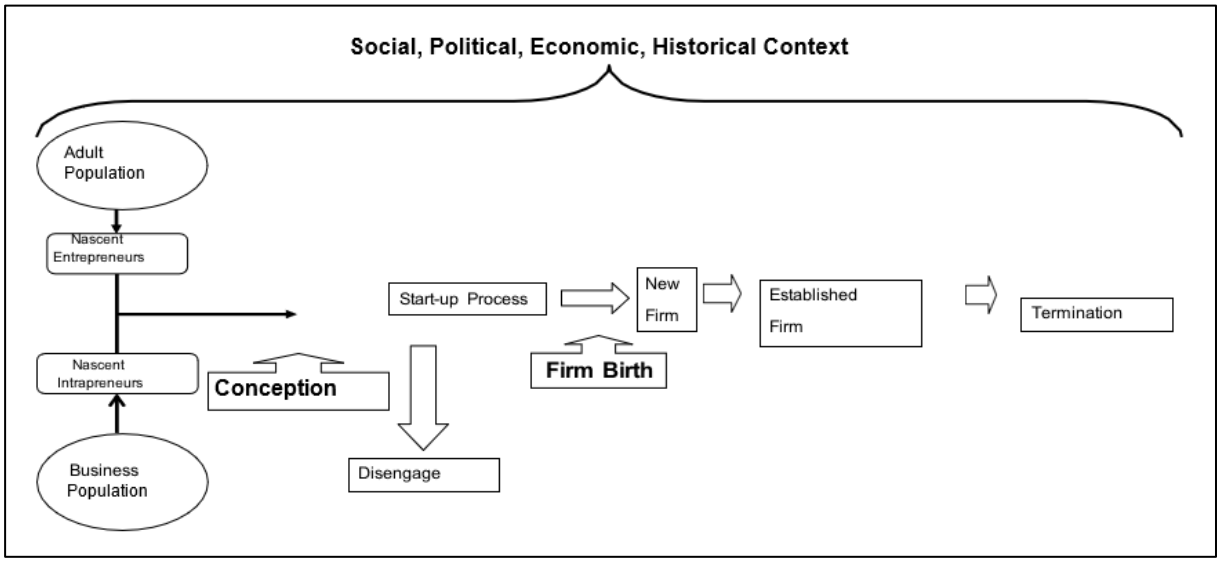
The research protocol was adopted for similar studies in Argentina, Canada, Germany, Greece, the Netherlands, Norway, and Sweden in the first wave from 1997 to 1999. A second wave was implemented in Australia, China, and the Netherlands from 2007 to 2009. Five of these projects were implemented using very similar measures to identify the occurrence and timing of start-up activities and determine the outcomes of the process: US PSED I, US PSED II, Australia (CAUSEE), China (CH-PSED) and Sweden (SE-PSED). These five projects are used to develop the empirical analysis in chapter 5.

3.2.2 Conceptualisation of the entrepreneurship process according to PSED

The major objective of the PSED is to provide a comprehensive and objective description of the business creation process. It needs specific operational definitions of the characteristics of this phenomenon, involving the capturing of critical transition points. The research design assumes that the impact of contextual factors as macroeconomic conditions, the entrepreneurial

climate, the presence of investors, etc. is mediated by the direct actions taken by individuals. PSED have demonstrated that is possible to employ random sampling at a very early stage of venture development and obtain a large proportion of nascent entrepreneurs to achieve comprehensive surveys in multiple waves of longitudinal data collection (Gartner et al. 2004b; Samuelsson and Davidsson, 2009 cited by (Davidsson & Gordon, 2012). Figure 6 shows the research design that reflects a general view of the firm creation process.

Figure 6: The entrepreneurial process according to PSED.



Source: Reynolds & Curtin (2008)

The process begins when individuals start to take some action to create a new firm. It can be from individual's behalf (nascent entrepreneurs) or as part of their job in an existing firm (nascent intrapreneurs). After that, there are two potential second transitions in the process: new firm creation or disengagement. A new firm is defined as an independent commercial actor in the economy. Next to a firm birth, these new organisations go through a period of being a new firm, becoming established firms, and, as their economic usefulness declines, terminate operations. A new firm creation process occurs in a social, political, economic, and historical context (Reynolds & Curtin, 2008).

Nascent entrepreneurs are defined as individuals who are creating new businesses, have been active in firm creation over the past 12 months, expected to own part of their new firms, and were operating a new venture that was not yet profitable.

All five projects have been developed in three phases: first, an initial screening in a representative sample of adults to identify nascent entrepreneurs; second, a detailed phone interview to obtain information about entrepreneurs' characteristics and the activities of a start-up; third, follow-up phone interviews, usually every 12 months, to determine the outcome of implementing a business venture. These follow-up phone interviews involved different sets of questions for those who reported that the new firm had been established, those still working on the start-up, and those who had disengaged from the process.

3.2.3 Advantages of PSED data

The PSED data is the major resource for advancing the scholar understanding of the firm creation process. It covers all types of firm creation illustrated from a representative sample of nascent entrepreneurs and new ventures and includes a range of variables that track the initiatives from inception into the early years of an operational new firm. Moreover, the PSED data includes initiatives that do and do not achieve the start-up process to permit assessments of the unique features of those start-ups that become new firms.

The PSED data provides information regarding on the types of individuals and teams that enter the new firm creation process, on what happens during the process, and what features of individuals and teams, and their activity are related to different outcomes (new firm, disengagement, or continuation of the start-up effort).

The PSED data is especially valuable for the analysis as it provides information regarding the different activities that entrepreneurs perform during the new firm formation process in a wide time horizon and in which countries. For the second empirical analysis (chapter 5), the PSED data provides information about individuals involved in venture creation, the activities the individual entrepreneurs and entrepreneurial teams perform during the process, the timing and sequence of these activities. Moreover, it gives us information about different nascent entrepreneurs and nascent ventures. In particular, the PSED data provides follow-up information over the years about entrepreneurs and their start-ups with profits, the ones that continue forming part of the process or firms that finally exit the process.

3.3 Institutional databases

3.3.1 Hofstede's cultural dimensions

Hofstede's cultural dimensions is a framework for cross-cultural communication, developed by Geert Hofstede. It shows the influence of a society's culture on the values of its members, and how these values connect to behaviour, using a structure developed from factor analysis.

Hofstede's (1984, 2001) vast study of culture offers a clear articulation of differences across countries in values, beliefs and work roles (Pinillos & Reyes, 2011). In his first work, Hofstede originally found cultural differences across countries along four dimensions: power distance, uncertainty avoidance, individualism–collectivism (I–C), and masculinity–femininity (Hofstede, 1984). Later, he added two more dimensions: long-term versus short-term orientation, and indulgence versus restraint (Hofstede, 2001). Every country has a value from zero (0) to one hundred (100) for each dimension, where zero (0) represents the absence of the dimension and, one hundred (100) represents the total occurrence of the dimension. The Index of Hofstede includes all six dimensions.

All dimensions are explained briefly below, with an emphasis on the individualism-collectivism dimension. The individualism-collectivism dimension refers to the extent to which individuals in a society consider themselves free to pursue their individual interest–as opposed to pursue the interest of the group they belong to. This dimension is closely associated with the reasons why some individuals prefer to start a business alone while others prefer to do so with partners. So, this dimension is used as the variable that moderate the relationships that are developed in the first empirical analysis (chapter 4).

a) *Power distance* expresses the degree to which the less powerful members of a society accept and expect that power is distributed unequally. The fundamental issue here is how a society handles inequalities among people (Hofstede, 1984).

b) The *Uncertainty Avoidance* dimension expresses the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity. Hofstede (2011) stated that uncertainty avoiding cultures try to minimise the possibility of unstructured situations by strict behavioural codes, laws and rules, censure of deviant opinions, and a belief in absolute truth.

c) The *Masculinity-Femininity* dimension has its masculinity side represented by a preference in society for achievement, heroism, assertiveness, and material rewards for success. In contrast, femininity stands for a preference for cooperation, modesty, caring for the weak and quality of life (Hofstede, 2011).

d) The *Long-term vs Short-term* dimension refers to the idea that every society must maintain some links with its own past while dealing with the challenges of the present and the future. Societies prioritise these two existential goals differently (Hofstede, 2011).

e) In the *Indulgence vs Restraint* dimension, indulgence stands for a society that allows relatively free gratification of basic and natural human drives related to enjoying life and having fun. Restraint stands for a society that suppresses gratification of needs and regulates it by means of strict social norms (Hofstede, 2011).

f) Finally, the *Individualism-Collectivism* dimension showcases its highest value on individualism, defined as a preference for a loosely knit social framework in which individuals are expected to take care of only themselves and their immediate families. Its opposite, collectivism, represents a preference for a tightly knit framework in society in which individuals can expect their relatives or members of a particular group to look after them in exchange for unquestioning loyalty. A society's position on this dimension is reflected in whether people's self-image is defined in terms of "I" or "we". Hofstede defines individualism as emotional independence from ''groups, organisations, or other collectivises'' (Hofstede, 1984). Individualism is associated with the interest of the individuals to seek and pursue personal goals and own needs that are more important than the needs of the group (Schmutzler et al., 2019). On the other hand, collectivism implies that group interests are fundamental and people are integrated into strong, cohesive "in-groups" and feel that they are an important part of those groups and loyalty to one's in-group is a key factor in life (Hofstede, 1984). The individualism index tends to be higher in developed and western countries, while the collectivism index tends to be higher in less developed and eastern countries. Japan takes a middle position on this dimension.

3.3.2 Economic Freedom

Economic freedom is “the fundamental right of every human to control his or her own labour and property. In an economically free society, governments allow labour, capital, and goods to move freely, and refrain from coercion or constraint of liberty beyond the extend necessary to protect and maintain liberty itself” (The Heritage Foundation, 2020). In other words, economic freedom benefits societies with self-directed individuals’ proving power, whether working alone or working together in associations or corporations, to create the goods and services to respond to the needs and desires of their fellow citizens. No country gives perfect freedom to its citizens, it is consistent with the nature of liberty, which allows individuals and societies to create their own routes to prosperity.

Economic freedom is at its fundamental regarding individual autonomy, with the freedom of choice in obtaining and using economic goods and resources. However, the objective of economic freedom is not simply the absence of government coercion or constraint, but instead the creation and conservation of a mutual sense of liberty for all individuals. It is necessary for the citizens of a nation to protect themselves and promote the peaceful evolution of societies.

The index of economic freedom takes a comprehensive view of economic freedom in twelve aspects. The twelve aspects of economic freedom measured in the index are grouped into four broad categories, of which each one includes three aspects (The Heritage Foundation, 2020). This aggregated index is used for developing the third empirical analysis (chapter 6), employing the index as the variable that moderates the relationship between creating a venture alone or as part of a team, and the performance of the new ventures in terms of innovation, internationalisation, and employment generation. The following explains the four broad categories.

a) *Rule of law:* property rights, judicial effectiveness and, government integrity. Property rights refers to the protection of workers and investors with private rights and effective rule of law. Secure property rights give individuals the trust to carry out entrepreneurial activities, save their income and make long-term plans. Judicial effectiveness refers to legal frameworks that protect the individuals in a country against the violation of the law for others, including violations from governments and powerful parties. Finally, the main factor in government integrity is the absence of corruption. Systemic corruption of government institutions by practices as bribery, nepotism, cronyism, patronage, embezzlement, and graft, restrict an individual's economic freedom.

b) *Government size:* tax burden, government spending, and fiscal health. Governments impose fiscal burdens on economic activity through taxation and borrowing. Governments that let individuals and businesses to retain and manage a larger share of their income and wealth for their own benefit and use, maximise economic freedom. Government spending comes in many forms, for instance, to provide infrastructure, fund research, or improve human capital. Moreover, government spends on public goods. These examples give benefits to society; however, they are eventually financed by higher taxation and entails an opportunity cost. Finally, financial management of resources is a key indicator of fiscal health. A government's budget is one of the clearest indicators of the extent to which it represents the principle of limited government and the government's commitment (or lack of), which is essential for dynamic long-term expansion and a key factor for the advancement of economic freedom.

c) *Regulatory efficiency***:** business, labour, and monetary freedoms. Business freedom is the ability by an individual to establish and run a business without intervention from the state and is one of the most fundamental indicators of economic freedom. Labour freedom refers to the individual's ability to find employment opportunities and work.

In the same way, businesses' ability to contract labour freely and terminate unnecessary workers is essential to developing productivity and forward economic growth. Finally, a stable currency and marked-determined prices are required for monetary freedom.

d) *Market openness:* trade, investment, and financial freedoms. Trade freedom represents individuals' ability to interact freely as buyers or sellers in the international marketplace and can be influenced by restrictions from governments. Investment freedom refers to a context characterised by transparency and equity, supporting all types of firms. Finally, financial freedom refers to system that guarantees the availability of diversified savings, credit, payment and investment services to individuals and businesses.

To conclude, economic freedom is much more than a business environment which favours entrepreneurial activity. It influences different aspects of human development, and empowers people, improving the overall quality of life.

Chapter 4: Empirical study I: antecedents of forming entrepreneurial teams

This chapter develops the first empirical study that covers the first part of the theoretical framework (section 2.1): the antecedents of forming entrepreneurial teams, exploring the influence of individual characteristics (educational level and intrapreneurial experience) on the decision of starting a business as a team and how opportunity-driven mediated such relationships and individualism moderated them. The chapter starts with information about the database and variables in section 4.1. Moreover, the methodology is presented in section 4.2, descriptive statistics in section 4.3, and results of the study in section 4.4.

4.1 Database and variables

To test the hypotheses at the individual and country levels, combined data is used from several sources. First, individual level data for the period 2014–2017 is obtained from the Adult Population Survey (APS) conducted by the Global Entrepreneurship Monitor (GEM) project. It has gathered harmonised annual data in more than a hundred countries since 1999. The data is a key source for the analysis of entrepreneurship across countries (Bosma, 2013) since it provides comparable information on attitudes, perceptions, sociodemographic characteristics, and the aspirations of individuals involved in business creation. Second, country level data is obtained from Hofstede's model on national culture (Hofstede, 2001). This model has been widely used as a source for measuring variables in the literature on culture research (Pinillos & Reyes, 2011), providing six different dimensions. However, this research is focused on individualism only because the interest is on how an individualist context moderates the relationships between certain individual characteristics and the likelihood that an entrepreneur starts a business as a member of a team. Third, additional data on control variables at the country level came from the World Bank's World Development Indicators database (World Bank, 2020) and the Heritage Foundation's Index of Economic Freedom database (The Heritage

Foundation, 2020). By combining the sources, a hierarchical dataset is created with information at the individual and country levels.

As said in the chapter 3, the GEM project identifies and surveys three types of entrepreneurs according to the phase of the business creation and development process: nascent, new, and established entrepreneurs (see Reynolds et al., 2005 for more details). Gartner et al., (2004) found that only in a few cases did the business creation process begin with activities related to team formation (e.g., organising a team as a first start-up activity was carried out by only 6% of a cohort of 822 ventures in the United States). In other words, not all co-founders joined entrepreneurial teams simultaneously from their inception (Cooney, 2005). However, entrepreneurial teams were formed in the early stages of the business creation process (Klotz et al., 2014; Schjoedt et al., 2009). Accordingly, the **sample** is composed of nascent and new entrepreneurs (also known as early-stage entrepreneurs) who were involved in either starting a new venture or owning and managing a business that had paid salaries for less than 42 months (Reynolds et al., 2005). Both nascent and new entrepreneurs that are included in the sample captured cases during the points at which teams had already been formed, and that those who owned and managed new businesses by themselves were truly solo entrepreneurs. The resulting sample included information on 66,716 early-stage entrepreneurs from 66 countries during the period 2014–2017.

4.1.1 Dependent Variable

In the literature, entrepreneurial teams are defined as a group of "two or more individuals who pursue a new business idea, are involved in its subsequent management, and share ownership" (Lazar et al., 2019, p. 29). The GEM project identifies entrepreneurs as those who actively participate in both the ownership and management of the new business (Reynolds et al., 2005).

In addition, entrepreneurs identified by the GEM project are asked how many people, including themselves, both own and manage the business.[1] Thus, if the entrepreneur owned and managed the business entirely on their own, it is considered as an individual entrepreneur. In contrast, if they shared the ownership and management of the business with other co-founders, they are considered members of a team. The dependent variable, *entrepreneurial team*, is a binary variable that took the value of one (1) if the entrepreneur qualified as member of a team, and the value of zero (0) if the entrepreneur qualified as an individual entrepreneur.

4.1.2 Independent variables

Educational level: this variable captures the highest level of education attained by the entrepreneur. The educational process, whether it be post-secondary education or higher, such as college or graduate studies, increased the chance of developing professional networks and acquiring specific formations that benefit from complementarity with others. Therefore, educational level is measured as a binary variable that takes the value one (1) if the entrepreneur had undertaken post-secondary level studies, and the value zero (0) if the entrepreneur had no education or had pre-secondary level education.

Intrapreneurial experience: individuals accumulate intrapreneurial experience while working for an existing organisation that develops innovative projects in teams (Guerrero & Pena-Legazkue, 2013). This variable captures whether, in the last three years, the entrepreneur had played a leading role as an employee in developing and launching new products or services or setting up a new business unit or establishment in an organisation (Bosma et al., 2010). It takes

[1] In the GEM APS protocol, entrepreneurs are initially identified as nascent or owner-managers. Depending on which, they are respectively asked the following questions: “How many people, including yourself, will both own and manage this new business?” or “How many people both own and manage this business?”.

the value one (1) if the entrepreneur had had intrapreneurial experience. Otherwise, it takes the value zero (0).

4.1.3 Mediating variable

Opportunity-driven: there may be as many motives to start a new business as there are individuals involved in entrepreneurial activity. However, the literature has distinguished at least two broad motives, namely, necessity and opportunity (Fuentelsaz et al., 2018b; van der Zwan et al., 2016). Under the GEM methodology, necessity-driven entrepreneurs are those who are involved in entrepreneurial activity because they have no better work choices, while opportunity-driven entrepreneurs are those who engage in entrepreneurial activity to take advantage of a business opportunity (Reynolds et al., 2005). These variable captures whether the entrepreneur's major motive to start a business was opportunity, provided that the main driver in this respect was to be independent or to increase income, rather than just to maintain the income. Thus, it takes the value one (1) if the entrepreneur reported opportunity as a major motive to start a business to become independent or increase income; otherwise, it takes the value zero (0).

4.1.4 Moderating variable

Individualism: in individualist contexts, individuals consider themselves independent and free to pursue individual interests as opposed to the pursuit of group interests, which is more prevalent in collectivist societies (Hofstede, 1984). To measure this cultural tendency to place value on individual goals, each country was scored using the individualism index from the Hofstede's model (Hofstede Insights, 2020), which ranges from the value of zero (0) if the country is totally collectivist to the value of one hundred (100) if the country is totally

individualistic. Because this is a moderator variable, it is mean centred before the calculation of interaction terms.

4.1.5 Control variables

Following previous research, an additional set of variables are included to control for other factors that may have influenced the likelihood of starting a business as a member of a team (Hart, 2014; Held et al., 2018; Ruef et al., 2003; Ucbasaran et al., 2003). Control variables are the following: first, the *gender* of the entrepreneur because previous studies have identified it as a driver of team formation (Ruef et al., 2003). The evidence shows that male entrepreneurs are more likely to form entrepreneurial teams than female entrepreneurs (Hart, 2014). The variable *gender* assigns the values of zero (0) and one (1) to female and male entrepreneurs, respectively.

Second, *age* of the entrepreneur. Young entrepreneurs may possess less experience, which a priori makes them more likely to join others in the business creation process to complement their own human capital (Ucbasaran et al., 2003). However, the networks of younger entrepreneurs may be much less developed than that of older entrepreneurs. Indeed, the empirical evidence has shown that team membership can be positively related to entrepreneurs' age (Ucbasaran et al., 2003). Therefore, the influence of age on the likelihood of starting a business as a member of a team was not clear. The variable a*ge* is measured in number of years. In addition, the *age* variable was squared to test for nonlinear effects.

Third, *work status* of the entrepreneur. Working provides access not only to resources and ideas that are crucial to start a new business (Arenius & Minniti, 2005), but also to social capital that may aid in finding partners to form teams. The variable *work status* is composed of three categories. It takes the value of one (1) if the entrepreneur was a full or part-time worker either

as employee or self-employed; the value of two (2) if the entrepreneur was not working because they were either an employment seeker or a homemaker; and the value of three (3) if the entrepreneur was retired or was a student. Being a full or part-time worker is the reference category as they have a larger preference of forming teams.

Fourth, *sector* in which the entrepreneur's business operated. The nature of the business activity determines the need for resources so that activities transforming and developing products and knowledge require more resources than service developers and providers (Ruef et al., 2003). In addition, transforming and knowledge-generating activities are more likely to require economies of scale through organisational growth (Audretsch, 2004). Accordingly, the greater need for resources and growth may lead entrepreneurs running a transforming business to undertake the entrepreneurship process as members of a team, while those running a consumer-oriented business may decide to develop it alone. Similarly, since the knowledge required may be very technical and a single person may not possess all information required, entrepreneurs are likely to start a business as a team project when they provide business-oriented services (Cooper et al., 1989; Gartner, 1985). Finally, industries with high levels of competition increase the necessity of including cofounders as part of the team (Wasserman, 2012b). *Sector* is measured as a categorical variable and takes the value of one (1) for extractive activities; the value of two (2) for transforming activities; the value of three (3) for consumer service activities; and the value of four (4) for business service activities. Business service activities is the base category because the highest number of entrepreneurial teams are in this sector.

