



Universitat Autònoma de Barcelona  
Department of Business  
Doctorate in Economics, Management and Organization

DOCTORAL DISSERTATION

**New Venture Growth Phases: the Joint Role of  
the Individual and the Environment**

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Supervised by: Martin Larraza Kintana & Ignacio Contín Pilart

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Barcelona, July 2015



*Entrepreneurship is an important means by which individuals  
can pursue their visions, dreams and desires*

John C. Dencker and Marc Gruber

## ACKNOWLEDGMENTS

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# CHAPTER I: GENERAL INTRODUCTION OF THE THESIS

## 1.1 THE DEFINITION AND CONTEXT OF ENTREPRENEURSHIP RESEARCH

One of the main reasons that make scholars to be motivated about entrepreneurship research is the economic benefit that may result from it (van Praag and Versloot, 2007). In other words, entrepreneurship has a direct impact on industrial dynamism, economic development and growth. Many disciplines have tackled entrepreneurship literature to understand different phenomenon among the last decades –economics, management and business administration, sociology, psychology, economic and cultural anthropology, business history, strategy, marketing, finance, and geography (Carlsson et al., 2013). So, the research context of entrepreneurship research is wide and multi-disciplinary.

Therefore, as pointed out by Carlsson et al. (2013) it is important to start defining the domain of entrepreneurship research: “Entrepreneurship refers primarily to an economic function that is carried out by individuals, entrepreneurs, acting independently or within organizations, to perceive and create new opportunities and to introduce their ideas into the market, under uncertainty, by making decisions about location, product design, resource use, institutions, and reward systems. The entrepreneurial activity and the entrepreneurial ventures are influenced by the socioeconomic environment and result ultimately in economic growth and human welfare” (Carlsson et al., 2013, pp. 914).

More specifically, we understand that entrepreneurship is an activity carried out by individuals, commonly referred as *entrepreneurs* (Carlsson et al., 2013), that involves the discovery, evaluation and exploitation of opportunities to introduce new goods and services, new ways of organizing, new markets, new processes, and new raw materials through organizing efforts that previously had not existed (Shane, 2003). Likewise, entrepreneurship does not require, but can include, the creation of new organization (Shane and Venkataraman, 2000). Hence, entrepreneurship can also occur within an existing organization and can be sold to other individuals or to existing organization.

Therefore, entrepreneurship main’s core activities and future challenges are concerned with “(1) why, when and how opportunities for the creation of goods and services in the future arise in an economy; (2) why, when, and how some are able to discover and exploit these opportunities, while others cannot or do not, and, finally, (3) what are the economic,

psychological, and social consequences of this pursuit of a future market not only for the pursuer, but also for the other stakeholders and for society as a whole” (Venkataraman 1997, pp. 120–121). Overall, main outcomes and contributions in entrepreneurship can be assessed at different levels of analysis such as individual, firm or macro level (Carlsson et al., 2013). Thus, we focus our entrepreneurship definition in the link between the individual and his/her environment and how these two dimensions are determining new venture growth phases.

## **1.2 PURPOSE AND RESEARCH GOALS**

Almost without exception, entrepreneurship has long been recognized for its important implications for industry dynamism and regional development (Schumpeter, 1942; Shepherd, 2015) attracting scholars’ interest from all over the world. In other words, the level of entrepreneurship differs among countries (Wennekers et al., 2005) suggesting that there are regional differences in start-up activities (Audretsch and Fritsch, 1994; Johnson and Parker, 1996; Armington and Acs, 2002; Fritsch and Falck, 2007; Bosma et al., 2008). This evidence increases the need to better understand the regional determinants of entrepreneurship (Stuetzer et al., 2014). In this line, much of that regional variance has to do, among others, with differences in demographics, culture and institutional characteristics (Blanchflower, 2000) raising the interest in the combined study of the entrepreneurs’ characteristics and the regional environment ones.