Fifth, the level of economic development of the country per person, as measured by *gross domestic product (GDP) per capita*. Economic development has an influence on the level of new business activity and its patterns (Sternberg & Wennekers, 2005). In a more economically advanced country, the pressure to be productive leaves room for entrepreneurs to enter the

market when their motive to start a business is opportunity rather than necessity-driven (Wennekers et al., 2005). Therefore, in more highly developed economies, the need to create differentiated businesses driven by an opportunity to enter the market may lead entrepreneurs to form teams as a manner of expanding their resources and being more productive. The variable *GDP per capita* is calculated as the natural logarithm of GDP at purchasing power parity (PPP) per capita.

Finally, the level of *financial freedom* of the country, which is a measure of banking efficiency and the independence of the financial sector from government control. The lower the level of government control over banks, the higher the level of financial freedom, which ensures easier and more effective access to financing for individuals and businesses (The Heritage Foundation, 2020). The variable *financial freedom* scores countries from the value of zero (0) if the level of government control is so repressive as to prohibit financial institutions to the value of one hundred (100) if the level of government control is so negligible as to leave financial institutions free to operate fully in market terms. Table 1 shows the description of the variables.

Table 1: Description of the variables for the propensity of forming entrepreneurial teams.

Variable	Description	Source
Dependent variable		
Entrepreneurial team	Dummy variable that equals 1 if the entrepreneur owns and manages the new business together with other co-founders; and 0 otherwise.	GEM
Independent variables		
Educational level	Dummy variable that equals 1 if the entrepreneur has attained postsecondary or graduate education; and 0 otherwise.	GEM
Intrapreneurial experience	Dummy variable that equals 1 if the entrepreneur has been involved in the development of new activities for his/her employer in last three years; and 0 otherwise.	GEM
Opportunity-driven	Dummy variable that equals 1 if the entrepreneur's prime motive to start the new business is the opportunity to increase income or independence; and 0 otherwise.	GEM
Individualism	Interval variable at the country level that represents an index (0-100) measuring the cultural tendency of people to place value on the individual interests over the group interests.	Hofstede Insights
Control variables		
Gender	Dummy variable that equals 1 if the entrepreneur is male; and 0 otherwise.	GEM
Age	Continuous variable that measures the entrepreneur's age in number of years.	GEM
Work status	Categorical variable that equals 3 if the entrepreneur's work status is retired or student; 2 if it is not working; and 1 if it is employee or self-employee (reference category).	GEM
Sector	Categorical variable that equals 4 if the entrepreneur's sector is business service (reference category); 3 if it is consumer-oriented; 2 if it is transforming; and 1 if it is extractive.	GEM
GDP Per-capita	Continuous variable at the country level that measures the level of economic development as the natural logarithm of gross domestic product (GDP) at purchasing power parity (PPP) per capita (U$$).	World Bank
Financial freedom	Interval variable at the country level that represents an index (0-100) measuring the ease and effectiveness of access to financing opportunities for people and businesses.	Heritage Foundation

Source: Own elaboration based on GEM data

4.2 Methodology

A multilevel model is employed to estimate the influence of the different characteristics of the entrepreneur at the individual level on the likelihood of creating a business as a member of a team rather than as an individual entrepreneur, considering the contingent role of the individualist context at the country level as a moderator. Multilevel model analysis is appropriate for fitting data collected at different levels and estimating cross-level moderations (Luke, 2004). A multilevel logistic regression analysis is used because of the binary nature of the dependent variable. The hypothesis is that the motivation of the entrepreneur in starting their business (i.e., whether it was opportunity driven) mediates the relationship between the independent variables (i.e., educational level and intrapreneurial experience) and the dependent variable (i.e., the entrepreneurial team). These hypothesised relationships, shown in Figure 2, require an estimation based on a multilevel mediation model procedure (MacKinnon et al., 2007), which is represented by the following three-equation system:

Level 1: $$Y_{ij}^{*} = \beta_{0j} + \beta_{1j}\mathrm{X}_{ij} + \beta_{2j}\mathrm{V}_{ij} \qquad (1)$$

Level 2: $$\beta_{0j} = \gamma_{00} + \gamma_{01}\mathrm{Z}_{j} + \gamma_{02}\mathrm{W}_{j} + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}\mathrm{Z}_{j} + u_{1j}$$

Level 1: $$Y_{ij}^{*} = \beta_{0j} + \beta_{1j}\mathrm{X}_{ij} + \beta_{2j}\mathrm{V}_{ij} + \beta_{3j}\mathrm{M}_{ij} \qquad (2)$$

Level 2: $$\beta_{0j} = \gamma_{00} + \gamma_{01}\mathrm{Z}_{j} + \gamma_{02}\mathrm{W}_{j} + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}\mathrm{Z}_{j} + u_{1j}$$

Level 1: $$M_{ij}^{*} = \beta_{0j} + \beta_{1j}\mathrm{X}_{ij} + \beta_{2j}\mathrm{V}_{ij} \qquad (3)$$

Level 2: $$\beta_{0j} = \gamma_{00} + \gamma_{01}\mathrm{Z}_{j} + \gamma_{02}\mathrm{W}_{j} + u_{0j}$$

The level 1 part of Eq. (1) explains the dependent variable, Y_{ij}^{*}:

$$Y_{ij}^{*} = \log\left[\frac{p(Y_{ij}=1)}{1 - p(Y_{ij}=1)}\right]$$

which is the log odds that the early-stage entrepreneur i in country j is involved in a nascent or new business as member of a team; β_{0j} is the intercept for country j; X_{ij} is the vector of individual-specific explanatory variables measured at level 1 and β_{1j} represents their corresponding direct effect coefficients (denoted as c in Figure 7); and V_{ij} is the vector of individual-specific control variables measured at level 1 and β_{2j} represents their corresponding coefficients. The level 2 part of Eq. (1) indicates that the level 1 intercept β_{0j} is a function of the level 2 moderator and control variables at the country level, where γ_{00} is the mean value of the level 1 dependent variable once controlled for the effect of variables at level 2; Z_{j} is the moderator variable measured at level 2 that corresponds to country j and γ_{01} represents its main effect; W_j is the vector of control variables measured at level 2 and γ_{02} represents their corresponding coefficients; and u_{0j} is the random effect that captures the variability of the dependent variable across countries j. The level 2 part of the model also indicates that the effect of level 1 explanatory variables β_{1j} is a function of the level 2 moderator variable, where γ_{10} is the mean effect of the level 1 explanatory variables once controlled for the effect of variables at level 2; γ_{11} is the interaction effect between the level 1 explanatory variables and the level 2 moderator variable; and u_{1j} is the random effect that captures the variability in the effect of level 1 explanatory variables across countries j.

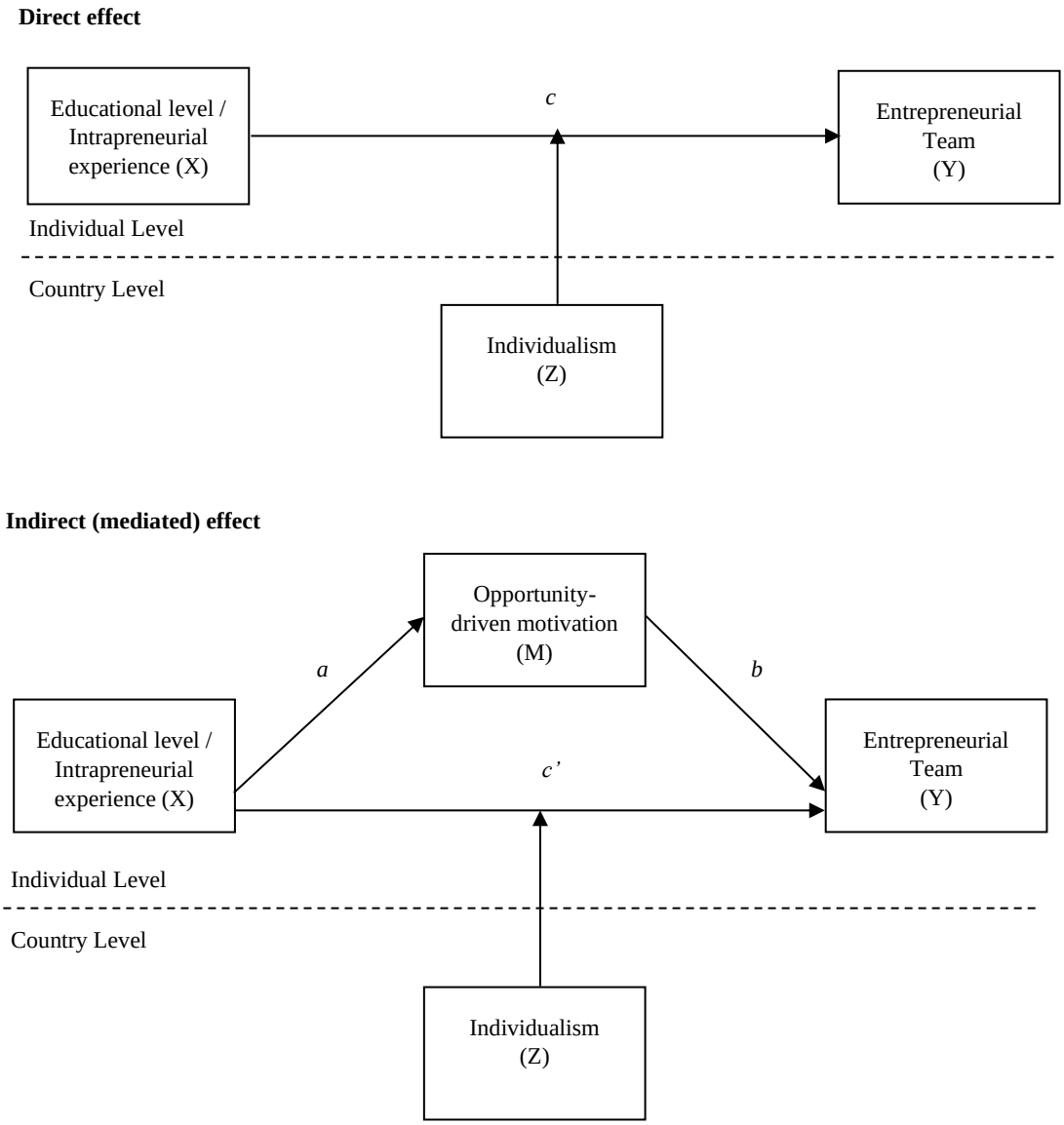
In Eq. (2), the level 1 part includes the individual-specific mediator variable, M_{ij}, and its corresponding coefficient, β_{3j} (denoted as *b* in Figure 7). In this case, β_{1j} represents the indirect effect coefficients (denoted as *c'* in Figure 7) for the vector of explanatory variables, X_{ij}, after adjusting for the effect of the mediator. The rest of the parameters in both the level 1 and level 2 parts of Eq. (2) have an interpretation like that of Eq. (1).

Finally, the level 1 part of Eq. (3) explains the mediator variable, M_{ij}^{*},

$$M_{ij}^{*} = \log\left[\frac{p(M_{ij}=1)}{1-\ p(M_{ij}=1)}\right]$$

which are the log odds that the early-stage entrepreneur i in country j reports opportunity as the major motive in starting their business. In this case, β_{1j} represents the effect of the vector of explanatory variables, X_{ij}, on the mediator (denoted as *a* in Figure 7). The rest of the parameters have an interpretation like that of Eq. (1) and Eq. (2).

Figure 7: Graphic representation of multilevel mediation model with cross-level interaction.



Source: Own elaboration.

4.3 Descriptive statistics

Table 2 and Table 3 present the descriptive statistics and correlations of the variables used in the analysis, respectively. Table 2 shows that 38% of the entrepreneurs of the sample are involved in a team, while the remaining 62% are solo entrepreneurs. Concerning the explanatory variables, 41% of the sample have attained a post-secondary education or higher, 9% have previous intrapreneurial experience, and 28% have set up a new business to pursue a

business opportunity with the aim of becoming independent or increasing their income. 6% operated in the extractive sector, 21% in the transforming sector, 16% in the business-oriented service sector, and 57% in the consumer-oriented service sector.

Table 2: Descriptive statistics for the propensity of forming entrepreneurial teams.

Variable	N	Mean	Std. Deviation	Min.	Max.
Dependent variable					
Entrepreneurial team	66,716	0.38	0.49	0.00	1.00
Explanatory variables					
Educational level	66,716	0.41	0.49	0.00	1.00
Intrapreneurial experience	66,716	0.09	0.29	0.00	1.00
Opportunity-driven	66,716	0.28	0.45	0.00	1.00
Individualism	66,716	37.27	22.97	6.00	91.00
Control variables					
Gender	66,716	0.57	0.50	0.00	1.00
Age	66,716	38.02	12.15	17.00	98.00
Work status					
- Working, full or part-time	66,716	0.90	0.30	0.00	1.00
- Not working	66,716	0.07	0.26	0.00	1.00
- Retired or student	66,716	0.03	0.16	0.00	1.00
Sector					
- Extractive	66,716	0.06	0.23	0.00	1.00
- Transformative	66,716	0.21	0.41	0.00	1.00
- Consumer-oriented	66,716	0.57	0.49	0.00	1.00
- Business services	66,716	0.16	0.37	0.00	1.00
GDP Per-capita	66,716	19,951.22	20,380.02	1,383.17	110,162.10
Financial freedom	66,716	59.60	16.49	10.00	90.00

Source: Own elaboration based on GEM data.

Table 3 shows the correlation matrix. The variables *individualism* and *GDP per capita* are significantly correlated (0.73), suggesting that societies in developed countries tend to be more individualistic than in developing countries. This may have led to some multicollinearity problems in the analysis. However, none of the Variance Inflation Factor (VIF) scores exceed 5.0, so it is not an issue (Bowerman & O'Connell, 1990). Likewise, the categories of *work status* show highly significant negative correlations; however, this is not a problem either, as the reference category is excluded from the model estimation. The same applies to the *sector* categories. Finally, the dependent variable is significantly and positively correlated with the

explanatory variables *educational level* (0.12) and *intrapreneurial experience* (0.10), and with the mediator variable, *opportunity-driven* motivation (0.04).

Table 3: Correlation matrix for the propensity of forming entrepreneurial teams.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8a)	(8b)	(8c)	(9a)	(9b)	(9c)	(9d)	(10)
Dependent variable															
(1) Entrepreneurial team	1.00														
Explanatory variables															
(2) Educational level	0.12***	1.00													
(3) Intrapreneurial experience	0.10***	0.14***	1.00												
(4) Opportunity-driven	0.04***	0.08***	0.04***	1.00											
(5) Individualism	0.03***	0.23***	0.13***	0.02***	1.00										
Control variables															
(6) Gender	0.06***	0.05***	0.09***	0.04***	0.06***	1.00									
(7) Age	-0.06***	0.03***	-0.02***	0.01*	0.11***	0	1.00								
Work status															
(8a) Working	-0.03***	0.04***	0.11***	0.02***	0.04***	0.11***	0.02***	1.00							
(8b) Not working	0.01***	-0.05***	-0.09***	-0.03***	-0.06***	-0.12***	-0.03***	-0.85***	1.00						
(8c) Retired or student	0.05***	0	-0.05***	0.02***	0.02***	0.00	0.00	-0.49***	-0.05***	1.00					
Sector															
(9a) Extractive	0.01***	-0.05***	-0.01**	0.00	-0.01**	0.06***	0.06***	0.00	0.00	0.00	1.00				
(9b) Transformative	0.01*	-0.05***	0.01**	0.00	0.01	0.12***	0.03***	0.03***	-0.03***	-0.01**	-0.13***	1.00			
(9c) Consumer-oriented	0.05***	0.23***	0.09***	0.02***	0.23***	0.1***	0.03***	0.03***	-0.04***	0.01***	-0.11***	-0.23***	1.00		
(9d) Business services	-0.05***	-0.11***	-0.07***	-0.02***	-0.17***	-0.2***	-0.07***	-0.04***	0.05***	0	-0.28***	-0.60***	-0.51***	1.00	
(10) GDP Per-capita	0.07***	0.24***	0.17***	0.03***	0.73***	0.07***	0.13***	0.02***	-0.04***	0.02***	-0.04***	-0.01**	0.24***	-0.15***	1.00
(11) Financial freedom	0.02***	0.14***	0.09***	0.03***	0.43***	0.01***	0.15***	0.01***	-0.02***	0.01***	-0.04***	-0.02***	0.16***	-0.09***	0.54***

Source: Own elaboration based on GEM data.
Notes: Level of statistical significance: ***p ≤ 0.001, **p ≤ 0.01, *p ≤ 0.05, †p ≤ 0.10.

4.4 Results

Tables 4, 5, and 6 present the findings against which the hypotheses are tested. The results in Table 4 allow the analysis of the direct effect of educational level and intrapreneurial experience on the likelihood of being a member of an entrepreneurial team (hypotheses 1.1 and 1.2). The results in Table 5 predict the mediator variable by which the indirect effect of individual characteristics on entrepreneurial teams through opportunity-driven motivation (hypothesis 1.3) can be measured. Finally, the results in Table 6 correspond to the analysis of the contingent role of individualism as a moderator in the relationship between individual characteristics and entrepreneurial teams (hypotheses 1.4A and 1.4B).

4.4.1 Direct effect of individual characteristics on entrepreneurial teams

In Table 4, four nested models are shown. Model 1 is the null model; model 2 includes only control variables; model 3 introduces the main effect of the explanatory variables; and model 4 adds the effect of the mediator variable. Deviance differences are significant ($p < 0.001$), suggesting that each subsequent model improved the goodness of fit. The null model has an intraclass correlation (ICC) coefficient of 6.00%, and a variance of the intercept that is highly significant ($p < 0.001$). This means that approximately 6.0% of the variability in the dependent variable is at the country level, supporting the use of multilevel modeling (Snijders & Bosker, 2011). Other studies using multilevel analysis on entrepreneurship-related topics rely on similar ICC coefficients ranging from 5% to 10% (Autio & Acs, 2010; Hundt & Sternberg, 2016; Kibler et al., 2018; Morales et al., 2019).

Table 4: Multilevel logistic regression predicting propensity of forming teams.

	Model 1	Model 2	Model 3	Model 4
Explanatory variables				
Educational level			1.418***	1.411***
			(0.026)	(0.026)
Intrapreneurial experience			1.741***	1.734***
			(0.050)	(0.050)
Mediator				
Opportunity-driven				1.111***
				(0.021)
Control variables				
Gender		1.203***	1.182***	1.178***
		(0.021)	(0.020)	(0.020)
Age		0.945***	0.940***	0.940***
		(0.004)	(0.004)	(0.004)
Age^2		1.001***	1.001***	1.001***
		(0.000)	(0.000)	(0.000)
Work status:				
- Not working		1.163***	1.252***	1.258***
		(0.037)	(0.040)	(0.040)
- Retired or student		1.558***	1.662***	1.656***
		(0.081)	(0.087)	(0.087)
Sector:				
- Extractive		1.107*	1.243***	1.242***
		(0.045)	(0.052)	(0.052)
- Transforming		0.886***	0.974	0.975
		(0.024)	(0.027)	(0.027)
- Consumer-oriented		0.859***	0.934**	0.935**
		(0.021)	(0.023)	(0.023)
GDP Per-capita		1.310***	1.242***	1.240***
		(0.066)	(0.061)	(0.061)
Financial freedom		0.991**	0.991***	0.991**
		(0.003)	(0.003)	(0.003)
Intercept	0.637***	0.290**	0.400*	0.392*
	(0.037)	(0.128)	(0.173)	(0.169)
Random effects: variance components				
Variance of intercept	0.209***	0.163***	0.156***	0.155***
	(0.038)	(0.031)	(0.029)	(0.029)
Intra-class correlation	0.060	0.058	0.047	0.045
Observations				
Level 1: individuals	66,716	66,716	66,716	66,716
Level 2: countries [country-year groups]	66[200]	66[200]	66[200]	66[200]
Model fit statistics				
Deviance	85,836.05	84,977.37	84,180.13	84,148.24
Deviance difference	-	858.68***	797.23***	31.89***

Source: Own elaboration based on GEM data.

Notes: Level of statistical significance: ***$p \leq 0.001$, **$p \leq 0.01$, *$p \leq 0.05$, †$p \leq 0.10$. Estimates are odds ratios with standard deviations in parentheses.

Table 5: Multilevel logistic regression for starting a business driven by opportunity.