The present Ph.D. dissertation aims at contributing to the advancement of entrepreneurship as a field of research paying much attention to one of the main outcomes of the entrepreneurial process: venture growth. More specifically, we focus on the growth of new firms. New firm growth has been considered an indicator of the firm’s success (Fisher and Reuber, 2003) and has been linked to job creation and regional development (Storey, 1994; Acs and Armington, 2006). Accordingly, the determinants of venture growth have been the focus of much attention (Davidsson et al., 2006; Gilbert et al., 2006). However, there is a need to better understand the outcome of the interplay between environmental conditions and individual attributes (Shane, 2003; Shane and Venkataram, 2000; Capelleras et al., 2016; Grichnik et al., 2014). Hence, our main purpose is to further analyze the combined influence of environmental conditions, particularly the immediate context of the new firm, and characteristics of the entrepreneur on new firm growth.

The entrepreneur can be seen as a decision maker who performs a discovery function, being

alert to profit opportunities, such as a new product or a superior production process, and stepping in to fill this market gap before others (Kirzner, 1973) and invest resources based on their judgment of future market conditions (Knight, 1921; Mises, 1949). Similarly, the entrepreneur is someone who makes judgmental decisions about the coordination of scarce resources when dealing with decision-making under uncertainty and the ability to identify and exploit opportunities (Casson, 1982). Such investments may or may not yield positive returns. Furthermore, entrepreneurs live in a given location and in an environment that is partly region specific (Fritsch and Storey, 2014). Thus, the conditions of the immediate environment surrounding the entrepreneur, such as economic, demographic and physical features that constitute the regional context, are likely to shape the entrepreneurs' process of opportunity discovery and exploitation (Kibler et al, 2014). In this sense, researchers have shown that regional factors affect individual decisions in the entrepreneurial process (Mueller et al, 2008). For example, studies in the economic geography literature have found that factors such as population growth (Fritsch and Storey, 2014; Reynolds et al., 1994), regional share of labor force employed in small businesses (Fritsch, 1997) and unemployment rates (Bosma and Schutjens, 2011) relate to new firm formation rates. Regions differ in their availability of resources and opportunities (Stam et al., 2012), and individuals will encounter regional environments that are more or less benevolent and munificent when aiming to become an entrepreneur. Hence, depending on the environmental conditions, individuals may aspire to different degrees of growth for their new businesses. However, as noted, evidence on the regional influences on entrepreneurs' decisions and subsequent firm growth is still scarce.

### **1.3 DATABASES USED**

#### **1.3.1 Global Entrepreneurship Monitor (GEM)**

In chapter II and III individual data has been gathered from the Global Entrepreneurship Monitor (GEM) in order to study start-up size and entrepreneurial growth aspirations respectively. GEM research project is the largest database that systematically assesses the prevalence, determinants and outcomes of entrepreneurial activity. The beginning of GEM was back in 1998 with the aim to become the largest data set to study entrepreneurial dynamics across countries. One year after in 1999 researchers from Babson College (USA) and London Business School (UK) created officially the GEM research project (Reynolds et al., 2005) and presented it first Global Report (Amorós et al., 2013). The main objective of

the project is to shed some light on the entrepreneurial activity variations over time and trying to disentangle why some countries are more entrepreneurial than others. In other words, the project was designed long-term oriented with the idea to better fine-grained the link between entrepreneurship and economic growth (Reynolds et al., 1999) with the focus on those policies that foster entrepreneurship (Amorós et al., 2013; Álvarez et al., 2014). In this regard, GEM collects data from more than 50 countries around the globe. What makes GEM to be unique as a database in the entrepreneurship arena has to do with (1) the lack of others comparative data sets reporting individual data for such a considerable big and representative number of countries (Hundt and Sternberg, 2014), (2) the capture of all types of entrepreneurial activities beyond the national statistics, and, (3) the distinction between the different entrepreneurial phases at a very early stage (Bergmann et al., 2014).

GEM primary data collection pays attention at the international comparative phenomenon using standardized weights among countries. There are three main data sources: Adult Population Survey (APS), National Expert Survey (NES) and National Experts Interviews (qualitative face-to-face interviews). The data from GEM APS survey is usually gathered through telephone survey and/or face-to-face survey so that the information collected has to do with a representative population. APS is the more widely used in the literature (Bergmann et al., 2014). Thus, chapter I and II are empirically assessed on this source. In order to better understand where the data comes from, the questionnaire is explained below (Bergmann et al., 2014).

- *Section 1 (screening questions and perceptual variables)*: in this section questions are aimed at all respondents. Screening questions in this section are of much importance due to will determine the type of entrepreneur (nascent, owner-manager of an existing business, established or informal investor) the respondent will be.
- *Section 2 (nascent entrepreneurs)*: this is a section directed to those individuals who are planning to set up a business (between 0-3 months old involved in new venture creation). There are questions regarding the motivations and reasons to start-up as well as questions regarding the essence of the business.
- *Section 3 (owner or manager of an existing business)*: this section is either for those owners or managers of a young firm (between 3-42 months old involved in setting up a business) or owners or managers of established firms (more than 42 months old involved in the business). The main difference with the nascent is that in this case it is

referred to existing business.

- *Section 4 (informal investors or business angels)*: this section is focused on those people who work as informal investors and their roles with the person who receives such investment.
- *Section 5 (previous entrepreneurial activity)*: this section takes into account entrepreneurs' track records regarding if they gave up or quit a business in the last 12 months.

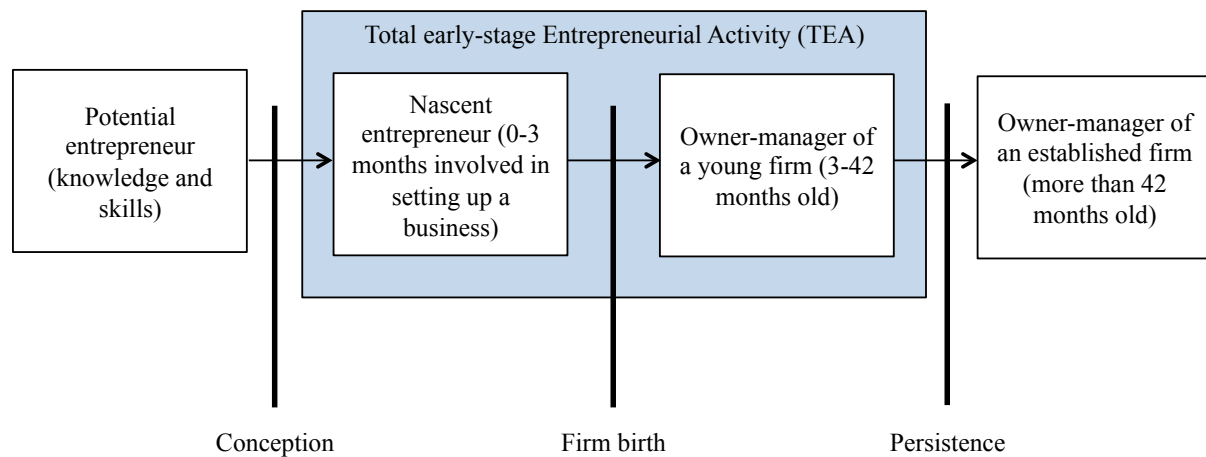
It is convenient to see new venture creation as a process (Lumpkin and Dess, 1996). Accordingly in figure 1.1 we can see an overview of this process where four phases are presented. By keeping with the main terminologies of GEM, the first phase has to do with the potential entrepreneurs, it means those individuals in the adult population contemplating on setting up a business. In that case their motivations to start-up can be either for opportunity or necessity. Then, just some of these individuals may decide to set up a business (Reynolds et al., 2005).

The second phase is related with the development of the operational business. This is referred to those individuals who are planning to be owners or managers of a business also defined as nascent entrepreneurs. In this sense, new ventures or more specifically, the birth event (Katz and Garner, 1988; Reynolds and Miller, 1992) is argued as a consequence of an intention, of having an idea, registration procedures, human resources characteristics, and perceives motivations before start-up moments (Reynolds et al., 2005).