	Model 5	Model 6	Model 7
Explanatory variables			
Educational level			1.282*** (0.025)
Intrapreneurial experience			1.191*** (0.036)
Control variables			
Gender		1.187*** (0.022)	1.179*** (0.022)
Age		0.993 (0.004)	0.990* (0.004)
Age^2		1000 (0.000)	1.000* (0.000)
Work status:			
- Not working		0.787*** (0.029)	0.812*** (0.030)
- Retired or student		1.185** (0.065)	1.211*** (0.067)
Sector:			
- Extractive		0.969 (0.043)	1040 (0.047)
- Transforming		0.906*** (0.027)	0.963 (0.029)
- Consumer-oriented		0.923** (0.024)	0.975 (0.025)
GDP Per-capita		1.101* (0.052)	1069 (0.050)
Financial freedom		0.998 (0.003)	0.998 (0.003)
Intercept	0.381*** (0.019)	0.191*** (0.079)	0.226*** (0.092)
Random effects: variance components			
Variance of intercept	0.145*** (0.027)	0.137*** (0.026)	0.134*** (0.025)
Intra-class correlation	0.045	0.042	0.040
Observations			
Level 1: individuals	66,716	66,716	66,716
Level 2: countries [country-year groups]	66[200]	66[200]	66[200]
Model fit statistics			
Deviance	77,013.26	76,821.16	76,614.39
Deviance difference	-	192.10***	206.76***

Source: Own elaboration based on GEM data.
Notes: Level of statistical significance: ***p ≤ 0.001, **p ≤ 0.01, *p ≤ 0.05, †p ≤ 0.10. Estimates are odds ratios with standard deviations in parentheses.

Table 6: Multilevel logistic regression for starting a business in the team including moderation of the context.

	Model 8	Model 9	Model 10
Explanatory variables			
Educational level	1.411***	1.354***	1.376***
	(0.026)	(0.041)	(0.040)
Intrapreneurial experience	1.735***	1.753***	1.753***
	(0.050)	(0.102)	(0.104)
Mediator			
Opportunity-driven	1.111***	1.102***	1.102***
	(0.021)	(0.021)	(0.021)
Country context			
Individualism	0.997	0.996	0.999
	(0.003)	(0.003)	(0.003)
Cross-level interactions			
Educational level x Individualism			0.996***
			(0.001)
Intrapreneurial experience x Individualism			1000
			(0.002)
Control variables			
Gender	1.178***	1.173***	1.171***
	(0.020)	(0.020)	(0.020)
Age	0.940***	0.940***	0.940***
	(0.004)	(0.004)	(0.004)
Age^2	1.001***	1.001***	1.001***
	(0.000)	(0.000)	(0.000)
Work status:			
- Not working	1.258***	1.255***	1.256***
	(0.040)	(0.040)	(0.040)
- Retired or student	1.656***	1.652***	1.649***
	(0.087)	(0.087)	(0.087)
Sector:			
- Extractive	1.242***	1.231***	1.229***
	(0.052)	(0.051)	(0.051)
- Transforming	0.975	0.971	0.969
	(0.027)	(0.027)	(0.027)
- Consumer-oriented	0.934**	0.934**	0.934**
	(0.023)	(0.023)	(0.023)
GDP Per-capita	1.291***	1.306***	1.308***
	(0.077)	(0.080)	(0.078)
Financial freedom	0.992**	0.991**	0.992**
	(0.003)	(0.003)	(0.003)
Intercept	0.260*	0.244*	0.243**
	(0.141)	(0.136)	(0.133)
Random effects: variance components			
Variance of intercept	0.151***	0.156***	0.151***
	(0.029)	(0.030)	(0.029)
Var. of educational level		0.028**	0.024**
		(0.010)	(0.009)
Var. of intrapreneurial experience		0.131***	0.132***
		(0.036)	(0.037)
Intra-class correlation	0.039	0.044	0.045
Observations			
Level 1: individuals	66,716	66,716	66,716
Level 2: countries [country-year groups]	66[200]	66[200]	66[200]
Model fit statistics			
Deviance	84,146.76	84,019.57	84,002.65
Deviance difference	1.48	127.18***	16.92***

Source: Own elaboration based on GEM data.
Notes: Level of statistical significance: ***p ≤ 0.001, **p ≤ 0.01, *p ≤ 0.05, †p ≤ 0.10. Estimates are odds ratios with standard deviations in parentheses.

The odds ratios of the control variables are similar across models. The odds ratio of *gender* is above 1 ($p < 0.001$), suggesting that men are more likely to be part of an entrepreneurial team than women. Men tend to pursue more ambitious ventures, which require more resources that can be obtained through entrepreneurial teams (resource acquisition strategy). The odds ratio of *age* is significantly below 1 ($p < 0.001$), showing that young people are more likely to be part of a team than older people. On average, young people have fewer resources than old people, so they need to access them through other partners. However, the squared term of *age* is significantly above 1 ($p < 0.001$), which indicates that the likelihood of the entrepreneur being member of a team decreased with age up to a certain point, after which the likelihood increased again. The odds ratios for the *work status* categories are above 1 ($p < 0.001$). Thus, compared with the reference category (i.e., working full or part-time), for those who are not working, such as homemakers or students, becoming an individual entrepreneur may be more difficult and, therefore, the incentive to start a business with other partners seems to be higher. Regarding the sector, the business service is the reference category. In most models, the odds ratio of the *extractive* sector is above 1 ($p < 0.001$), and that of the *consumer-oriented* sector is below 1 ($p < 0.01$), suggesting that the prevalence of teams is higher in the extractive than in the business service sector, while in consumer-oriented sectors the prevalence is lower. On the contrary, the odds ratio of the *transforming* sector is not significant. Thus, the likelihood of the entrepreneur being a member of a team is equal between those operating in the transforming sector and the business service sector. Finally, *GDP per capita* has an odds ratio above 1 in all the models ($p < 0.001$). This result means that entrepreneurial teams are more prevalent in developed countries. Finally, *financial freedom* showed odd ratios below 1 ($p < 0.01$), which is consistent with the notion that easier access to financing made people more likely to start a business alone.

Regarding the theoretical model, *educational level* presents a significant odds ratio above 1 in models 3 and 4 ($p < 0.001$), which confirms hypothesis 1.1. The higher the educational level of the entrepreneur, the higher the likelihood of them being part of a team (instead of pursuing a business opportunity alone). The odds ratio of *intrapreneurial experience* are also significantly above 1 in models 3 and 4 ($p < 0.001$), which confirms hypothesis 1.2. In other words, intrapreneurial experience increases the likelihood of creating a business as a member of a team.

4.4.2 Mediating effect of opportunity-driven motivation

To test hypothesis 1.3, separate models are operated consistently with Eq. (1), Eq. (2), and Eq. (3) to estimate the coefficients shown in Figure 7. Following the standard procedure (Baron & Kenny, 1986; MacKinnon, 2008), mediation implies meeting three conditions. First, the explanatory variable must be a significant predictor of the dependent and mediator variables (i.e., significant coefficients *c* and *a*, respectively). Second, the mediator variable must be a significant predictor of the dependent variable (i.e., significant coefficient *b*). Third, the effect of the explanatory variable on the dependent variable must decrease in the presence of the mediator variable (i.e., reduced significance of coefficient *c'*).[2] The results show that the two first conditions are met. On the one hand, as model 3 of Table 4 reveals, the probability that entrepreneurs would be part of a team significantly increases with *educational level* ($p < 0.001$) and *intrapreneurial experience* ($p < 0.001$). Likewise, model 7 of Table 5 indicates that the probability that entrepreneurs is opportunity-driven significantly increased with *educational level* ($p < 0.001$) and *intrapreneurial experience* ($p < 0.001$). On the other hand, in model 4 of

[2] The first condition can be checked in Eq. (1), and Eq. (3), respectively; the second condition can be checked in Eq. (1); and the third condition can be checked in Eq. (2). Model 3 in Table 4 represents Eq. (1); model 4 in Table 4 represents Eq. (2); and model 7 in Table 5 represents Eq. (3).

Table 4, opportunity rather than necessity as major motive to start a business significantly increases the dependent variable (p <0.001). However, in relation to the third condition, the effect of explanatory variables diminished very slightly when adding the mediator (see model 4 in Table 4). This means that, when present, the mediation effect is partial. Using standardised coefficients, the size of the partial mediation effect is computed.[3] The mediation of *opportunity-driven* motivation represented an indirect effect that is around 2% of the total effect of *educational level* on *entrepreneurial team*, and 1% of the total effect of *intrapreneurial experience* on *entrepreneurial team*.[4] A Sobel, (1982) test indicated that, despite the low size, the partial mediation effect of *opportunity-driven* motivation is significant for *educational level* (5.164, p <0.001) and *intrapreneurial experience* (4.050, p <0.001). These findings give some support to hypotheses 1.3, that is, being an opportunity-driven entrepreneur mediates the relationship between individual characteristics and the probability of being member of an entrepreneurial team, though the effect is very partial.

4.4.3 Moderating effect of individualism

Table 6 shows the analysis of the moderating role of *individualism* on the effect that *educational level* and *intrapreneurial experience* have on the likelihood of creating a business as a member of a team rather than as solo entrepreneur. Model 8 shows that the main effect of *individualism* on *entrepreneurial team* is not significant. However, the interest is mainly in its moderation effect. Model 9 is an extension of model 8; it allows the slope coefficients of the explanatory variables (level 1) to vary across countries (level 2). The deviance difference of model 9 against model 8 indicates that the goodness of fit is significantly improved (p < 0.001)

[3] Because coefficient estimates from logistic regressions cannot be directly compared across models (MacKinnon, 2008), the coefficients a, b, c, and $c´$ were standardised to calculate the indirect effect and to conduct the Sobel test for mediation.

[4] The percentage explained by the indirect effect was estimated as follows: $a * b / (a * b + c´)$.

when adding random effects. Indeed, the variance of the coefficients is significant for both *educational level* ($p < 0.01$) and *intrapreneurial experience* ($p < 0.001$), meaning that their random effects are different from zero. In other words, the slope coefficients of the explanatory variables significantly varied across countries, so that the context may have exerted a moderation effect that would explain such variance. In model 10, the interaction terms area added among the two explanatory variables and *individualism*. The odds ratio of the interaction term between *educational level* and *individualism* is significantly below 1 ($p < 0.001$), suggesting that the influence of educational level on the likelihood of creating a venture as a member of a team is negatively moderated by an individualist context; therefore, supporting hypothesis 1.4A. By contrast, the odds ratio of the interaction term between *intrapreneurial experience* and *individualism* is not significant. Thus, although it significantly varied across countries, the variance of the slope coefficient for *intrapreneurial experience* is not explained by the level of individualism of the context. Therefore, hypothesis 1.4B could not be confirmed; however, the findings revealed that, in this case, the context exert a contingent role that deserves further research.

4.4.4 Robustness checks

Several robustness tests were performed to confirm the main findings of the results. First, compared with those who just begin the business creation process, those entrepreneurs who already owned and managed a new business may have taken the steps to form a team based on the outcomes of the preceding nascent phase (Lazar et al., 2019). Accordingly, the factors explaining team formation may have differed across different phases. To confirm that the results do not depend on potential systematic differences among phases, the sample is split into nascent and new entrepreneurs; and a separate multilevel logistic regression is run. The new

results do not differ substantially from the results discussed above. In general, the sign, size, and significance level of the coefficients are similar for both *educational level* (odds ratio of 1.371 for nascent entrepreneurs and 1.350 for new entrepreneurs, and $p < 0.001$ in both samples) and *intrapreneurial experience* (odds ratio of 1.603 for nascent entrepreneurs and 1.988 for new entrepreneurs, and $p < 0.001$ in both samples). Therefore, these individual characteristics increase the likelihood of the entrepreneur being a member of an entrepreneurial team regardless of the phase in the business creation process. The only difference is that the interaction term between *educational level* and *individualism* became less significant in the sample of new entrepreneurs (odds ratio of 0.997, and $p < 0.10$) when compared to the sample of nascent entrepreneurs (odds ratio of 0.996, and $p < 0.01$), which suggests that the negative moderation effect of an individualistic context is more pronounced in the earlier phases (Table 7).

Table 7: Robustness check: split sample: nascent businesses and baby businesses.

	Nascent businesses		**Baby businesses**	
	Without interaction	**With interaction**	**Without interaction**	**With interaction**
Explanatory variables				
University background	1.352*** (0.045)	1.371*** (0.043)	1.343*** (0.057)	1.350*** (0.056)
Corporate background	1.611*** (0.066)	1.603*** (0.069)	1.988*** (0.200)	1.988*** (0.204)
Country context				
Individualism	0.996 (0.002)	0.999 (0.003)	0.997 (0.003)	0.999 (0.004)
Cross-level interactions				
University background x Individualism		0.996** (0.001)		0.997+ (0.002)
Corporate background x Individualism		1001 (0.002)		1000 (0.004)
Random effects: variance components				
Variance of intercept	0.118*** (0.024)	0.117*** (0.023)	0.209*** (0.043)	0.207*** (0.043)

	Nascent businesses		Baby businesses	
	Without interaction	**With interaction**	**Without interaction**	**With interaction**
Var. of university background	0.022* (0.011)	0.018+ (0.010)	0.037* (0.015)	0.034* (0.014)
Var. of corporate background	0.011 (0.014)	0.012 (0.014)	0.395*** (0.105)	0.396*** (0.105)
ICC	0.035	0.034	0.060	0.059
Observations				
Level 1: individuals	37196	37196	29520	29520
Level 2: countries [country-year groups]	66[200]	66[200]	66[200]	66[200]
Model fit statistics				
Deviance	48697.76	48688.86	34696.13	34692.62
Deviance difference	23.60***	8.89*	140.38***	3.51

Source: Own elaboration based on GEM data.
Notes: Level of statistical significance: ***p ≤ 0.001, **p ≤ 0.01, *p ≤ 0.05, †p ≤ 0.10. Estimates are odds ratios with standard deviations in parentheses.

Second, due to the complexity of estimating a multilevel mediation model with cross-level moderation effects, *educational level* is operationalised as a dummy variable that accounted for postsecondary education or higher to ease the estimation and interpretation of the results. This operationalisation is not very nuanced in comparison with other studies in the entrepreneurship literature (Colombo & Grilli, 2010). However, additional multilevel logistic regressions are used including a categorical variable that distinguishes five levels of education, namely: none, some secondary, secondary, postsecondary, and graduate studies. The new results are consistent with the results discussed above. Compared with none or some secondary studies (i.e., the reference category), the attainment of higher levels of education increases the likelihood of the entrepreneur being a member of a team rather than an individual entrepreneur (*secondary studies* showed odds ratios of 1.191 to 1.214, and $p < 0.001$; *postsecondary studies* show odds ratios of 1.531 to 1.549, and $p < 0.001$; and *graduate studies* shows odds ratios of 1.793 to 1.929, and $p < 0.001$). However, the negative moderation of *individualism* is significant only for the relationship between *graduate studies* and *entrepreneurial team* (odds ratio of 0.993, and $p < 0.001$), which suggested that individualistic context decreases the

likelihood that entrepreneurs who had studied at graduate level would become members of entrepreneurial teams (Table 8).

Table 8: Robustness check: operationalised education level.

	Random slope of secondary studies		Random slope of postsecondary studies		Random slope of graduate studies	
	Without interaction	**With interaction**	**Without interaction**	**With interaction**	**Without interaction**	**With interaction**
Explanatory variables						
Secondary or vocational degree	1.211*** (0.038)	1.214*** (0.038)	1.193*** (0.029)	1.191*** (0.029)	1.192*** (0.029)	1.191*** (0.029)
Undergraduate degree	1.534*** (0.039)	1.540*** (0.040)	1.531*** (0.048)	1.533*** (0.047)	1.549*** (0.039)	1.546*** (0.039)
Graduate degree	1.814*** (0.071)	1.828*** (0.072)	1.809*** (0.071)	1.795*** (0.071)	1.793*** (0.104)	1.929*** (0.107)
Corporate background	1.715*** (0.049)	1.716*** (0.049)	1.715*** (0.049)	1.716*** (0.049)	1.716*** (0.049)	1.715*** (0.049)
Country context						
Individualism	0.996 (0.003)	0.996 (0.003)	0.997 (0.003)	0.997 (0.003)	0.997 (0.003)	0.997 (0.003)
Cross-level interactions						
Second. or voc. degree x Individualism		1002 (0.001)				
Undergraduate degree x Individualism				0.999 (0.001)		
Graduate degree x Individualism						0.993*** (0.002)
Random effects: variance components						
Variance of intercept	1.159*** (0.033)	1.159*** (0.033)	1.159*** (0.033)	1.159*** (0.033)	1.166*** (0.034)	1.164*** (0.034)
Var. of second. or voc. degree	1.017* (0.007)	1.016* (0.007)				
Var. of undergraduate degree			1.015* (0.007)	1.014* (0.007)		
Var. of graduate degree					1.069* (0.030)	1.037+ (0.021)
ICC	0.043	0.043	0.043	0.043	0.044	0.044
Observations						
Level 1: individuals	66716	66716	66716	66716	66716	66716

	Random slope of secondary studies		Random slope of postsecondary studies		Random slope of graduate studies	
	Without interaction	**With interaction**	**Without interaction**	**With interaction**	**Without interaction**	**With interaction**
Level 2: countries [country-year groups]	66[200]	66[200]	66[200]	66[200]	66[200]	66[200]
Model fit statistics						
Deviance	84053.50	84051.38	84049.44	84047.66	84041.72	84032.02
Deviance difference	17.08***	2.12	21.13***	1.78	28.86***	9.70**

Source: Own elaboration based on GEM data
Notes: Level of statistical significance: ***p ≤ 0.001, **p ≤ 0.01, *p ≤ 0.05, †p ≤ 0.10. Estimates are odds ratios with standard deviations in parentheses.

Finally, the dependent variable is restricted by distinguishing between two extreme categories: individual entrepreneur versus entrepreneurial team. However, the dynamics of the entrepreneurial teams and their drivers may have differed depending on the number of members, as there are usually additions and attritions during the team formation process (Lazar et al., 2019). The operationalisation is relaxed of the dependent variable and performs multilevel ordered logistic regressions to predict the number of entrepreneurial team members according to four categories, namely: individual entrepreneur, two entrepreneurs, three or four entrepreneurs, and five or more entrepreneurs. The sign, size, and significance level of the coefficient estimates from multilevel ordered logistic regressions are very similar for both *educational level* (odds ratio of 1.386 to 1.406, and $p < 0.001$) and *intrapreneurial experience* (odds ratio of 1.831 to 1.832, and $p < 0.001$), as well as for the interaction between *educational level* and *individualism* (odds ratio of 0.995, and $p < 0.001$). Thus, the main findings of the results are robust to the alternative operationalisation of the dependent variable (Table 9).

As a conclusion, hypothesis 1.1 can be confirmed: the higher the educational level of the entrepreneur, the higher the probability of them being part of a team (instead of pursuing a business opportunity alone). Also, hypothesis 1.2 can be verified: *intrapreneurial experience* increases the likelihood of creating a business as a member of a team. In regards of the

mediating effect of *opportunity-driven* motivation and the moderating effect of *individualism*, hypotheses 1.3 is confirmed: being an *opportunity-driven* entrepreneur mediates the relationship between individual characteristics and the probability of being member of an entrepreneurial team. Finally, the results let confirm the hypotheses 1.4A: the influence of *educational level* on the likelihood of creating a venture as a member of a team is negatively moderated by an individualist context, however, hypothesis 1.4B could not be confirmed: the grade coefficient for *intrapreneurial experience* was not explained by the level of individualism of the context.

Table 9: Robustness check: number of team members.

	Number of team members	
	Without interaction	**With interaction**
Explanatory variables		
University background	1.386*** (0.042)	1.406*** (0.039)
Corporate background	1.831*** (0.108)	1.832*** (0.111)
Country context		
Individualism	0.996 (0.003)	0.997 (0.003)
Cross-level interactions		
University background x Individualism		0.995*** (0.001)
Corporate background x Individualism		1000 (0.002)
Threshold parameters		
Threshold 1: From 1 to 2 owners	4.302* -2451	4.213* -2392
Threshold 2: From 2 to 3-4 owners	15.328*** -8734	15.012*** -8524
Threshold 3: From 3-4 to 5+ owners	75.280*** -42915	73.735*** -41888
Random effects: variance components		
Variance of intercept	1.180*** (0.037)	1.179*** (0.037)
Var. of university background	1.031** (0.010)	1.022** (0.008)
Var. of corporate background	1.159*** (0.045)	1.161*** (0.046)
ICC	0.048	0.048
Observations		
Level 1: individuals	66716	66716
Level 2: countries [country-year groups]	66[200]	66[200]
Model fit statistics		
Deviance	129812.21	129801.44
Deviance difference	162.87***	10.77**

Source: Own elaboration based on GEM data.
Notes: Level of statistical significance: ***p ≤ 0.001, **p ≤ 0.01, *p ≤ 0.05, †p ≤ 0.10. Estimates are odds ratios with standard deviations in parentheses.

Chapter 5: Empirical study II: process of new venture creation

This chapter advances the second empirical study described in section 2.2 that covers the second part of the theoretical framework: “new venture creation process: individual entrepreneurs vs entrepreneurial teams”. This chapter covers the differences between the process followed by individuals and teams in terms of the activities within the process, their order, the time to perform them, the results of the process, and the timing to reach them. The chapter starts with information about the database and variables in section 5.1. Moreover, the descriptive statistics are presented in section 5.2, and the results of the study in section 5.3.