Finally, those owners or managers in the third and fourth phase differ one from each other depending on the age of the firm of the entrepreneur. In the first case, owners or managers of young firms (also called "new") are distinguished from those of established ones because they have paid wages for more than 3 months and less than 42. Likewise, in the second case, those that have paid salaries and wages for more than 42 months are considered owner or managers of established firms. Overall, either owners or managers of young firms in nascent or new entrepreneurial stages are considered to belong to the total entrepreneurial activity (TEA) index. However, TEA is not capturing those owners or managers of established firms.

**Figure 1.1**

The entrepreneurial process and GEM operational definitions (Reynolds et al., 2005)



GEM project is not free of limitations when considering its data structure for research purposes. In this sense, scholars' main concerns pay attention at three most relevant categories. First, individuals are not the same among years, so longitudinal studies cannot be addressed. The nature of the data set is cross sectional data. However, the use of panel methodologies in some countries is justified considering that a retrospective approach is used in many studies (Hundt and Sternberg, 2014). Second, we should consider that the usage of dichotomous variables does not provide the best measurement to explain main outcomes, which has been criticized by some scholars (De Clerq and Arenius, 2006; Koellinger and Minniti, 2006; Koellinger, 2008). Nevertheless, this fact has been attributed to the necessity to keep the questionnaire short and avoiding answers biases that through translations from one country to another may arise (Bergmann et al., 2014). Finally, some other minors concerns have to be with the usage of GEM data for micro level analysis (Davidsson, 2006) and the potentially different interpretation of questions in different countries (Baumol et al. 2007; Godin et al., 2008).

One of main's GEM achievements has to do with the necessity to better understand the link between entrepreneurship and economic growth (Wennekers and Thurik, 1999). This means that contrary to what scholars have thought in the past about the categorical positive relationship between entrepreneurship and economic growth, today does not always mean a positive trend. In this sense, we can suggest that the total entrepreneurial activity in a country is closely related with the economy's stage cycle. In other words, entrepreneurship is today

not only driven by the emergence of opportunities but the necessity to be employed when non favorable economic environments in a country exist. So, studies tackling the issue of quantity versus quality entrepreneurship are still missing in the literature with important implications to come. Accordingly, GEM may help researchers and policymakers to better understand such an important phenomenon with the aim to generate policies that will lead to more appropriate levels of entrepreneurship in countries (Amorós et al., 2013).

### **1.3.2 National Statistics Institute (INE)**

Regional level variables in chapter II and III were collected mainly from the Spanish Statistics Institute (*Instituto Nacional de Estadística*, INE) at province level. The Spanish territory is divided into 52 provinces, which are the second-level territorial and administrative divisions and correspond to NUTS 3 according to EUROSTAT.

The INE is an official and autonomous organization in Spain responsible for the collection of statistics about demography, economy and society. Its main role is to report to the General State Administration the main statistical indicators.

### **1.3.3 Primary data collection in Navarra<sup>1</sup>**

In order to examine in chapter IV entrepreneurs' planning profiles and its impact on actual firm growth, a survey designed to provide information about new independent firms (i.e., de novo ventures) has been designed. The data is coming from the survey taken by founders of new microfirms (fewer than 10 employees at inception) in the manufacturing and service sectors in Navarra carried out in 2005. Navarra is one of the 52 provinces of Spain<sup>2</sup>.

Navarra's economic development level (gross domestic product level of industrialization and unemployment rates) is similar to the European Union average (Capelleras et al., 2011). In line with other countries and regions across the globe, most of the firms created in Navarra are considered microfirms (Sanz et al, 2009).

In figure 1.2 we can see the three main stages in which the data collection process was

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<sup>1</sup> This primary data collection process has been already used and published in the following paper: Capelleras, J.L., Contín-Pilart, I., and Larraza-Kintana, M. (2011). Publicly funded prestart support for new firms: who demands it and how it affects their employment growth. *Environment and Planning C: Government and Policy*, 29: 821-847.

<sup>2</sup> Spanish provinces are classified as NUTS-3 in Eurostat. The Nomenclature of Territorial Units for Statistics (NUTS, for the French nomenclature d'unités territoriales statistiques) is a geocode standard for referencing the administrative divisions of countries for statistical purposes within the European Union.



planned. First, an initial list of the population of new ventures founded in 2000 and 2001 and still in business in 2005 was gathered from official records of the Government of Navarra. There is not an official census to identify new firms created in Navarra, so we had to combine official records created for different purposes to generate a comprehensive data set of firms, which met the criterion mentioned above. With this aim, we combined the information contained in the Census of New Establishments (CNE) and the Register for Tax on Economic Activities (RTEA). The previous contains a list of all the establishments opened in Navarra in a given year. Firms have to specify whether the establishment is opened by an already existing firm or by a new one. Therefore, this group of firms comprises the population of establishments created in a given year.

The RTEA delivers a list of the firms that have paid the mandatory tax on economic activities in a given year. Firms are not considered active if they do not pay this tax, which is payable for each type of activity they accomplish. Hence, with the aim to identify new firms it was necessary to check if each firm was already performing another activity or contrary not. It means, whether the firm was already active in business.

Merging the two data sources, we could obtain an initial list of firms founded in Navarra in 2000 and 2001. Therefore, we were sure that all the new firms derived from the CNE were also present in the RTEA. Construction and transportation sectors were removed from this dissertation because some contractual agreements in those sectors might lead to entries in data sources that could be identified with not really new firms. Specifically, it is usual for construction firms to create a new firm to take part in a precise construction project. In the transportation sector self-employment is an alternative to the regular employment contract, being common in the case of self-employed workers who work entirely for a single firm. To better redefine our selected firms, we eliminated those that did not pay the tax on economic activities in 2005 or before. Because of the specific nature of this tax, only those firms that are or want to be active in business pay it. Thus, our first list included firms founded in Navarra in 2000 and 2001 that were still active in 2005.

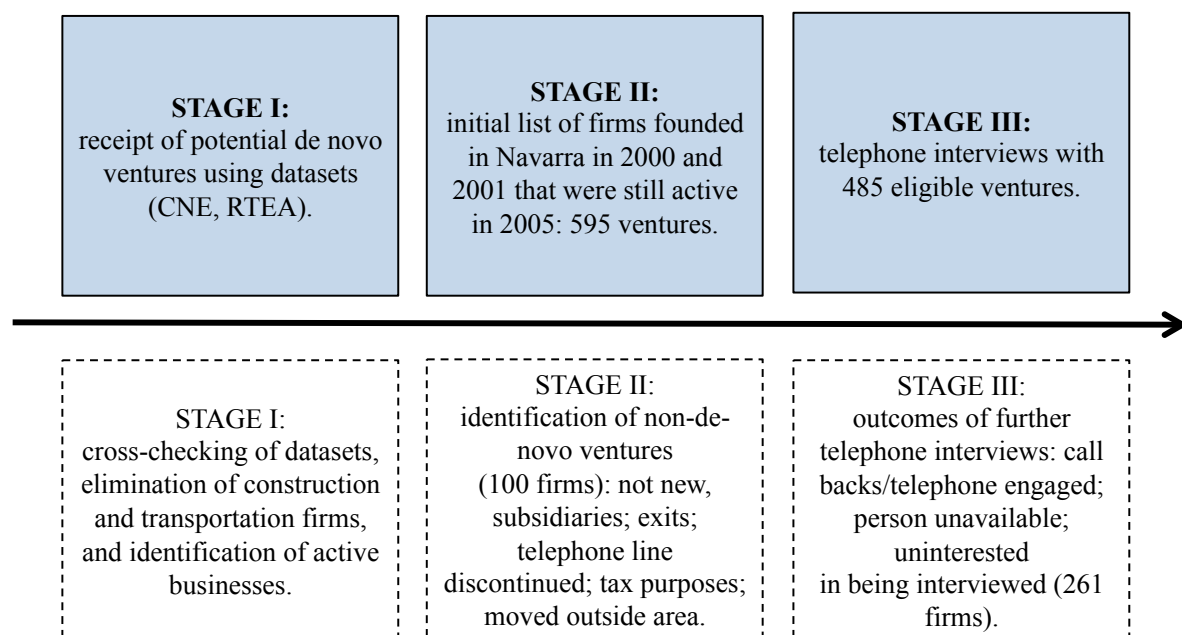
In the second stage of the data collection, telephone interviews were conducted with the firm founders. The interviews involved determining whether they really were new ventures started in 2000 and 2001, independent of outside control (not subsidiaries, franchises, or part of larger enterprises), not established for tax purposes, and still in operation. A total of 485

firms were identified and constituted our target population for the third and final stage of our data collection process.