5.1 Database and variables

Harmonised data from the Panel Study of Entrepreneurial Dynamics (PSED) of five cohorts is used to test the propositions: United States (US PSED I, US PSED II), Australia (CAUSEE), China (CH-PSED) and Sweden (SE-PSED). All five projects started with screening a sample of representative adults to detect those active in business creation. The screening was completed in 2000 for PSED I, 2006 for PSED II. For Australia, it was completed in 2008, for Sweden, in 1998, and finally for China, in 2009. Despite the timely difference in interviews, the harmonisation process compensates for these differences (Reynolds, 2018).

This data is based on 3,910 nascent ventures for which 2,541 have outcome data with two units of analysis: nascent entrepreneurs and nascent ventures. These cohorts are illustrative samples of business creation in their countries, reflecting start-up activities, results, and the timing for those activities. The PSED methodology establishes three main measures of variables: start-up conception, activities, and results.

As described before, conception is the first transition point in the process. The PSED methodology establishes as a criterion for the moment of conception, the period in which at

least two start-up activities occur within the same year. The data includes the date corresponding to the moment that each start-up activity has been started. After identifying the temporal order and the activities that have been completed, the methodology determines the number of months between every pair of activities. For the analysis, with a defined zero reference point, the time when start-up activities occur, or the transition to a result of the entrepreneurial process occurs, is measured in months from the beginning of the start-up. After conception, the start-up continues with the gestation stage, that includes start-up activities and concludes in the second transition point: the firm birth, in which starts the infancy stage, with one of three results. The start-up activities and the results are explained in the following sections.

5.1.1 Start-up activities

All projects used interviews with a wide lists of start-up activities. Respondents were asked about initiation for each activity and, if initiation had occurred, the date of initiation. Despite a wide number of activities, there are a limited number of 19 harmonised activities included in all five projects. As said before, these activities are different, some are a one-time event, such registration with a government agency, while other are a continuous activity, such as developing financial projections. Some activities are common for all entrepreneurs, while others are less likely to be initiated (Reynolds, 2017). Table 10 shows the 19 activities, divided by the milestone (is not an action), and activities in different departments into an organisation.

Table 10: Start-up activities.

Conceptualisation	a. Serious thought (considered to be a milestone)
Financial	b. Invest own money c. Began business plan d. Financial projections e. Obtaining supplied credit f. Asked for formal funding g. Got initial formal financing
Firm setup	h. Acquired registration number

	i. Phone book listing for firm
Human resources	j. Hired employee k. Full time start-up work l. Began to organise start-up team
Production	m. Purchased materials, supplies, parts n. Developed model, prototype o. Leased acquired major assets p. Patent, copyright, trademark filing
Marketing and sales	q. Define markets to enter r. Promote products or services s. Sales, income, or revenue

Source: Own elaboration based on PSED harmonised data.

5.1.2 Results from the entrepreneurship process

After entry or conception there are three results of firms in the nascent period. Firstly, new firm entry is defined when there is presence of monthly profits that covers expenses and owner salaries. If owner's salaries were covered, the venture was assumed to be in profits. Secondly, quit the start-up effort - disengagement from the start-up process. Finally, if the venture does not reach some of the activities (be in profits or quit the start-up effort), PSED consider these ventures as still active in the start-up process. The five PSED projects defines the three results with the following criteria:

a) *New firm birth*: the database in United States (US PSED I and II) consider the birth of a new firm if it has profits after paying salaries for managers who are also included in the expenses. In the Australian project (CAUSEE) a firm exits if has monthly revenue for more than 6 of the last 12 months that covered expenses and salaries for owners actively managing the business. Whilst in the Swedish database (SE-PSED), a new firm is considered born if the new entity has monthly expenses include owner/manager salary. Finally, for China (CH-PSED), the new firm exists if they met two of three criteria: registration, revenue for 6 of 12 months, or profits for six of 12 months.

b) *Disengaged* the start-up effort: for US PSED I, stating that a new venture process is in the *quit* state, signifies that the venture is finished, and no more work would take place. On the US PSED II, disengagement is regarded as work taking less than 160 hours in

the past 12 months; expecting to work less than 80 hours on the firm in the next 6 months; or no longer a major focus of the entrepreneurs' time. For CAUSEE, exiting the process is like the US PSED I condition where no work was carried out on the last 12 months. For SE-PSED, exiting the venture, is explained as the year/month when the entrepreneur gave up; and finally, for CH-PSED, disengagement is regarded as spending less than half of previous work on project.

c) *Active start-up*: all firms that qualified as entering the start-up process but have not become a profitable firm or have quit the process.

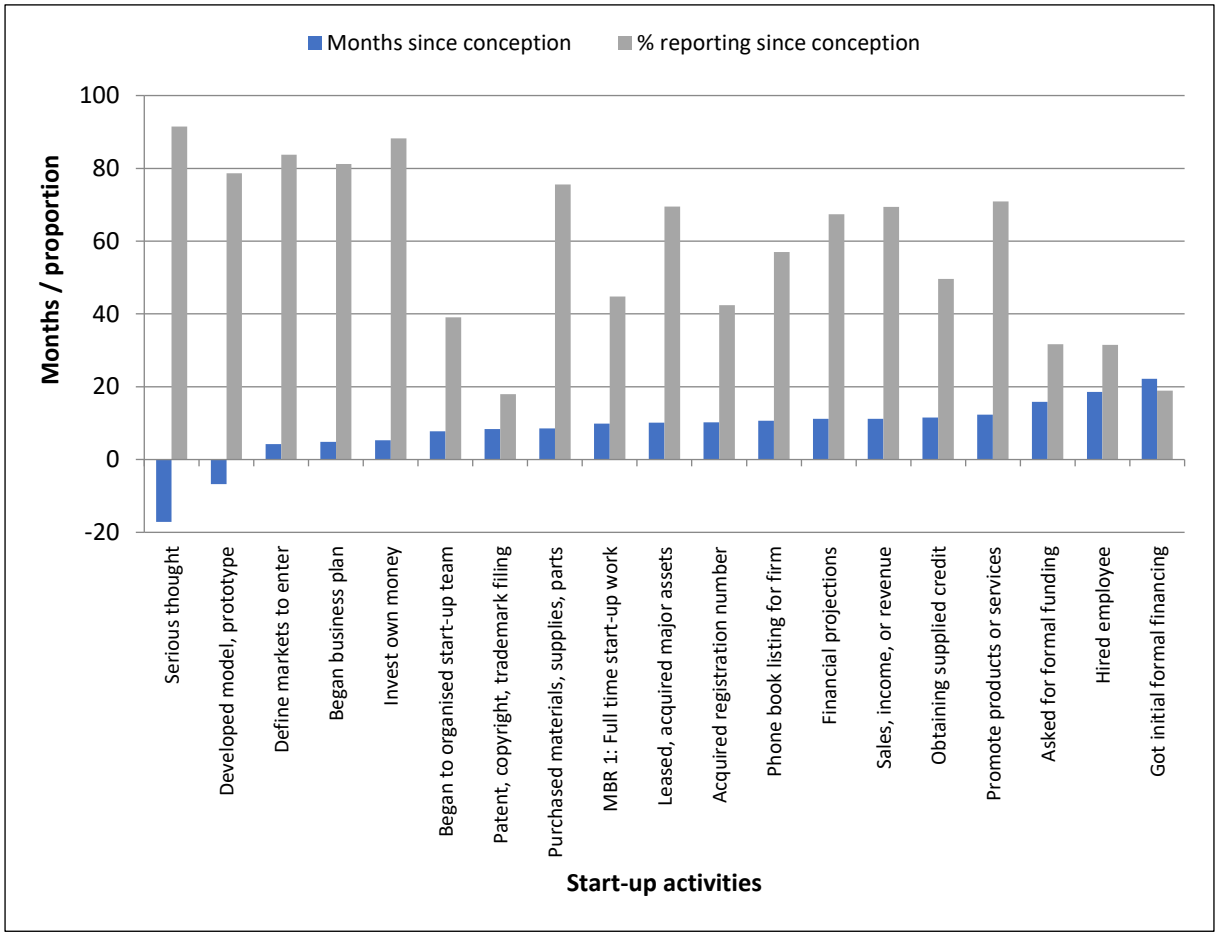
5.2 Descriptive statistics

Descriptive statistics is showed in two subsections: start-up activities in the subsection 5.2.1 and possible results in the subsection 5.2.2. For the two subsections the whole sample of entrepreneurs in the five projects is used.

5.2.1 Start-up activities

Figure 8 displays the total start-up activities in the five projects. The blue colour represents months since conception for each activity described in the horizontal axis, and the grey colour represents the percentage of the total sample which has reported each activity, respectively. A total of 19 activities were performed by the ventures during the new business creation process. It shows the order of activities' execution from left to right according to the average time at which they were carried out. The beginning of the process (month 0) is defined as the moment in which two activities were carried out in the same year. This definition excludes those who could only think of a business idea but did not carry out any additional activity.

Figure 8: Order of start-up activities. Total sample: [n=2,541].



Source: Own elaboration based on PSED harmonised data.

Most ventures in the sample seriously consider creating a company, and that conviction comes, on average, almost 20 months before conception. It is the first milestone of the entrepreneurial process. The first activity after *serious thinking* is *developed model, prototype*, almost 80% of the ventures made this activity 7 months before conception. After developing a model or prototype, 84% of the ventures *defined markets to enter* 4 months after conception. *Began business plan* is the fourth activity and almost 82% performed the activity 5 months after conception, demonstrating that a significant majority of the sample considers that developing a business plan is crucial in the beginning. Also, with the business plan, some ventures (around 67%) completed *financial projections* at the end of the first year. After it, 88% of the ventures *invest their own money* in month 5. *Began to organise a start-up team* appears as the sixth

activity in the entrepreneurial process. As the literature have studied, forming an entrepreneurial team is a key decision, and, as said in the introduction of this dissertation and confirmed with the first empirical study, not all entrepreneurs decide to form teams and the figure illustrates that only 40% of the total sample *began to organise a start-up team.* It is performed in month *8*. In the section 5.3 of this dissertation is analysed the total sample which is split into the five countries and the differences between the ventures that decide to form entrepreneurial teams, and which do not is analysed. Other activity that was performed closely to 75% that is *purchased materials, supplies, or parts*. This activity is completed in month 9.

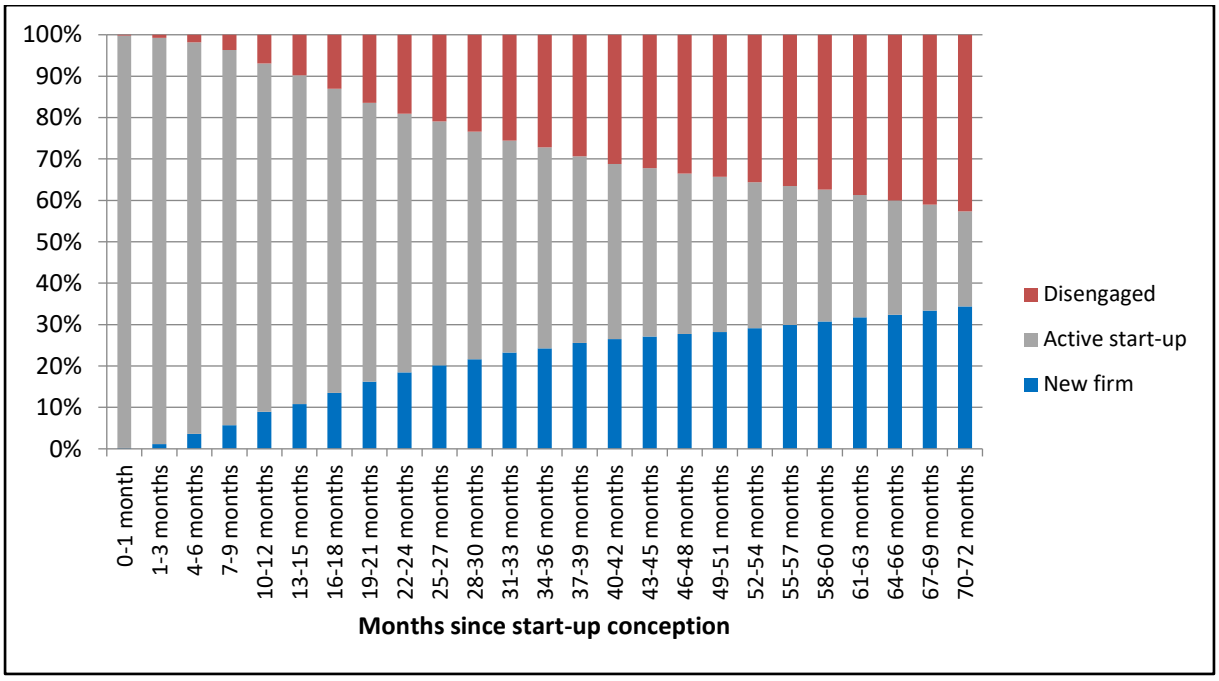
The PSED project provides information about the application for finance and, if successful, its approval. The financing request appears around 16 months since conception and its approval, two years after. Around 32% of the sample requests financing and up to 19% of this group receives it, making it the second less frequent. The activity that is less frequent is *patent, copyright, trademark filing* with only 18%, performed in the eighth month.

5.2.2 Results from the entrepreneurship process by months since conception

Since conception, there are three possible results of the new venture creation process, which can be described for the entire sample of 2,541 nascent ventures. Figure 9 and Figure 10, summarise the whole sample of entrepreneurs in the five projects. Figure 9 provides information about the results of the entrepreneurial process by months since entry until month 72. The possible results as said in the past section are *new firm* (represented in the figure in blue colour), *disengaged* (represented in the figure in red colour) and, if the ventures have not reached neither profits nor disengaged, they are still in the process as an *active start-up* (represented in the figure in grey colour). For the entire sample, the figure shows that at the end of the first year, almost 9% of the nascent entrepreneurs are new firms (in profits), while

almost 7% are ventures that quit the process. Finally, almost 84% are active nascent entrepreneurs. At the end of the second year, new firms and disengaged ventures increased to 19%, but a significant majority are still active start-ups. For the third year 24% of ventures are in profits, while 27% of ventures quit the entrepreneurial process, and active start-ups represent 49% of the total of the sample. For the end of the fourth year, almost 28% are new firms, closer to 34% abandoned the process, and 38% are still active ventures. For the year 5, the new firms reached almost 31% of the total sample, the ventures that quit are more than 37%, and active entrepreneurs dropped to 32%. Finally, for the end of the project (month 72), the new firms are more than 34%, ventures that disengaged the entrepreneurial process are almost 43%, and exactly 23% are still active start-ups.

Figure 9: Results by months since conception: 0-72 months. Total sample: [n=2,541].

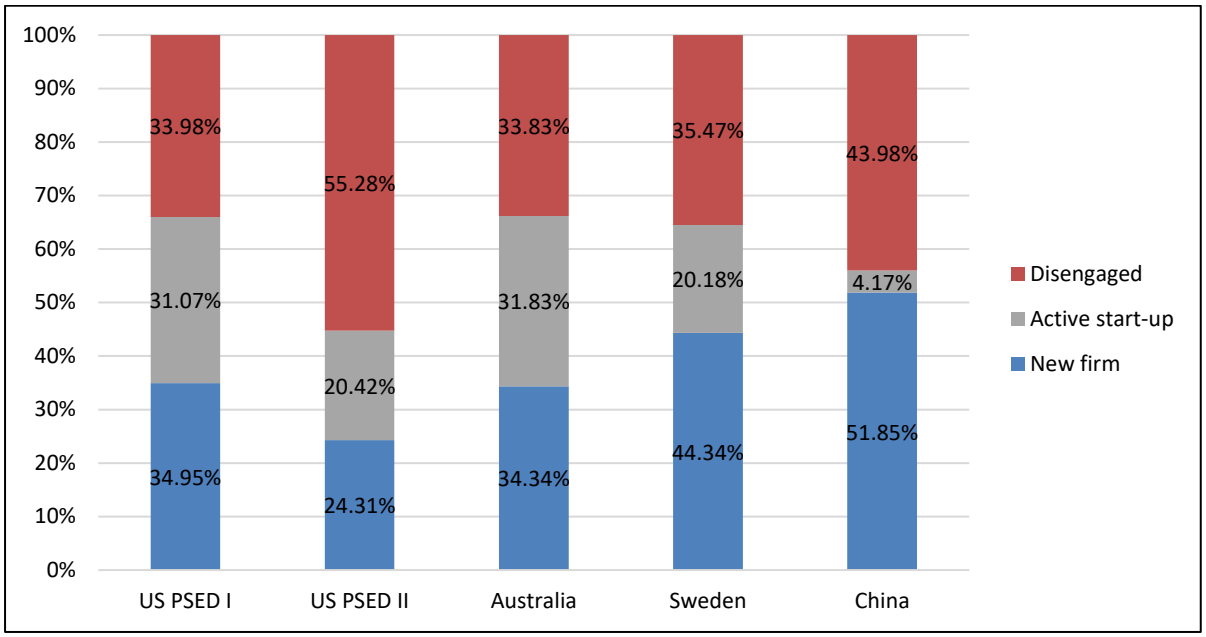


Source: Own elaboration based on PSED harmonised data.

As mentioned in previous chapters, the national context's study is very important when analysing entrepreneurial activity. For this reason, the results of entrepreneurial activity were analysed for the 5 countries in the total sample. However, the analysis of the context in the new

firm creation process needs to be analysed further in future. Figure 10 compares the results per country since conception until month 72. Despite using a uniform methodology, the results show considerable variability, even within the same country, such as the United States, which implemented the project at two different time periods. This means that the geographical and temporal context greatly influences the development of the business creation process. When comparing all five projects, China is the country with the largest number of new firms (51.85%), and the smallest number of active start-ups with 4.17%. The second project in United States exhibits the most disengaged ventures with a 55.28%, followed by China with almost 44%. Australia is the country that has most active start-ups, with a 31.83%. The country's economic context also matters, with United States as the proof, where the data from the first project, collected in 1999 (where economic expansion reached the peak) were substantially better than those collected from 2005, which faced the height of the global financial crisis. Finally, the figure also shows that there are differences between the velocity of new business creation among countries. For example, China has a superior velocity because active start-ups are a minimum part of the total sample at the end of the process. On the contrary, the other countries have a larger active start-up percentage, mainly United States in its first project and Australia.

Figure 10: Results since conception: month 72. Comparison by countries. Total sample: [n=2,541].



Source: Own elaboration based on PSED harmonised data.

To test whether entrepreneurial teams have better results after new business creation, the PSED harmonised data is split into individuals and teams, and both groups are compared in terms of start-up activities and results, in a similar manner than what was done with the total sample but including results for every year, order, and timing.

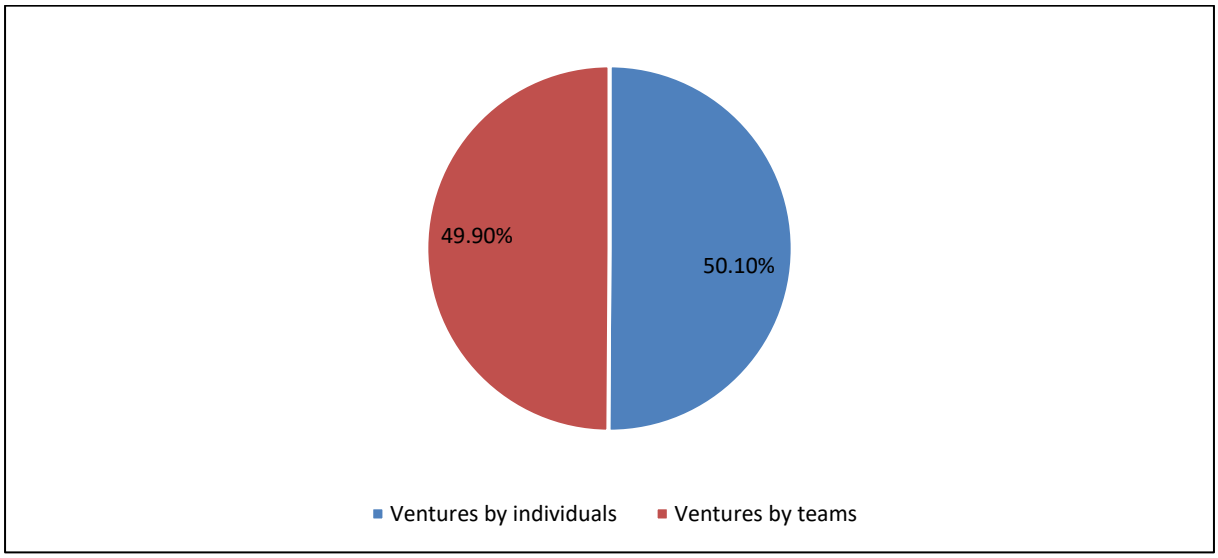
5.3 Results from the entrepreneurship process: individuals vs teams

To test whether entrepreneurial teams have better results when creating new ventures, the PSED harmonised data is split into individuals and teams. Both groups are compared in terms of start-up activities (proposition 2.1A and 2.1B), results of the process (proposition 2.2) and, the time to perform start-up activities and to reach results, specially reaching profits (proposition 2.3A y 2.3B). The comparison methodology is based on a statistical analysis by differences in means and proportions. For differences in means and proportions the comparison variables are dichotomous. For differences in means, the null hypothesis of "no difference

between means" is tested with Student's t-test. Differences in proportions is tested with the Rp-test.