In the third stage face-to-face interviews were settled with the firm founders. Respondents answered a structured interview questionnaire, administered at their normal place of work. A total of 224 entrepreneurs were successfully contacted and agreed to participate, representing a 46.2% response rate. This rate can be considered high for studies utilizing primary data collected through this method, and especially through upper-echelon organizational members (Cliff et al, 2006) and in the Spanish context too. The rate of firm creation in the agricultural sector is much smaller than in other sectors. Accordingly, because of the low number, we decided to remove those firms from our analyses, resulting in a sample of 224 entrepreneurs and their firms operating in the manufacturing and service sectors. Their exclusion does not affect our results and conclusions (Capelleras et al., 2011).

**Figure 1.2**

Stages of the data collection process (Capelleras et al., 2011)



## 1.4 STRUCTURE OF THE THESIS

Accordingly, as previously stated, the purpose of this dissertation is to better comprehend how the characteristics of the entrepreneur and the environment that surrounds her, interact to determine the growth of new firms at different stages. Specifically, we present three studies that look at this interplay in three different phases of firm growth: firm size at inception, entrepreneurs' aspirations to growth and actual firm growth.

Chapter II analyzes that the decision to become entrepreneur is not only driven by motivational factors but also by the social network structure around the individual. Accordingly, this chapter disentangles how the existence of social referents in the region affects the size of new firms. In this sense, we define a social referent as a person with outcomes and inputs similar to the person making the decision (Kulik & Ambrose, 1992) meaning that individuals who know other entrepreneurs are more likely to engage in entrepreneurial activities. However, Studies looking at the effect of such social referents' characteristics influencing on the start-up size are still lacking. In this chapter, we argue that the influence of existing entrepreneurs goes beyond the simple act of becoming an entrepreneur and also affects the type of businesses that the new entrepreneurs create. More specifically, we focus on the relationships that may exist between potential social referents and the size of the new firms. Also, this influence of potential social referents at the regional model is moderated by the existence of close social ones in the personal network of the entrepreneur. The potential social referents less influence those entrepreneurs who personally know another entrepreneur. This is because individuals' -in this case nascent entrepreneurs- will tend to identify more with the ones occupying similar positions in social networks that they themselves (Shah, 1998). We test our predictions in a database that combines the information on sample of Spanish nascent entrepreneurs obtained from the Global Entrepreneurship Monitor (GEM) project with region level information from the Spanish Statistics Institute (*Instituto Nacional de Estadística*, INE) over the period 2008-2010. We observe that while new ventures tend to be bigger in provinces where there are bigger firms, the number of established entrepreneurs (a proxy for entrepreneurs density) has not significant impact. Furthermore, we observe that knowing an entrepreneur reduces the impact of potential social referents on the size of new ventures. Overall, and in line with our expectations, the results indicate that the close environment of the entrepreneur has a greater effect versus the impact of the potential regional considerations.

Chapter III looks at how the entrepreneurs' human capital moderates the effect of the regional economic environment on entrepreneurial growth aspiration. Specifically, we build on different theoretical perspectives to investigate the unique and joint effects of population density and nascent entrepreneurs' human capital endowments (higher education, entrepreneurship training and owner-manager experience) on entrepreneurial growth aspirations. The study of entrepreneurs' growth aspirations is important because it has been proved that those aspirations are positively related with subsequent real firm growth (Autio and Acs, 2010; Estrin et al, 2013). We test a number of hypotheses using the same database employed in chapter II, that combines individual and province level information in Spain over the period 2008-2010. We argue that growth aspirations of nascent entrepreneurs are higher in more densely populated regions, but that such environmental influence is stronger for individuals with greater human capital. Central to our argument is the notion that higher human capital endowments help nascent entrepreneurs to acknowledge that greater new firm growth is required in denser regions to compensate for a higher risk of business failure. This is because they will be more aware that denser regions offer more favorable conditions for new businesses and also requires greater firm growth to compensate for a higher risk of business failure. Consistent with our view, we find that the growth aspirations of nascent entrepreneurs with higher education and with owner-manager experience are higher in densely populated provinces.