When splitting the data, the number of nascent ventures with outcome data decreased to 2,519 distributed by 1,262 ventures by individuals (50.10%), and 1,257 ventures by teams (49.90%), as Figure 11 shows. All the subsequent analysis between ventures by individuals and teams are based in this sample.

Figure 11: Distribution of total sample by ventures created by individuals and by teams.



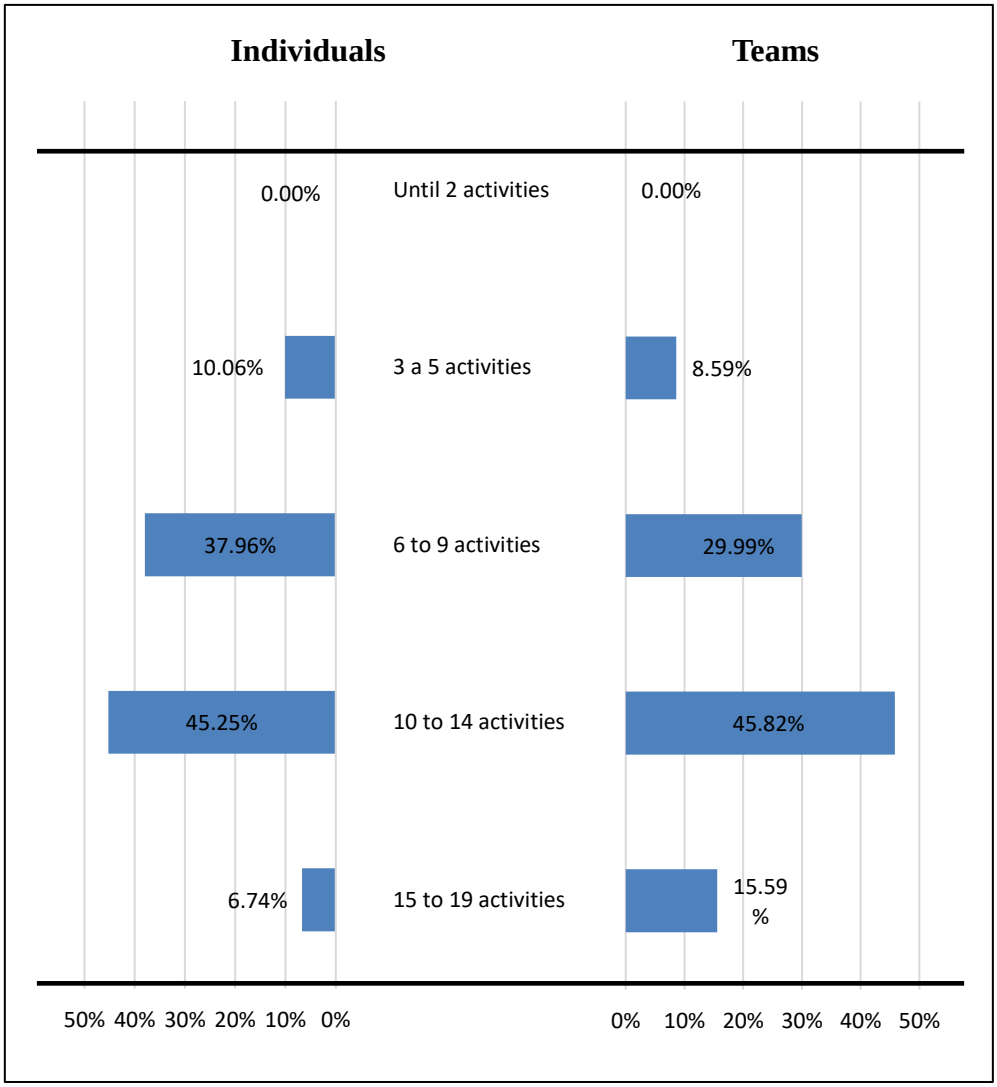
Source: Own elaboration based on PSED harmonised data.

5.3.1 Start-up activities and results from the entrepreneurship process

When analysing start-up activities, differences between ventures created by individuals and by teams are identified. To start the analysis, the number of start-up activities performed by individual entrepreneurs and entrepreneurial teams is compared. After this comparison, the order of start-up activities that both groups perform is also contrasted. Finally, the order of start-up activities by the different results (*new firm*, *active* or *disengaged*) is contrasted because, although the propositions focus on *new firms* (reaching profits), the other results are also relevant to determine valid empirical results for the whole population.

Figure 12 provides information on number of activities that every group performed during the 72-month period. In general, ventures created by teams have performed more activities than ventures created by individuals. When analysing the categories 3 to 5 activities and 6 to 9 activities, the percentage of ventures created by individuals are bigger. Even in the range from 10 to 14 activities is almost equal. However, when analysing the range from 15 to 19 activities the difference is crucial, as 15.59% of ventures created by teams reached almost the vast number of activities, confirming proposition 2.1A. The importance is related to the proportion of firms that reach profitability. As the number of ventures in profits is bigger when teams create them, it can be concluded that a bigger number of activities completed in the period leads to better performance. This result confirms studies that have pointed out that ventures created by entrepreneurial teams perform better than the ones developed by individual entrepreneurs (Chowdhury, 2005; Reynolds, 2017; Shane, 2009).

Figure 12: Number of start-up activities since conception.



Source: Own elaboration based on PSED harmonised data.

In addition, Table 11 shows that entrepreneurial teams perform a larger number of activities than individual entrepreneurs when creating their ventures (by proportions), also confirming proposition 2.1A. Additionally, those differences are validated by the Rp-test and have statistical significance.

Table 11: Number of start-up activities. Rp-test.

	Individuals	Teams	Rp-test
Nº of activities			
Until 2 activities	0.00%	0.00%	0.59†
- 3 to 5 activities	10.06%	8.59%	0.84†
- 6 to 9 activities	37.96%	29.99%	4.93***
- 10 to 14 activities	45.25%	45.82%	-0.72†
- 15 to 19 activities	6.74%	15.59%	-8.18***
Total	100.00%	100.00%	

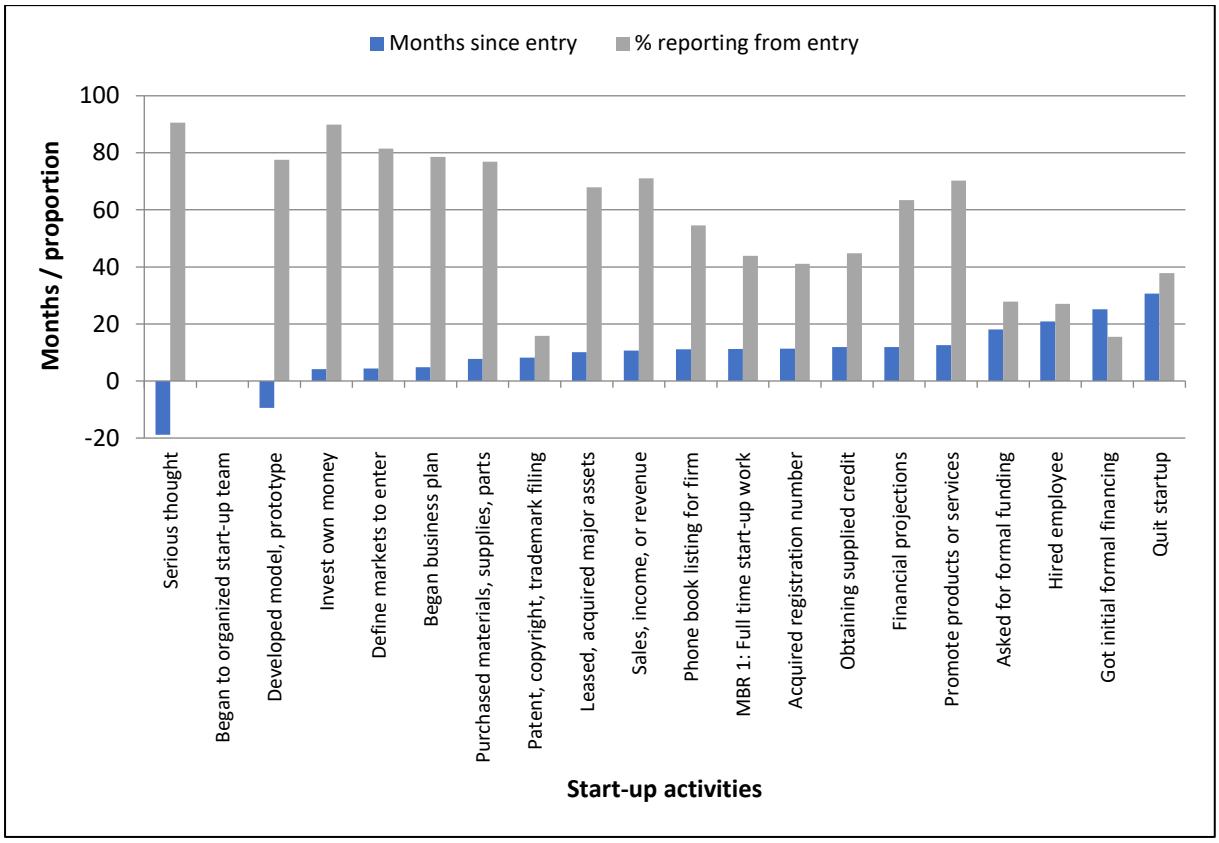
Source: Own elaboration based on PSED harmonised data.

5.3.1.1 Order of start-up activities by individuals and by teams

In this section, the order of activities between ventures created by individuals and by teams (proposition 2.1B) is compared. The analysis confirms that the order in which activities are performed by each group is different. Figure 13 illustrates the order of activities for ventures created by individuals and Figure 14 for ventures created by teams. For the majority of the 19 start-up activities, ventures created by teams have performed the activities in a different order when compared to ventures created by individuals, confirming the proposition 2.1B. As a highlight, ventures created by teams *hired an employee* 4 months before ventures created by individuals. This result is according to the literature that have showed that entrepreneurial teams perform better than individual entrepreneurs in terms of employment generation (Chowdhury, 2005; Reynolds, 2011; Shane, 2009). Ventures created by teams *asked for formal funding* 4 months before ventures created by individuals. More importantly, ventures created by teams *got initial formal financing* 5 months before ventures created by individuals. Additionally, 8% more of the ventures created by teams *got initial formal financing* when compared to the ones created by individuals. Those results are according to the literature that have demonstrated that entrepreneurial teams can access to more resources (Aldrich & Kim, 2007; Chandler et al., 2005; Klotz et al., 2014; Penrose, 1995; Ruef, 2010; Wasserman, 2012a)

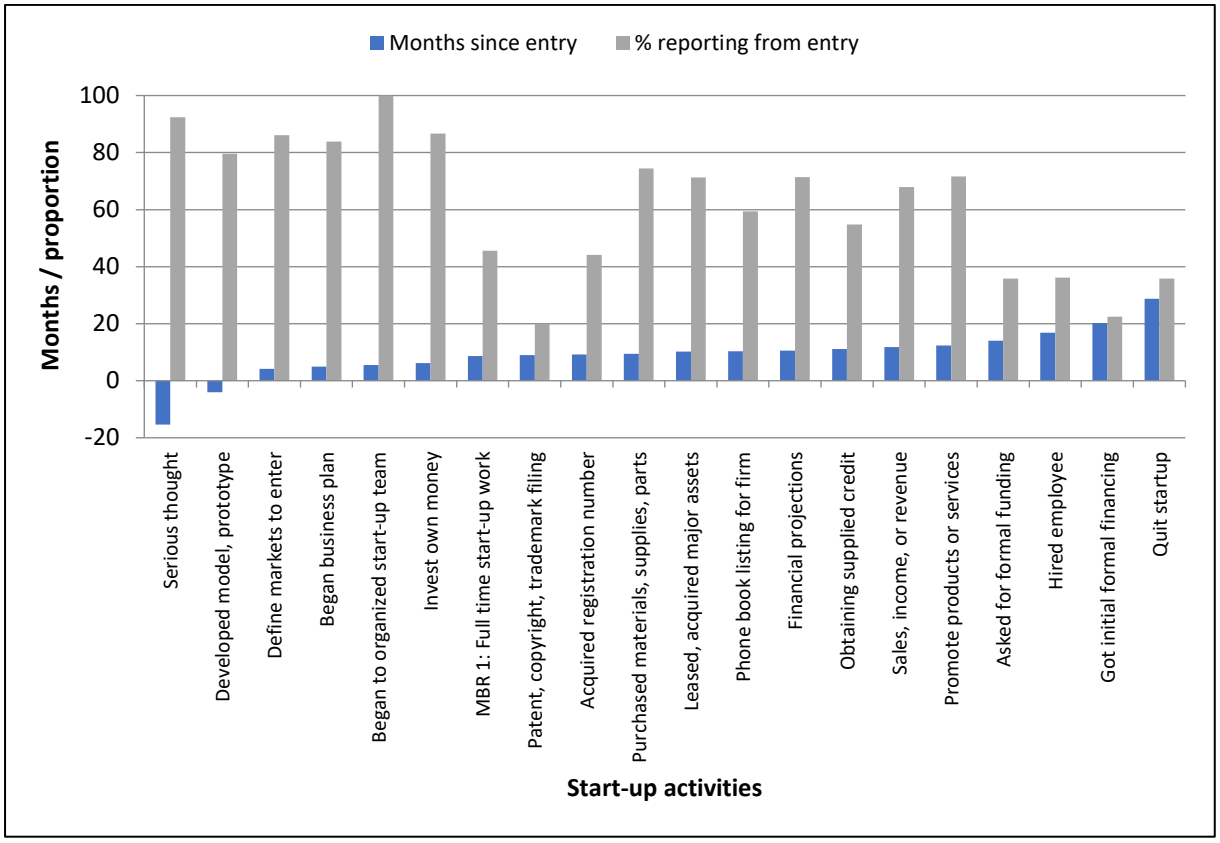
and investors rarely consider a project of an individual, and that capacities and knowledge of entrepreneurial teams are more valued (Cooper et al., 1989, 1994; Kamm et al., 1990).

Figure 13: Order of start-up activities. Ventures created by individuals [n=1,262].



Source: Own elaboration based on PSED harmonised data.

Figure 14: Order of start-up activities. Ventures created by teams [n=1,257].



Source: Own elaboration based on PSED harmonised data.

5.3.1.2 Order of start-up activities by individuals and teams by results at month 72 depending on the result (new firms, disengaged and active start-up).

Finally, the results between both groups in relation to the order of activities are compared. In the following, the order of start-up activities by ventures created by individuals and teams is analysed according to the three results: *new firm*, *disengaged* and *active* start-up to test the proposition 2.1B. As mentioned before, the focus is on the birth of a *new firm*, however, *disengaged*, and *active* complement the analysis. Additionally, this part of the analysis allows to test the proposition 2.2, which stated that entrepreneurial teams create more ventures that reach profits when compared to individual entrepreneurs.

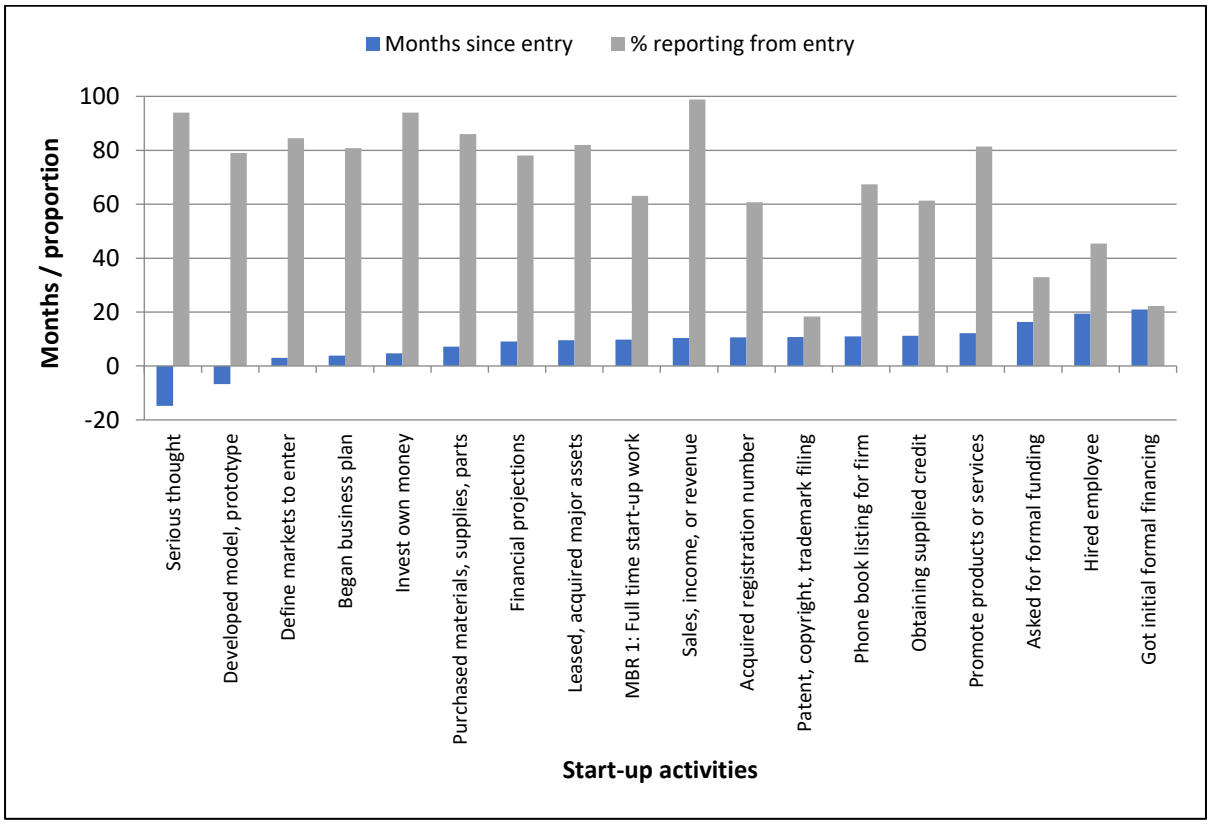
Results from the entrepreneurship process: new firms

When analysing the number of ventures that become new firms (with profits), 379 ventures created by teams reported profits, while 328 were created by individuals. Both ventures become *new firms* around month 22. Figure 15 shows the order of start-up activities for ventures which become new firms created by individuals, and Figure 16 represents those activities for the ones created by teams.

When analysing the number of months since conception, it can be emphasised that. Ventures created by teams *asked for formal funding* before ventures created by individuals. In a similar manner, ventures created by teams *got initial formal funding* before ventures created by teams with a difference of almost 3 months, but crucially, the percentage of ventures created by teams which obtained external finance is 10% bigger than the ones created by individuals. It demonstrates that obtaining external financing (from business angel investors, venture capital, banks, or public institutions) becomes a fundamental factor for developing a venture. Lack of financing hinders business growth, a problem that is more relevant in the case of new companies (Cabral & Mata, 2003).

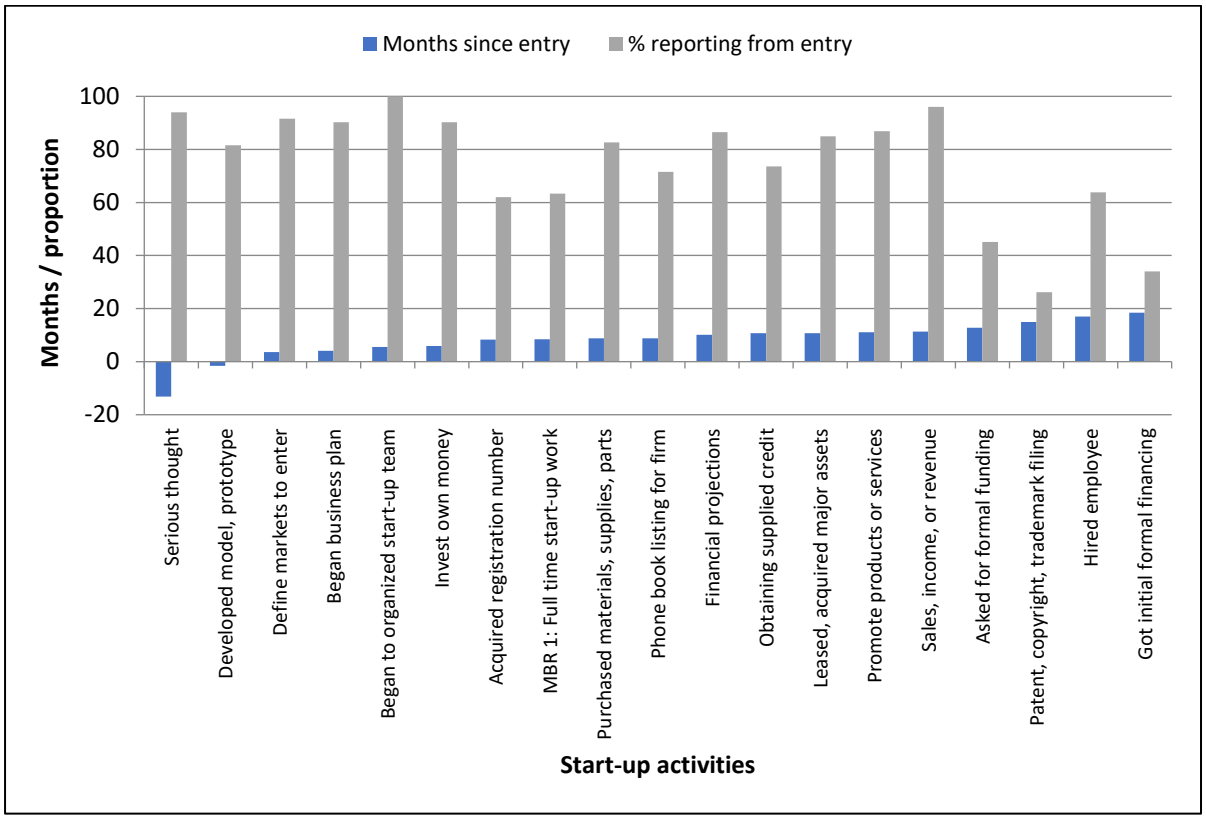
In regard of proposition 2.2, Figure 15 shows the number of new firms (to be in profits) created by individuals and Figure 16 shows the number of new firms (to be in profits) created by teams. Entrepreneurial teams create more ventures that reach profits when compared to individual entrepreneurs. The number of firms created by individuals are 328 and the number of firms created by teams are 379.

Figure 15: Order of start-up activities of new firms created by individuals [n=328 after 72 months].



Source: Own elaboration based on PSED harmonised data.

Figure 16: Order of start-up activities of new firms created by teams [n=379 after 72 months].



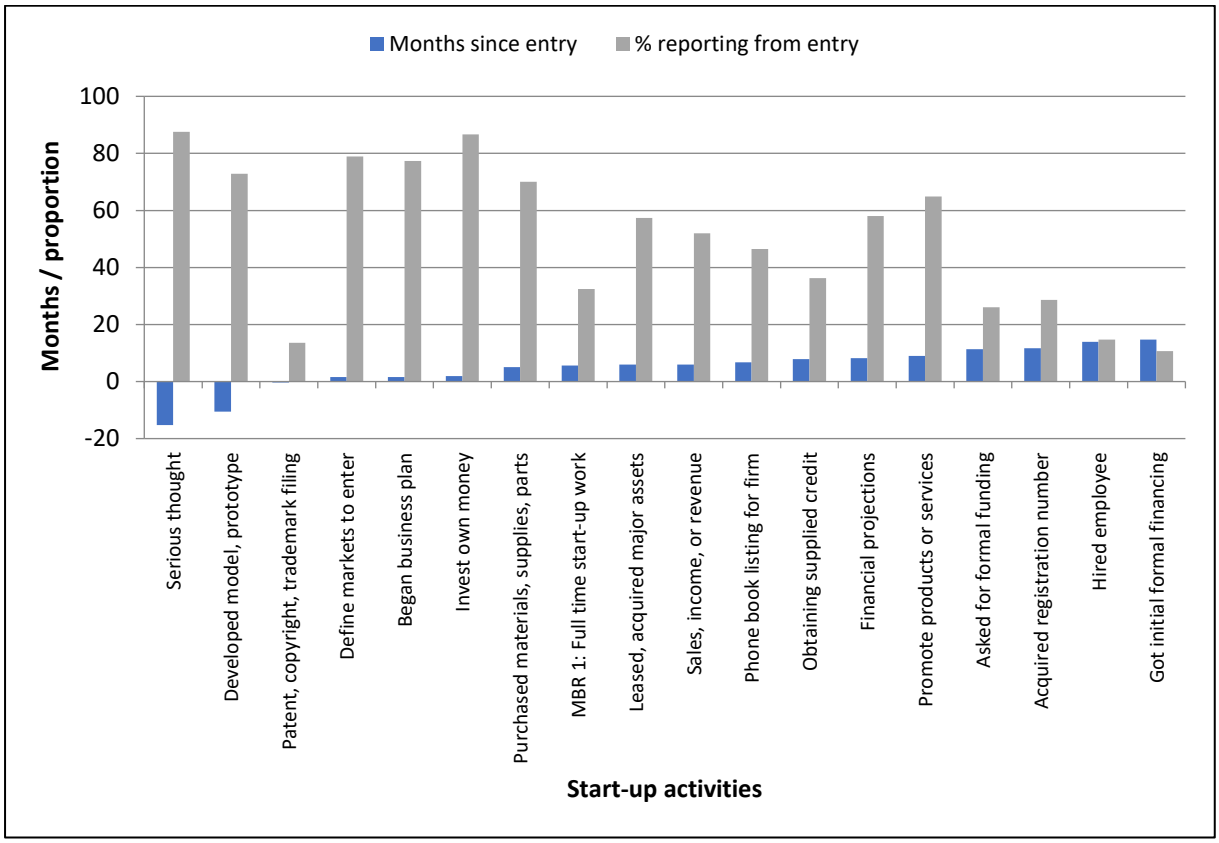
Source: Own elaboration based on PSED harmonised data.

Results from the entrepreneurship process: Disengaged

Disengaged ventures created by individuals are 450 and disengaged ventures created by teams are 430 at the end of the 72 months period. Figure 17 and Figure 18 provide information about the order of start-up activities for disengaged firms.

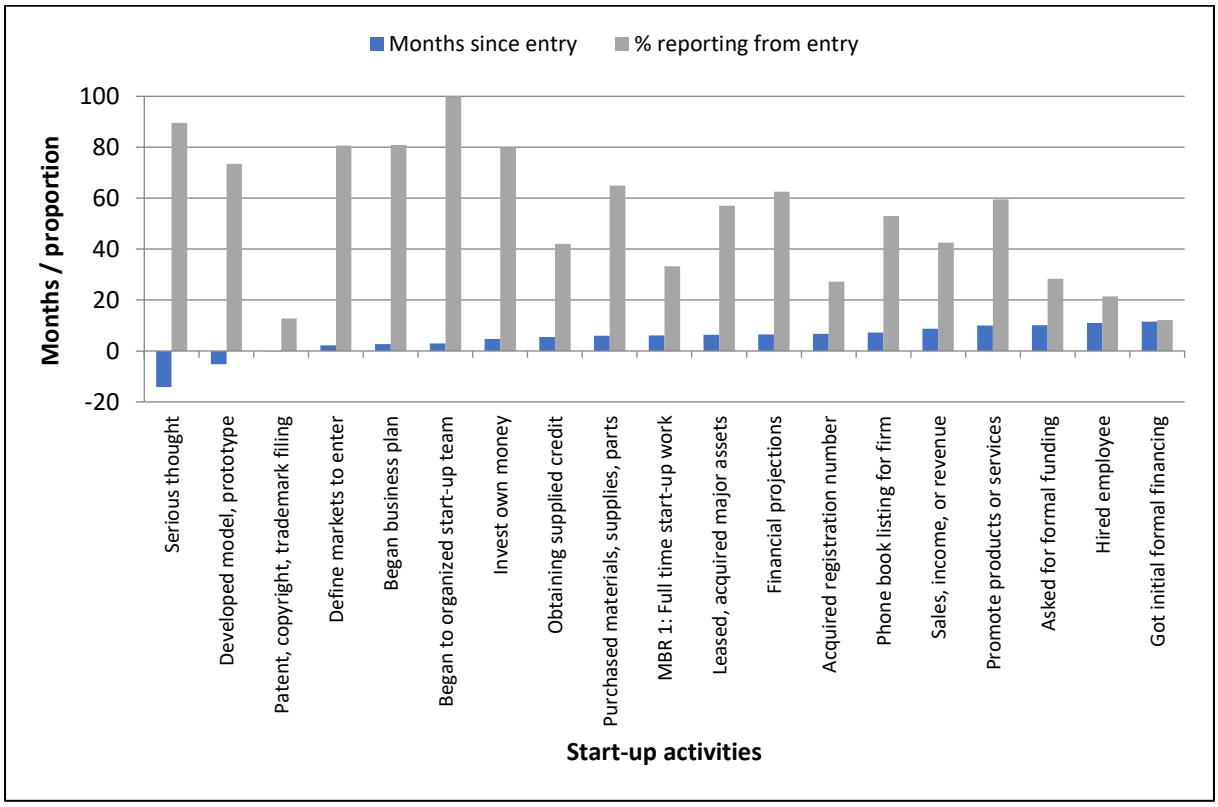
When analysing the number of months since conception, most disengaged ventures created by teams have done the activities faster than disengaged ventures created by individuals, including the decision of quitting the process. It can be highlighted that the percentage of ventures created by individuals which got initial formal financing is bigger that the percentage of ventures created by teams, but disengaged ventures created by teams received financing 3 months earlier than the ones created by individuals.

Figure 17: Order of start-up activities for disengaged ventures created by individuals [n=450 after 72 months].



Source: Own elaboration based on PSED harmonised data.

Figure 18: Order of start-up activities for disengaged ventures created by teams [n=430 after 72 months].



Source: Own elaboration based on PSED harmonised data.

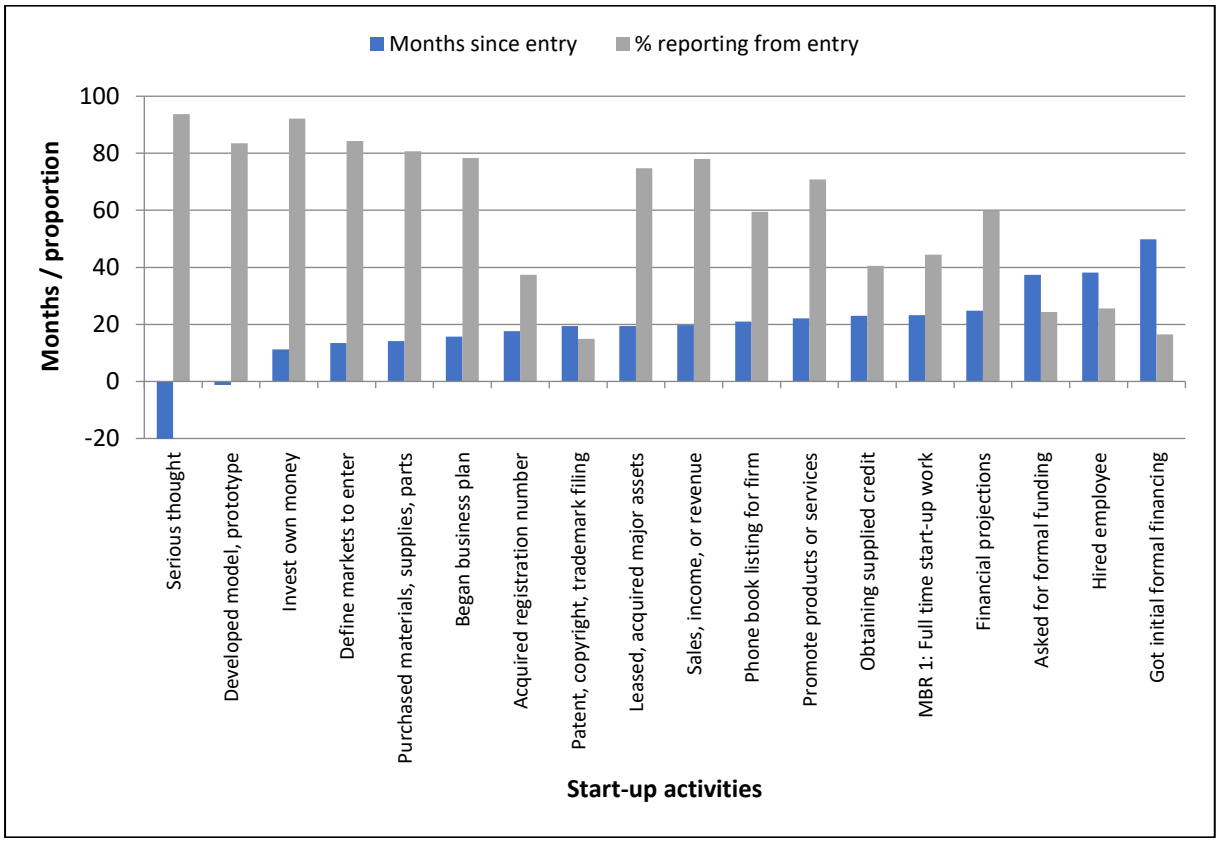
Results from the entrepreneurship process: Active start-up

When analysing the quantity of cases that remain nascent in the process as active start-ups at the end of the 72 months period, 254 were nascent ventures initiated by individuals and 216 were nascent ventures initiated by teams. Figure 19 and Figure 20 respectively gives information about the order of activities conducted by nascent ventures of individuals and teams that did not reach an endpoint in the process during the period of analysis.

Nascent ventures that organised teams at a later stage (one year after conception) remain as active start-ups, which can be observed in the dataset for firms that have not reached profits. For the rest of the active start-up, activities are similar between nascent ventures initiated by individuals and by teams.

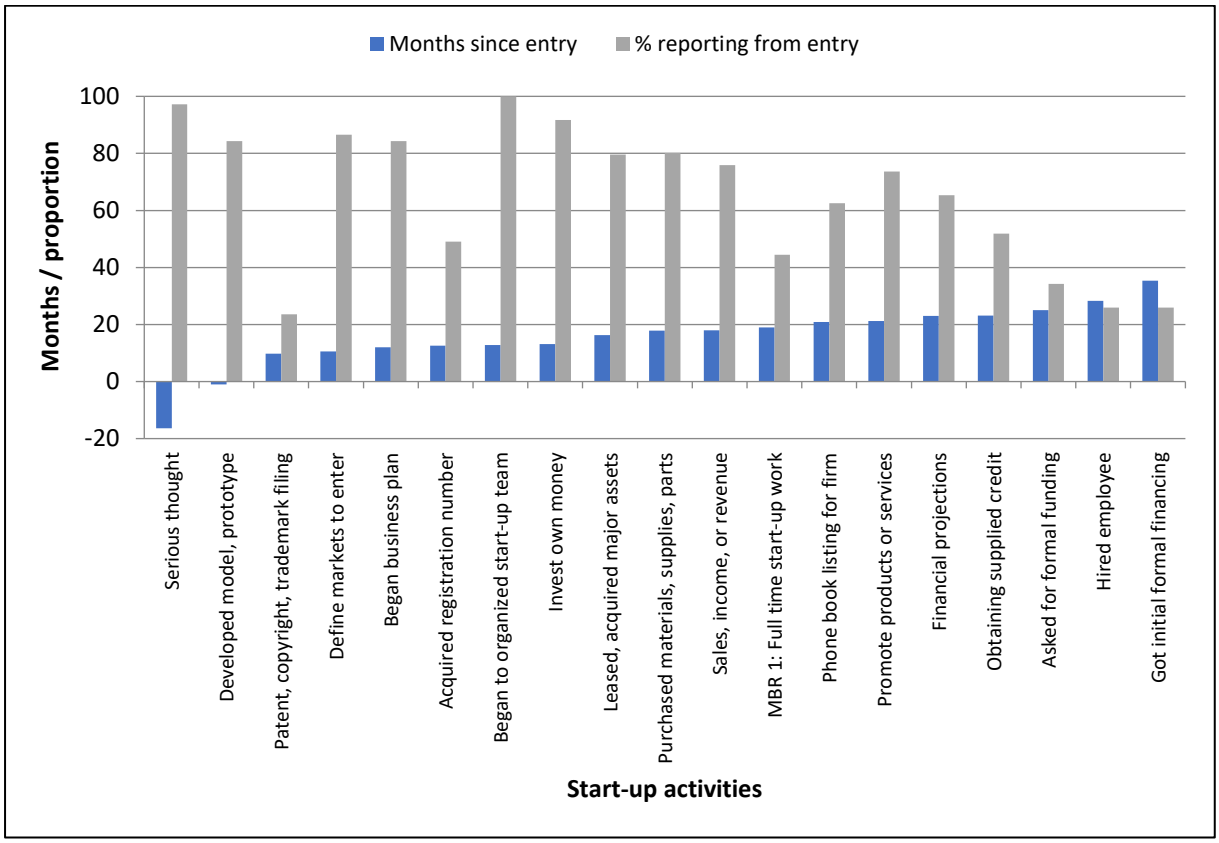
As a conclusion, and confirming the proposition 2.1B, nascent ventures initiated by teams perform activities in a different order than nascent ventures initiated by individual entrepreneurs.

Figure 19: Order of start-up activities for still nascent ventures initiated by individuals [n=254 after 72 months].



Source: Own elaboration based on PSED harmonised data.

Figure 20: Order of start-up activities for still nascent ventures initiated by teams [n=216 after 72 months].



Source: Own elaboration based on PSED harmonised data.

5.3.2 Timing of start-up activities and results from the entrepreneurship process

In the analysis performed earlier, the timing of start-up activities performed by teams and individuals was used to analyse the order of those activities. However, to test proposition 2.3A and 2.3B, the following analysis compares the timing in terms of speed of the start-up activities performed by each group and the time to reach results from the entrepreneurship process (i.e., reaching profits or disengaging from the process).

5.3.2.1 Timing of start-up activities

Table 12 and Table 13 give information on timing of start-up activities created by individuals and by teams for the total sample. When analysing timing of start-up activities, *serious thought*

is eliminated as explained above. For both individuals and teams, *developed model or prototype* is the earliest activity, although, ventures created by teams complete this activity faster, developing the model 4 months before conception as opposed to ventures created by individuals which spent 9 months before conception. In general, ventures created by teams perform all activities faster, confirming proposition 2.2A, where *got initial formal financing* can be highlighted with the implications discussed in the past sections. Literature have showed that firms created by entrepreneurial teams experience faster growth rates than those started by individual entrepreneurs (Harper, 2008).

Table 12: Timing of start-up activities for ventures created by individuals [n=1,262].

Earliest activities		
Order	*Start-up activities*	*Months*
1	Developed model, prototype	-9
2	Invest own money	4
3	Define markets to enter	4
4	Began business plan	5
5	Purchased materials, supplies, parts	8

Later activities		
Order	*Start-up activities*	*Months*
14	Financial projections	12
15	Promote products or services	13
16	Asked for formal funding	18
17	Hired employee	21
18	Got initial formal financing	25

Source: Own elaboration based on PSED harmonised data.

Table 13: Timing of start-up activities for ventures created by teams [n=1,257].

Earliest activities		
Order	*Start-up activities*	*Months*
1	Developed model, prototype	-4
2	Define markets to enter	4
3	Began business plan	5
4	Began to organised start-up team	5
5	Invest own money	6

Later activities		
Order	*Start-up activities*	*Months*
14	Sales, income, or revenue	12
15	Promote products or services	12
16	Asked for formal funding	14
17	Hired employee	17
18	Got initial formal financing	20

Source: Own elaboration based on PSED harmonised data.

Additionally, Table 14 shows the results of Student's t-test for the timing to perform the start-up activities. Almost all differences between the activities that perform a venture created by individual entrepreneurs and entrepreneurial teams are statistically significant.

Table 14: T-test for start-up activities timing.

Activity	t-test
Serious thought	-1.85***
Developed model, prototype	-2.52**
Began to organised start-up team	5.35***
Invest own money	-1.30†
Define markets to enter	0.06
Began business plan	-0.11†
Purchased materials, supplies, parts	-1.11†
Patent, copyright, trademark filing	-0.67
Leased, acquired major assets	1.07†
Sales, income, or revenue	-1.99***
Phone book listing for firm	-0.61
MBR 1: Full time start-up work	0.19
Acquired registration number	0.54
Obtaining supplied credit	0.36
Financial projections	1.56†
Promote products or services	-0.72
Asked for formal funding	1.89**
Hired employee	3.13***
Got initial formal financing	0.84

Source: Own elaboration based on PSED harmonised data.
Notes: Level of statistical significance: ***p ≤ 0.001, **p ≤ 0.01, *p ≤ 0.05, †p ≤ 0.10.

Additionally, Table 15 shows the results of Student's t-test by the timing to reach the results in the new venture creation process. Almost all differences are statistically significant.

Table 15: T-test by results timing.