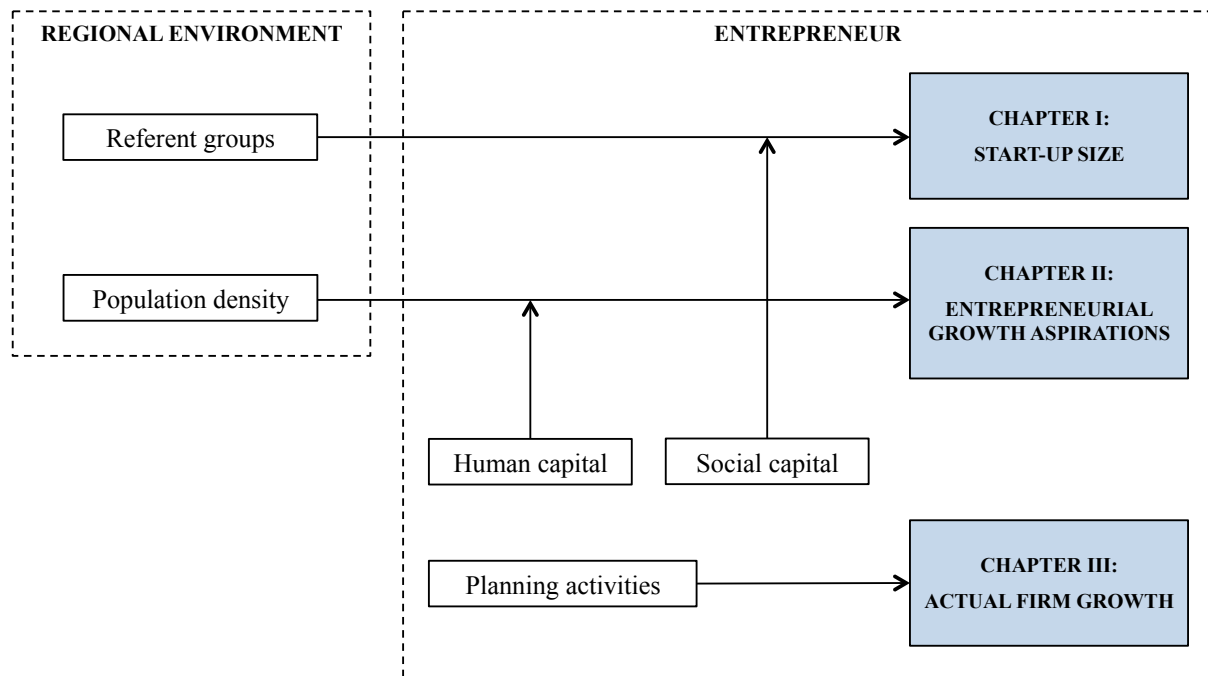
Finally, chapter IV focuses on institutional and economics arguments to examine the determinants of entrepreneurs' informal planning behavior influencing the growth of new ventures. Despite the attention paid by academics to the study of the determinants and growth consequences of entrepreneurs' planning behavior, the convenience of engaging in planning activities is still an open debate in the entrepreneurship literature. Planning may yield benefits for new ventures such as: awareness of the project, goals setting (Delmar and Shane, 2003; Chwolka and Raith, 2012) but may also bring negative aspects such as lack of flexibility. In this chapter, we attempt to contribute to clarify this debate and analyze how institutional and firm level economic factors determine entrepreneurs' planning behavior over time. We distinguish four different planning profiles (early planners, later planners, systematic planners and non-planners) and also analyze the implications of those profiles for new venture growth. To ran our analyses we use a proprietary database that comprises information on 212 new micro firms from a province of Spain (Navarra). The results confirm the relevance of

institutional forces in explaining the involvement of founders of new firms in informal planning activities. Our analyses suggest that Economic factors, in the form of business difficulties, seem to explain only the late planner behavior. We also analyze the impact of the different informal planning profiles on new firms' employment growth. Taken together, our results indicate that planning, which may be a mean to gain not only legitimacy but also to face business difficulties, increases new firm growth. Implications suggest that informal or basic planning activities yield benefits for the firm that go beyond legitimation. Also, they can be a really useful tool for management and not simple external requirement.