Activity	t-test New firm	t-test Active	t-test Disengaged
Serious thought	-1.04	-0.85†	-0.29
Developed model, prototype	-2.29**	-0.73	-1.06†
Began to organised start-up team	3.48***	2.80***	2.38***
Invest own money	-0.82	-0.01	-1.63†
Define markets to enter	0.01	0.17	-0.42
Began business plan	0.95	-0.58	-0.81
Purchased materials, supplies, parts	-1.60†	-0.08	-0.63
Patent, copyright, trademark filing	-0.35†	-0.34	-0.11
Leased, acquired major assets	0.50	1.78**	-0.22
Sales, income, or revenue	-2.25**	-0.04	-1.49†
Phone book listing for firm	-0.20	-0.51	-0.75
MBR 1: Full time start-up work	-0.36	-0.17	-0.20
Acquired registration number	0.70	-0.32	2.45**
Obtaining supplied credit	0.84	-0.96†	1.09†
Financial projections	-0.87†	0.71	1.43†
Promote products or services	-0.23	-0.45	-1.24†
Asked for formal funding	1.63†	0.70	1.01†
Hired employee	2.14**	1.46†	1.56†
Got initial formal financing	-0.46	1.30†	1.32†

Source: Own elaboration based on PSED harmonised data.
Notes: Level of statistical significance: ***p ≤ 0.001, **p ≤ 0.01, *p ≤ 0.05, †p ≤ 0.10.

After this analysis, the following subsection compares the timing of the start-up activities performed by individual entrepreneurs and entrepreneurial teams, distinguishing cases according to the result from the entrepreneurship process.

5.3.2.2 Timing of start-up activities by individuals and teams by results at month 72

Results from the entrepreneurship process: new firms

When analysing the timing of start-up activities, *serious thought* is eliminated for all subsequent analysis. Table 16 and Table 17 provide information about timing of start-up activities for new firms created by individuals and by teams. When comparing early activities, it can be concluded that the activities are similar, however differences can be observed where new firms created by teams perform the activities faster than individuals. Similarly, when analysing subsequent activities, new firms created by teams perform those activities faster, notably highlighting that new firms created by teams become a source of employment sooner.

Table 16: Timing of start-up activities for new firms created by individuals [n=328 after 72 months].

Earliest activities		
Order	*Start-up activities*	*Months*
1	Developed model, prototype	-7
2	Define markets to enter	3
3	Began business plan	4
4	Invest own money	5
5	Purchased materials, supplies, parts	7

Later activities		
Order	*Start-up activities*	*Months*
14	Obtaining supplied credit	11
15	Promote products or services	12
16	Asked for formal funding	16
17	Hired employee	19
18	Got initial formal financing	21

Source: Own elaboration based on PSED harmonised data.

Table 17: Timing of start-up activities for new firms created by teams [n=379 after 72 months].

Earliest activities		
Order	*Start-up activities*	*Months*
1	Developed model, prototype	-2
2	Define markets to enter	4
3	Began business plan	4
4	Began to organised start-up team	6
5	Invest own money	6

Later activities		
Order	*Start-up activities*	*Months*
14	Sales, income, or revenue	11
15	Asked for formal funding	13
16	Patent, copyright, trademark filing	15
17	Hired employee	17
18	Got initial formal financing	18

Source: Own elaboration based on PSED harmonised data.

Results from the entrepreneurship process: disengaged

Table 18 and Table 19 illustrate the timing of start-up activities for disengaged ventures created by individuals and by teams in the 72-months period. When analysing earliest activities for disengaged ventures, it can be concluded that, in average, *patent, copyright, trademark filing* is the activity that was performed at month zero. Additionally, disengaged ventures created by teams are faster than their counterpart.

Table 18: Timing of start-up activities for disengaged ventures created by individuals [n=450 after 72 months].

Earliest activities		
Order	*Start-up activities*	*Months*
1	Developed model, prototype	-11
2	Patent, copyright, trademark filing	0
3	Define markets to enter	2
4	Began business plan	2
5	Invest own money	2

Later activities		
Order	*Start-up activities*	*Months*
14	Promote products or services	9
15	Asked for formal funding	11
16	Acquired registration number	12
17	Hired employee	14
18	Got initial formal financing	15

Source: Own elaboration based on PSED harmonised data.

Table 19: Timing of start-up activities for disengaged ventures created by teams [n=430 after 72 months].

Earliest activities		
Order	*Start-up activities*	*Months*
1	Developed model, prototype	-5
2	Patent, copyright, trademark filing	0
3	Define markets to enter	2
4	Began business plan	3
5	Began to organised start-up team	3

Later activities		
Order	*Start-up activities*	*Months*
14	Sales, income, or revenue	9
15	Promote products or services	10
16	Asked for formal funding	10
17	Hired employee	11
18	Got initial formal financing	12

Source: Own elaboration based on PSED harmonised data.

Results from the entrepreneurship process: active start-up

By distinguishing between individuals and teams, respectively, Table 20 and Table 21 give information on timing of start-up activities performed by those cases that remain nascent in the process (i.e., active start-ups). As a conclusion, still nascent ventures initiated by teams are faster than those initiated by individuals. Despite that both individuals and teams perform the activity *developed model, prototype* in the same average time (i.e., after 10 months), only nascent ventures initiated by teams could have *Patent, copyright, trademark filing*. This shows that, for ventures that remain as nascent after 72 months, those initiated by teams have better performance than those initiated by individuals.

Table 20: Timing of start-up activities created by individuals [n=379 after 72 months].

Earliest activities		
Order	*Start-up activities*	*Months*
1	Developed model, prototype	-1
2	Invest own money	11
3	Define markets to enter	13
4	Purchased materials, supplies, parts	14
5	Began business plan	16

Later activities		
Order	*Start-up activities*	*Months*
14	MBR 1: Full time start-up work	23
15	Financial projections	25
16	Asked for formal funding	37
17	Hired employee	38
18	Got initial formal financing	50

Source: Own elaboration based on PSED harmonised data.

Table 21: Timing of start-up activities created by teams [n=216 after 72 months].

Earliest activities		
Order	*Start-up activities*	*Months*
1	Developed model, prototype	-1
2	Patent, copyright, trademark filing	10
3	Define markets to enter	11
4	Began business plan	12
5	Acquired registration number	13

Later activities		
Order	*Start-up activities*	*Months*
14	Financial projections	23
15	Obtaining supplied credit	23
16	Asked for formal funding	25
17	Hired employee	28
18	Got initial formal financing	35

Source: Own elaboration based on PSED harmonised data.

5.3.2.3 Timing of results from new venture creation process

The analysis of new and disengaged ventures confirmed that most of the entrepreneurial initiatives that reach profitability faster are developed by entrepreneurial teams, confirming proposition 2.1B. This means that most ventures that are still emerging as nascent initiatives at the 72nd month are created by individuals. This result is coherent, since a team has the possibility to advance faster by having more people who collaborate in its operation. The entrepreneurship literature has showed that firms created by entrepreneurial teams are more likely to survive than those started by individual entrepreneurs (Harper, 2008).

As a general conclusion, ventures created by entrepreneurial teams perform more entrepreneurial activities, in a process that has a faster speed and a different order of activities compared to individuals. As a result, entrepreneurial teams reach profitability sooner than ventures created by individual entrepreneurs. Based on these results, propositions 2.1A and 2.1B can be confirmed, that is, ventures created by entrepreneurial teams perform more entrepreneurial activities and in a different order when compared to ventures created by individual entrepreneurs. Also, proposition 2.2 can be confirmed, that is, entrepreneurial teams create more ventures that reach profits when compared to individual entrepreneurs. Finally, the results confirm proposition 2.3A and 2.3B, that is, the speed in which new ventures perform entrepreneurial activities is faster for entrepreneurial teams' ventures than for individuals' and ventures created by entrepreneurial teams reach profits more rapidly than ventures created by individual entrepreneurs.

Chapter 6: Empirical study III: outcomes of new firms

The third empirical study covers the third part of the theoretical framework (section 2.3): the outcomes of new firms by distinguishing between individual entrepreneurs and entrepreneurial teams. The types of firms created by individuals with the ones created by teams are compared in terms of *innovation*, *internationalisation* and *employment generation*, and the *economic freedom*'s influence on them. The chapter starts with information of the database and variables in section 6.1. In addition, in section 6.2, descriptive statistics are presented, and in section 6.3 results of the study are stated.

6.1 Database and variables

Data at the individual and country levels was obtained at an individual level from the Adult Population Survey (APS) conducted by the Global Entrepreneurship Monitor (GEM) to test the hypotheses. GEM data is especially valuable for the analysis as it provides information regarding socio-economic characteristics of entrepreneurs, including many countries and a wide time horizon.

From the three types of entrepreneurs defined by the GEM project, this part of the dissertation relies on a **sample** of early-stage entrepreneurs including nascent entrepreneurs involved in starting a new business and owner-managers of a young firm (less than 3.5 years old). The sample includes 74 countries, with different economic freedom levels, and more than 71,000 observations, covering a five-year period (2014-2018).

At a country level, data from The Heritage Foundation is used. This foundation builds the Index of Economic Freedom, which takes a comprehensive view of economic freedom in 12 aspects, as it was explained before.

6.1.1 Dependent variables

There are three dependent variables:

a) *Innovation level:* this variable is created with the sum of the three items of innovation that measure this issue in GEM: novelty for consumers, level of competition, and novelty of technology. Higher values represent an innovative higher-level business.

b) *Internationalisation:* a binary variable is created and takes the value of one (1) if the firm exports, and zero (0) if the firm does not.

c) *Employment generation:* in GEM, it is a continuous variable that represents the number of jobs that firms expected to have in 5 years.

6.1.2 Independent variable

Team: the GEM project identifies entrepreneurs as those who actively participate in both ownership and management of the business (Reynolds et al., 2005). If an entrepreneur owns the whole business, he is considered as a solo entrepreneur. In contrast, if the entrepreneur partially owns the business, he is considered a member of a team. The dependent variable, *team,* is a dichotomous variable that takes the value of one (1) if entrepreneurs is member of a team, and zero (0) otherwise.

6.1.3 Moderating variable

Economic freedom: The Heritage Foundation creates an index with the information of the level of economic freedom in each county. It is an index that has a range from zero (0) to one hundred (100). Higher values of this variable mean that the country has better conditions in terms of

economic freedom, while lower values mean that the country has worse conditions. Every country has a corresponding number according of the level of economic freedom.

6.1.4 Control variables

Several control variables are included, at both the individual and country levels, to ensure that the results were not unjustifiably influenced by such factors. Each model is controlled for characteristics of the individual (*gender, age, educational level, entrepreneurial motivation, knowing an entrepreneur, having skills to be an entrepreneur and fear of fail*) and the *sector* where the entrepreneurs' ventures operate. Data for all individual-level control variables comes from the GEM project. In addition, the models include as controls some macro-variables (*GDP per capita and GDP growth*). Data for these country level variables was obtained from the World Bank's World Development Indicators database. Table 22 shows the description of the variables.

Table 22: Description of the variables of outcomes of new firms.

Variable	Description	Database
Dependent variables		
Innovation	Categorical variable that measures the level of innovation of the new business, using 3 items from the GEM survey: (1) will all, some or none of your potential customers consider this product or service as new and unknown; (2) are there many, few or no businesses offering the same products or services to your potential customers; and (3) how long have the technologies or procedures required to produce this product or service been available? A high value for the variable using these three items corresponds to more innovative businesses and a low value to businesses that imitate what is in the market.	GEM
Internationalisation	Dichotomous variable that takes the value of 1 if the company exports and 0 if it does not.	GEM
Employment generation	Continuous variable representing the number of jobs the company expects to generate in 5 years.	GEM
Independent variables		
Team	Dummy variable that equals 1 if nascent entrepreneurs decide to build an entrepreneurial team, or 0 otherwise.	GEM
Economic Freedom	Continuous variable measuring the degree of economic freedom in each country.	Heritage Foundation

Variable	Description	Database
Control variables		
Gender	Respondents were asked to provide their gender.	GEM
Age	Respondents were asked to provide their year of birth.	GEM
Education level	Categorical variable that corresponds to the response to the interviewees about their educational level according to 5 categories.	GEM
Motivation	Dummy variable that indicates whether nascent entrepreneur agreed with the statement: "You become involved in this firm to take advantage of a business opportunity".	GEM
Knowing entrepreneur	Dichotomous variable that corresponds to the response to the respondents if they know an entrepreneur.	GEM
Skills	Dichotomous variable that corresponds to the response to the interviewees on whether they believe they have the skills for entrepreneurship.	GEM
Fear of failure	Dichotomous variable that corresponds to the response to the interviewees on whether they think they would not undertake an entrepreneurial venture for fear of failure.	GEM
Sector	Respondents were asked to provide the sector where their project is developed.	GEM
GDP per capita	Continuous variable that corresponds to the Gross Domestic Product divided by the number of inhabitants of the corresponding country.	World Bank.
GDP growth	Annual gross domestic product growth.	World Bank

Source: Own elaboration based on GEM data.

6.2 Methodology

The empirical analysis is based on the above-mentioned sample (71,578 entrepreneurial projects from 74 countries that participated in the GEM project between 2014 and 2018). The GEM database's aim was to support public policy makers; the richness and variety of the data has meant that it has been used in numerous academic research (Aidis et al., 2008; Autio & Acs, 2010; Fuentelsaz et al., 2018b; Reynolds et al., 2005).

As said before, the objective in this chapter is to compare types of firms created by individuals with the ones created by teams, in terms of *innovation*, *internationalisation* and *employment generation* and the contingent role of economic freedom as a moderated variable. As there are two levels in the data (i.e., individual and country level), a multilevel technique was employed. Depending on the nature of the dependent variables (binary or continuous), the moderation

effect of *economic freedom* (index) is analysed according to the relationship between individual entrepreneurs or entrepreneurial teams and the types of firms created by them through a multi-level logistic or mixed regression analysis. These models are appropriate for fitting data collected at different levels, meaning that the dependent variable is a function of variables at more than one level (Luke, 2004 cited by Gonzalez-Pernia et al., 2015). The relationships can be modelled by the following system of equations:

$$Level\ 1: log\left[\frac{p_{ij}}{1-\ p_{ij}}\right] = \ \beta_{0j} + \ \beta_{1j}\mathrm{Z}_{ij}$$

$$Level\ 2: \beta_{0j} = \gamma_{00} + \ \ \gamma_{01}\mathrm{X}_j + \gamma_{02}W_j + u_{0j}$$

$$\beta_{1j} = \ \gamma_{10}$$

Where p_{ij} is the probability that individual i in country j generates a type of firm; β_{0j} is the intercept for country j; Z_{ij} is the vector of individual-specific control variables measured at level 1, and β_{1j} is their effect. Level 2 of the model indicates that the level 1 intercept, β_{0j}, is a function of level 2 predictors, where γ_{00} is the mean value of the level 1 dependent variable once controlled for the effect of variables at level 2; X_j is the vector of predictor variables measured at level 2 that correspond to country j and γ_{01} is the effect of these variables; W_j is the vector of additional control variables measured at level 2 and γ_{02} is the effect of these; and finally, u_{0j} is the random effect which captures the variability of the dependent variable across countries j. Level 2 also indicates that the effect of level 1 control variables, β_{1j}, is an aggregate constant measured by γ_{10}, which represents the mean effect of the level 1 variables across countries.

6.3 Descriptive statistics

Table 23 presents the descriptive statistics of the variables used in the empirical analysis. The table shows that 37% of the sample is composed of early-stage entrepreneurs engaged in a team, while the remaining 63% correspond to individual entrepreneurs. In addition, the average level of economic freedom is 64.93 (although it varies from 40.3 to 89.4). As for the dependent variables in the analysis, innovation is on a scale of 3 to 9 and has an average value of 4.7; while 35% of the sample are early-stage entrepreneurs who have export sales, and the average expected employment generation in five years is more than 4 jobs (although the variability is very high).

Table 23: Descriptive statistics of outcomes of new firms.

Variables	Obs.	Mean	Std. Dev.	Min.	Max.
Independent variables					
Team	71,578	0.37	0.48	0	1
Economic Freedom	71,578	64.93	9.61	40.3	89.4
Dependent variable					
Innovation	71,578	4.70	1.44	3	9
Internationalisation	71,578	0.35	0.48	0	1
Employment generation	71,578	4.13	8.86	0	99
Control variables					
Age	71,578	37.38	11.54	18	64
Gender	71,578	0.57	0.50	0	1
Education level	71,578	2.12	1.07	0	4
Opportunity	71,578	0.50	0.50	0	1
Knowing entrepreneur	71,578	0.66	0.48	0	1
Skills	71,578	0.84	0.37	0	1
Fear of failure	71,578	0.29	0.45	0	1
Sector:					
Extractive sector	71,578	0.06	0.23	0	1
Transforming sector	71,578	0.21	0.41	0	1
Business service	71,578	0.15	0.36	0	1
Consumer oriented	71,578	0.58	0.49	0	1
GDP per capita	71,578	18,479.00	19,033.24	879.72	118,823.60
GDP growth	71,578	2.84	2.11	-3.55	8.56

Source: Own elaboration based on GEM data.

On the other hand, Table 24 presents the correlations between all variables. The table can highlight that the team variable correlates positively with the *economic freedom* of the country at 8%, indicating that contexts with greater economic freedom have a substantially higher percentage of teams. It can also be seen how the entrepreneurial team variable correlates positively with the three dependent variables of the analysis: *innovation*, *internationalisation*, and *employment generation*.

Table 24: Correlations of outcomes of new firms.

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(1)	Team	1.00																	
(2)	Economic Freedom	0.08***	1.00																
(3)	Innovation	0.06***	0.10***	1.00															
(4)	Internationalisation	0.09***	0.21***	0.12***	1.00														
(5)	Employment generation	0.16***	0.10***	0.10***	0.13***	1.00													
(6)	Age	-0.07***	0.13***	-0.02***	0.01***	-0.02**	1.00												
(7)	Gender	0.06***	0.03***	0.01***	0.08***	0.11***	0.00	1.00											
(8)	Educational level	0.13***	0.25***	0.07***	0.18***	0.11***	-0.03***	0.06***	1.00										
(9)	Opportunity	0.05***	0.12***	0.06***	0.06***	0.08***	-0.05***	0.06***	0.13***	1.00									
(10)	Knowing entrepreneur	0.02***	0.03***	0.05***	0.06***	0.04***	-0.05***	0.05***	0.13***	0.06***	1.00								
(11)	Skills	-0.01***	0.02***	0.04***	0.04***	0.04***	0.03***	0.05***	0.06***	0.04***	0.15***	1.00							
(12)	Fear of failure	-0.01*	-0.05***	-0.02***	-0.01†	-0.05***	0.01†	-0.06***	-0.02**	-0.06***	-0.04***	-0.17***	1.00						
(13)	Extractive	0.01**	-0.04***	-0.04***	-0.02	-0.01	0.04***	0.05***	-0.08***	-0.03***	-0.03***	-0.02***	0.00***	1.00					
(14)	Transforming	0.00	0.01	-0.03***	0.00	0.06***	0.03***	0.12***	-0.05***	-0.01***	-0.01***	0.01***	-0.01***	-0.13***	1.00				
(15)	Business service	0.05***	0.16***	0.00***	0.09***	0.06***	0.03***	0.10***	0.23***	0.07***	0.06***	0.04***	-0.02***	-0.10***	-0.22***	1.00			
(16)	Consumer oriented	-0.05***	-0.10***	0.04***	-0.06***	-0.09***	-0.06***	-0.20***	-0.10***	-0.02***	-0.02***	-0.02***	0.03***	-0.29***	-0.61***	-0.50***	1.00		
(17)	GDP per capita	0.07***	0.56***	-0.01***	0.25***	0.05***	0.13***	0.06***	0.28***	0.07***	0.03***	0.01***	-0.02***	-0.05***	-0.01***	0.23***	-0.14***	1.00	
(18)	GDP growth	-0.02***	-0.03*	0.03***	-0.05***	0.02***	-0.03***	0.00	-0.02***	-0.02***	0.04***	-0.03***	0.03***	0.07***	0.00	-0.04***	0.00***	-0.10***	1.00

Source: Own elaboration based on GEM data.

Notes: Level of statistical significance: ***p ≤ 0.001, **p ≤ 0.01, *p ≤ 0.05, †p ≤ 0.10.

6.4 Results

The objective with this chapter of the dissertation is to analyse the type of firms that individual entrepreneurs and entrepreneurial teams create in terms of *innovation, internationalisation,* and *employment generation,* and how *economic freedom* influence those relationships. A multi-level regression analysis is used, differentiating the analysis among different kinds of dependent variables (mixed and logit). These models are appropriate for fitting data collected at different levels, in which the dependent variable is a function of variables at more than one level (Luke, 2004 cited by Gonzalez-Pernia et al., 2015). In this study, individuals (level 1) are nested within countries (level 2). Table 25 presents the results of the estimations. The dependent variables are *innovation* (model 1), *internationalisation* (model 2) and *employment generation* (model 3).

6.4.1 Effect of teams vs individuals on the outcomes of new firms

In relation to the control variables, some aspects can be mentioned. The *educational level* of the entrepreneurs is essential to explain the three dimensions, since entrepreneurial projects led by individuals with a higher level of education are more innovative, internationalise more and generate more employment. Finally, it should be noted that a greater perception of *opportunities* is linked to greater innovation, internationalisation, or job creation; *knowing other entrepreneurs* is related to greater innovation, internationalisation or job creation, and a lower *fear of failure* is related to greater innovation and job creation.

In relation to the central variable of the analysis, it is confirmed that new businesses created by entrepreneurial teams rather than solo entrepreneur are more likely to be *more innovative* (0.13), *export more* (1.29) and *create more jobs* (2.13). All coefficients have a positive sign and are statistically significant ($p < 0.001$). It is likely that entrepreneurial teams enjoy greater synergies

between entrepreneurial team members and that this leads them to pursue business models with higher added value, rather than businesses that simply serve as subsistence or self-employment. The results are in line with previous work in the literature, such as that of Delmar & Shane (2003), where the characteristics of team members are related to successful firms.

Regarding innovation, for Jin et al. (2017) teams possess different resources that can help with non-routine problems (such as those faced by start-ups) and achieve higher quality, greater creativity, and innovative outcomes. Overall, according to the theoretical literature there is a clear importance of teams for innovation (Bagheri et al., 2020; Lechler, 2001). For Coviello (2006) greater social capital includes better access to resources and international opportunities which increases the probability of growth (Casillas et al., 2009). Finally, for Hermans et al. (2015) entrepreneurial teams have larger social networks that allow them to meet valuable people and integrate them into companies. In contrast, other authors have shown that differences between team members (socio-demographic characteristics, skills, and experience) can have a negative influence on various growth variables such as innovation and internationalisation (Chen & Wang, 2008; Kor, 2006; Zhao & Di Benedetto, 2013).

6.4.2 Moderating effect of economic freedom

Economic freedom is included in all models together with an interaction term between this variable and the independent variable (i.e., team). In this way, the interaction term measures the extent to which economic freedom moderates the positive effect that being member of an entrepreneurial team rather than solo entrepreneur has on the dependent variables mentioned above. The way in which the direct effect of economic freedom influences the dimension of innovation, internationalisation, and employment generation is explained. As the economic freedom increases, new businesses created by entrepreneurial teams are more likely to generate

innovation (0.014), internationalise (1.039) and generate a greater number of jobs (0.350) in comparison with those created by individual entrepreneurs. However, the interaction term coefficients are positive and statistically significant for internationalisation and employment generation, but it is not statistically significant for innovation. Nonetheless, in the latter case the sign of the coefficient is positive as expected. These aggregate results present similar results as the previous section, supporting that *economic freedom* is a relevant dimension to explain the performance of entrepreneurial projects, especially for team-led initiatives, which unleash their full potential when institutional rules allow them to do so.

Table 25: Results of outcomes of new firms.

	Innovation	**Internationalisation**	**Employment generation**
Team	0.133***	1.292***	2.132***
	(0.011)	(0.024)	(0.068)
Direct effect			
Economic Freedom	0.028	1.471***	0.628***
	(0.024)	(0.064)	(0.133)
Interactions			
Team*Economic Freedom	0.014	1.040*	0.350***
	(0.009)	(0.018)	(0.059)
Control variables (Individual level)			
Age	-0.003***	0.996***	-0.011***
	(0.000)	(0.001)	(0.003)
Gender	-0.021*	1.254***	1.345***
	(0.010)	(0.023)	(0.066)
Educational level			
Primary	0.002	1.116*	0.215
	(0.021)	(0.048)	(0.136)
Secondary	0.034†	1.231***	0.464***
	(0.019)	(0.047)	(0.120)
Exp. Grad.	0.070***	1.332***	1.116***
	(0.020)	(0.052)	(0.125)
University	0.217***	1.520***	1.934***
	(0.027)	(0.076)	(0.175)
Opportunity	0.133***	1.156***	0.850***
	(0.010)	(0.021)	(0.065)
Knowing entrepreneur	0.062***	1.161***	0.418***
	(0.011)	(0.023)	(0.069)
Skills	0.087***	1.083**	0.574***
	(0.014)	(0.028)	(0.090)
Fear to failure	-0.047***	1.055**	-0.480***
	(0.011)	(0.022)	(0.072)
Extractive	-0.138***	0.816***	0.275†
	(0.023)	(0.034)	(0.146)

	Innovation	Internationalisation	Employment generation
Transforming	-0.079***	0.962†	1.143***
	(0.013)	(0.022)	(0.083)
Business services	-0.038*	1.050†	0.728***
	(0.015)	(0.028)	(0.097)
Control variables (country level)			
GDP per capita	0.000	1.000*	0.000*
	(0.000)	(0.000)	(0.000)
GDP growth	-0.022***	0.947***	0.049†
	(0.004)	(0.008)	(0.027)
Intercept	4.567***	0.383***	1.268***
	(0.076)	(0.055)	(0.336)
ICC	12%	22%	4%
Number of observations	71578	71578	71578
Number of countries	74	74	74

Source: Own elaboration based on GEM data.
Notes: Level of statistical significance: ***p ≤ 0.001, **p ≤ 0.01, *p ≤ 0.05, †p ≤ 0.10. Estimates are log ratios with standard deviations in parentheses.

To conclude, most of the hypotheses are confirmed. Projects created by entrepreneurial teams are more likely to be more innovative (hypothesis 3.1), export more (hypothesis 3.2) and create more jobs (hypothesis 3.3). Additionally, the results confirm that projects created by entrepreneurial teams are more likely internationalise (hypothesis 3.4B) and generate a greater number of jobs (hypothesis 3.4C) in high economic freedom contexts. The only hypothesis with no support was hypothesis 3.4A, which suggests that the higher likelihood of innovation shown by entrepreneurial teams is strengthened with higher levels of economic freedom at the country level.

Chapter 7: Conclusions

A common myth about entrepreneurs is the view of them as lone heroes. Nevertheless, a group of people almost always helps to develop an idea. Therefore, many companies are created by **entrepreneurial teams**. Entrepreneurial teams are defined as two or more individuals who pursue a new business idea and share ownership, each of whom plays a significant role in management and has a direct influence on the strategic choices of the firm at the time of its founding (Bolzani et al., 2019; Lazar et al., 2019). Firms created by entrepreneurial teams have a higher probability of surviving and experience faster growth than do ventures started by individual entrepreneurs (Harper, 2008). However, not all entrepreneurs form teams. This dissertation studies which individual characteristics of entrepreneurs increase the propensity of forming entrepreneurial teams as a crucial decision to develop new ventures and how the national culture (in particular, the level of individualism in society) influences such decisions.

Scholars are interested in new ventures not only because they are a critical source of employment generation, enhanced productivity, and innovation but also because new firm creation is an important career option for individuals. However, the emphasis on the creation of new ventures can be only partial, since long before their creation, a process occurs by which many ventures disappear. These processes have important differences based upon whether they are developed by individual entrepreneurs or entrepreneurial teams. Therefore, this dissertation compares the new venture creation process followed by individuals and teams.

In addition, not all new ventures contribute to the economy and society as they are supposed to since most people who start new businesses are not entrepreneurs of firms that grow and generate employment and wealth. Shane (2009) recommends that governments move away from subsidising the mere formation of new businesses and focus on identifying and encouraging entrepreneurial projects with growth potential. To identify the contribution of

entrepreneurship to society and national economies, this dissertation compares the outcomes of firms created by individual entrepreneurs and entrepreneurial teams in terms of innovation, internationalisation, and employment generation. The main findings, limitations and recommendations are presented in the next three subsections—7.1, 7.2 and 7.3—for the three parts of this dissertation: (1) the propensity of forming entrepreneurial teams, (2) the new venture creation process compared between entrepreneurial teams and individual entrepreneurs and (3) the influence of entrepreneurial teams on the outcomes of new firms.

7.1 Conclusions on the propensity of forming entrepreneurial teams

7.1.1 Main findings

One of the great myths of entrepreneurship is the notion of the entrepreneur as a lone hero (Cooney, 2005). Peterson (1988), among others, believes that this is a consequence of the fact that most of the related research has been carried out in the United States, which has a strong individualist culture. Although many new ventures are founded by teams, entrepreneurial teams started to attract scholarly attention only in the late 1970s, when scholars started challenging the myth of the lone entrepreneur. In recent decades, an emerging literature on entrepreneurial teams has addressed questions such as the why, how, when, and where of their formation. As (Lazar et al., 2019) explain, "entrepreneurial team formation research is a fertile ground that has met merely a fraction of its potential to advance important knowledge in the field". The *why* question, that is, why do certain individuals launch a new venture with partners, is addressed.

The main objective of this part of the dissertation is to deepen the understanding of how certain characteristics influence the likelihood of an individual pursuing a market opportunity as a

member of an entrepreneurial team (instead of doing it alone) and how the degree of individualism of society moderates such an influence. In general, the results indicated that individuals with a higher **educational level** and with **intrapreneurial experience** are more likely to create a **team**, but these findings are contingent upon the degree of **individualism** within a society. This cultural dimension helps to explain some of the contradictory results of the previous literature.

Opportunity discovery is not straightforward: It depends a good deal on the knowledge an individual possesses (Kato et al., 2015). Entrepreneurs' educational level plays an important role in this process. Entrepreneurs with higher levels of education have a more specific set of skills than do individuals without formal studies, so they need to find people who have abilities and competencies that complement their human capital (Hsu & Chen, 2021). Similarly, the educational process improves the individual's contact network (Kacperczyk, 2012; Wennberg et al., 2011), which improves the likelihood of finding the right associates to create a new venture. Indeed, the results show that a higher standard of **education** increases the entrepreneur's likelihood of creating a business as a member of a team. Another individual characteristic that strongly affects the creation of a team is intrapreneurial experience. People who possess this experience can identify the advantages and disadvantages of working as a part of a team, so they know better than others how to manage interactions among team members. Furthermore, intrapreneurial experience expands the contact network of individuals, facilitating the search for good partners in business creation. The results support this kind of reasoning, showing that entrepreneurs with **intrapreneurial experience** are more likely than those without to create a business as members of an entrepreneurial team.

The first contribution of this part of the dissertation is to provide a multilevel approach to the influence of individual characteristics on the decision to form an entrepreneurial team. The degree of individualism within a society is a particularly relevant dimension when analysing why some individuals create a new business with partners and others prefer to do it alone. The findings explain why individuals with higher levels of education make different decisions concerning the creation of an entrepreneurial team in different cultural contexts (De Clercq et al., 2013; Fuentelsaz et al., 2018a).

The second contribution is to highlight the role played by individual motivation in starting team ventures. The previous literature has shown how the motivations of individuals affect the profile of new ventures and their economic and social impact. The results show that **opportunity motivation** partially mediates the relationships between individual factors and the creation of an entrepreneurial team (even if this mediation is at quite a low level). Individuals with a high educational level and intrapreneurial experience are more likely than are other individuals to pursue a business opportunity, which positively predisposes them to create teams.

The third contribution is the measurement of empirical relations among individuals' attributes and their propensity to create an entrepreneurial team. The wide range of countries that was employed in the analysis (n=66) and the time horizon selected (4 years) allows the results to be generalised. The analysis is particularly valuable for policy makers, as it could inform them as to why some individuals have a greater propensity to pursue business opportunities through the creation of a team. Previous research has stressed that the social and economic contribution of teams is higher, so a sound public policy might involve the promotion of entrepreneurial projects with several partners instead of individual projects that add only a low value (Shane, 2009). Another strategy might be to identify individuals with high levels of educational and

intrapreneurial experience and to encourage them to become entrepreneurs. They would be more likely to create entrepreneurial teams than would other individuals because they know which additional resources, they need to implement their ideas, and they have better networks of potential partners. Furthermore, they are more opportunity driven than are other individuals, which positively affects the creation of entrepreneurial teams. Nevertheless, policy makers must consider that the cultural profile of their countries is an important influence. Even if previous research has shown that individualist countries are, on average, more entrepreneurial than collectivist countries, the study shows that in **individualist** countries, highly educated individuals may have less of a tendency to enter the entrepreneurial process accompanied by others.

7.1.2 Limitations

Finally, the research has some limitations, which may point to avenues for future research. First, the decision to start a new venture as a part of a team instead of doing it alone is a complex decision that can involve many different factors. We consider two important individual factors, educational level and intrapreneurial experience, and a moderating variable, the level of individualism within a country. However, a good way of expanding the framework might be to introduce another contextual factor that measures the formal institutional context such as the availability of financing. Individuals may prefer to create a venture alone because doing so do not require the monetary resources that other people can provide. Second, the GEM data are cross-sectional, so they do not allow the measurement of changes in the entrepreneurial team over time (Chandler et al., 2005). Indeed, the entrepreneurial process is long, so the team composition may change many times from the point at which the idea emerges to the point at which the business is profitable. Partners can be found in early or later stages of the process,

while others may leave as the business is being created. To study these aspects, the Panel Study of Entrepreneurial Dynamics (PSED) data may be useful.

Third, we performed a robustness check that studied the explanatory factors that influence the number of team members as a categorical rather than a binary variable. The latter analysis would allow future researchers to investigate the factors that inhibit entrepreneurial teams from increasing. Fourth, the study relies on Hofstede's cultural value dimension of individualism, which is the one most frequently used in the research. Even if some authors argue that cultural values should represent a stable trait, a growing number of studies have found that the concept of a *national culture* is rapidly changing. Future research needs to consider this factor. Fifth, the GEM data do not include important details regarding intrapreneurial experience, such as the levels occupied by intrapreneurs within the organisation or the type of managerial or entrepreneurial education that entrepreneurs have undergone. Future researchers might employ more accurate measures of intrapreneurial experience.

7.1.3 Recommendations

The analysis is particularly valuable for policy makers, as it could inform them as to why some individuals have a greater propensity to pursue business opportunities through the creation of a team. Previous research has stressed that the social and economic contribution of teams is higher, so a good public policy might involve the promotion of entrepreneurial projects with several partners instead of individual projects that add only a low value (Shane, 2009). Another strategy might be to identify individuals with high levels of educational and intrapreneurial experience and encourage them to become entrepreneurs. They would be more likely to create entrepreneurial teams because they know which additional resources, they need to implement their ideas, and they have better networks of potential partners. Furthermore, they are more

opportunity driven, which positively affects the creation of entrepreneurial teams. Nevertheless, policy makers must consider that the cultural profile of their countries have an important influence. Even if previous research has shown that individualist countries are, on average, more entrepreneurial than are collectivist countries, the study has indicated that, in individualist countries, highly educated individuals may have less tendency to enter the entrepreneurial process accompanied by others.

In addition, the analysis is valuable for entrepreneurs since they can benefit from the identification of characteristics that may promote the formation of entrepreneurial teams to find adequate partners that are more adequate for developing their ventures. Additionally, it depends on the national context in which they are developed. Entrepreneurs should seek programmes or support to foster an environment that enables team entrepreneurship. Finally, educational organisations can enhance their programmes of study to include an entrepreneurship education that can improve the formation of entrepreneurial teams.

7.2 Conclusions on the new venture creation process

7.2.1 Main findings

Scholars have focussed on new ventures, mainly because they are a crucial source of job creation, increased productivity, and innovation. Therefore, understanding the characteristics of the process that help new ventures' survival is an important point when searching for a real contribution from entrepreneurship to a society and a country's economy. Furthermore, **start-up activities** within the process, their sequencing, and **timing** have a significant influence on the ability of entrepreneurs to effectively create new firms. Another key factor in the analysis of the new venture creation process is the difference in which teams and individuals follow it.

The main objective of this part of the dissertation was to compare the new firm creation process followed by individuals with the ones created by teams. Even though the start and the development of a new venture creation is unique, nonlinear, and do not pursue a unique sequence into its activities, patterns can be established from its analysis. In general, the results indicate that ventures created by entrepreneurial teams perform **more** entrepreneurial activities, in a different **order** and **faster** when compared to individual entrepreneurs. Moreover, entrepreneurial teams create more ventures that reach profits and more rapidly than ventures created by individual entrepreneurs.

The first contribution of this part of the dissertation is to analyse the activities in which entrepreneurs engage, emphasising their order and timing, which determines how quickly the new firm is created. Speeding new firm creation is desirable because new firms are responsible for a significant growth in sector productivity and are clearly a major source of technical and market innovations (Reynolds, 2017). Moreover, the new firm creation process results in entrepreneurs with knowledge, as even those that fail create lessons to be learned by societies. The findings demonstrate that, in general, the new venture creation process performed by entrepreneurial teams is more efficient and effective than that performed by individual entrepreneurs.

The second contribution has been the identification of patterns in the new venture creation process by showing how the differences between the selection of activities, their order and timing influence the business results of entrepreneurial team ventures when compared to individual ones. The results indicate that ventures created by entrepreneurial teams can speed the new venture creation process, in which the teams perform more key activities, such as faster employment generation and profitability, making these ventures more valuable for society.

7.2.2 Limitations

Some limitations emerge from the research. First, the new venture creation process is strongly influenced by its context. However, the scope of the study does not include the context. Future research may include the country or regional context. Second, the process is interactive. Many of the activities and times depend on each other; however, although these factors are considered later in this dissertation, it is important to extend the study of these dependencies.

7.2.3 Recommendations

The analysis is especially important for entrepreneurs and policy makers. For entrepreneurs, and despite knowing that each firm has its own path, it is crucial to make decisions faster, for example, deciding to move from one activity to another during the process or deciding which activity to conduct initially. Additionally, entrepreneurs must be able to anticipate future conditions and, if they are thinking of abandoning the process, to make this decision as quickly as possible. In addition, we recommend building a team to develop the idea, to act faster and to have team members with different background levels and knowledge to enable swifter decision-making.

This research is important for policy makers to promote conditions that encourage team entrepreneurship. Policy makers could develop public policies to reinforce the incentives to generate ventures created by teams. Additionally, policy makers should ensure the development of training and education models that help entrepreneurs make better and faster decisions.

7.3 Conclusions on the outcomes of new firms

7.3.1 Main findings

The quality of the businesses that are created influences the impact of the entrepreneurial activity in a region. Empirical evidence supports that to maximise this impact, firms must innovate, compete in international markets, and generate employment. However, most entrepreneurs do not create firms that generate businesses with higher quality standards. Therefore, recognising which entrepreneurs make a real contribution to society and countries' economies is a key point. Scholars have studied entrepreneurial teams. In addition, the generation of those kinds of firms is influenced by the formal context, known as **economic freedom**.

The main objective of this part of the dissertation was to deepen the understanding of how individual entrepreneurs or entrepreneurial teams create different kinds of firms in terms of **innovation**, **internationalisation**, and **employment generation** and how **economic freedom** impacts their formation.

The degree of innovation was used to assess the performance of entrepreneurial projects, the level of internationalisation of a company, and the jobs it generates. These three dimensions help to identify which entrepreneurial projects have the greatest impact on society and, consequently, to channel the efforts of public authorities in that direction, as suggested by works such as Shane (2009) or Acs et al. (2016). In comparison with individual entrepreneurs, entrepreneurial teams create firms with characteristics that are more likely to ensure quality in the new businesses created.

The first contribution of this part of the dissertation is to provide a multilevel approach to the influence of entrepreneurial teams or individual entrepreneurs on the generation of different kinds of firms. The research starts from the concept of economic freedom, which approximates the autonomy by which entrepreneurs organise their activity, with a better system of protection for property rights and less interference from public authorities. The results show how contexts of greater economic freedom favour projects to be more innovative, to export more and to generate employment. However, the context moderates the influence of individual variables so when the context has a higher degree of economic freedom, the likelihood is higher that entrepreneurial teams will unleash their full potential, as they have fewer operational restrictions, which allows them to create businesses with greater added value and potential.

The second contribution has been the measurement of empirical relations between individual entrepreneurs and entrepreneurial teams and the different kinds of firms that both groups generate. Overall, the results show that entrepreneurial teams score better in the three dimensions studied, so entrepreneurial teams are more innovative, export more and tend to create more jobs than do individual entrepreneurs. These results are generalisable to entrepreneurial projects in very different contexts, both in terms of development level and sector.

7.3.2 Limitations

Finally, the research has some limitations. First, the GEM project conducts an annual survey of the population by country and year. In this way, the individuals surveyed each year are different, so the database does not allow the measurement of changes in the individuals over time. Additionally, currently, data for 2019 are available (for 2020, data are available only for Spain). However, in the 2019 draft, the measurements of several of the variables included in the

analysis changed because they were no longer comparable with previous years. For this reason, the study cannot be extended to a longer time horizon.

Second, the definition and measurement of innovation is extended within the existing literature because innovation covers an extremely broad range of activities that vary between individuals and firms. The measures that were used are partial indicators of the extent of innovation. Future research can use other forms to measure innovation.

Third, the economic freedom index is used in this chapter. However, the index is composed of different categories. Future research can deconstruct the index and use only the categories that are closely related to innovation, internationalisation, and employment generation.

7.3.3 Recommendations

This work has several implications for entrepreneurs and policy makers. For entrepreneurs, the results show that projects created by entrepreneurial teams have greater potential. Therefore, when a person is creating a business, they should analyse whether partners can enhance company development, either by complementing one's skills and abilities or by sharing risks. On the other hand, for public policy makers, the work provides evidence that entrepreneurial teams perform better than do projects led by a single person. In line with works such Shane (2009) or Acs et al. (2016), public policy makers should consider that entrepreneurial teams are more likely to create businesses with higher added value (although, of course, being a team does not mean that performance will always be better than that attained by individual ventures). Likewise, it is necessary to work in an institutional context of greater economic freedom, as this factor allows entrepreneurial projects to achieve better results and teams to conduct their businesses with less interference.

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