Figure 1.3 graphically summarizes the content of the present Ph.D. dissertation. It shows the entrepreneur inserted in a given environment. The characteristics of the entrepreneur (e.g. her human or social capital) interact with the features of the environment (e.g. existence of role models or population density) to determine firm size or growth aspirations. The planning activities that an entrepreneur conducts in a given environment also have an effect on firm growth.

**Figure 1.3**

General conceptual model of the dissertation



## **CHAPTER II: THE INFLUENCE OF ENTREPRENEURS' SOCIAL REFERENTS ON START-UP SIZE**

### **2.1 INTRODUCTION**

Over the last few years, scholars have not paid much attention to the study of factors determining the start-up size (Colombo et al., 2004) despite the influence on the subsequent growth of new ventures (Capelleras et al., 2008). We have observed prior research mainly focused on the determinants of new firm formation rates (Bergmann and Sternberg, 2007; Sternberg, 2009; Bosma et al., 2012). In the past, start-up size drivers have been justified both from an economics perspective looking at measures such as financial capital and markets' structures (Mata, 1996; Colombo and Grilli, 2005), and from an entrepreneurial and managerial approach considering endowments such as founders' human capital and gender roles (Verheul and Thurik, 2001; Colombo et al., 2004). However, within organizational research, no study has previously tackled this issue from a comparison theory perspective. More specifically, we aim with this chapter to study the entrepreneurs' social referent characteristics determining new venture's start-up size. Therefore, we understand that a social referent is a person with outcomes and inputs similar to the person making the decision (Kulik and Ambrose, 1992).

Social comparison is the process of thinking about information concerning one or more persons in relation to one self (Wood, 1996). In the context of this chapter, this would suggest that the decision to become entrepreneur is not only driven by motivational factors but also by the social network structure around the founder. Likewise, management literature using a wide variety of social capital theory perspectives has paid attention to several outcomes such as leadership (Pastor et al., 2002), mobility (Seibert et al., 2001), employment (Fernandez et al., 2000), individual performance (Mehra et al., 2001; Sparrowe et al., 2001), individual creativity (Perry-Smith and Shalley, 2003), team performance (Hansen, 1999; Tsai, 2001), occupational choice (Krumboltz et al., 1976) and entrepreneurship (Baron and Markman, 2003; Renzulli et al., 2000; Shane and Stuart, 2002; Bosma et al., 2012; Lindquist et al., 2015). However, theories on referent selection (e.g. social comparison theory) have not been used widely in the entrepreneurship literature despite organizational scholars have recently increased their attention in how individuals identify themselves with social referents (Sluss and Ashforth, 2008). Particularly, the study of social referents' characteristics have not been

considered to explain the start-up size of new ventures even it has been demonstrated to have an effect on some organizational variables such as firm's performance (Oldham et al., 1986). Thus, in this chapter we argue that the social influence of others entrepreneurs in the environment may also affects to the characteristics of new businesses created. More specifically, we focus on the relationships that could exist between social referents and the size of the new firms. We consider two levels of analysis. First, the main effect of potential social referents -number of entrepreneurs and size of established entrepreneurs- and second, the moderating effect of a close social referent -if the nascent entrepreneur knows personally someone who started a new business in the last two years- on start-up size.

Recent publications emphasize the importance and the need to keep looking at the interaction effects between the individual and the environment (Autio and Acs, 2010; Shaver, 2012; Stuetzer et al., 2014; Contín-Pilart and Larraza-Kintana, 2015). We build up in this direction considering the main effects of regional-level variables (i.e. number of entrepreneurs and size of established entrepreneurs -potential social referents-) on the start-up size of nascent entrepreneurs' new ventures, and the individual-level variable (i.e. if the nascent entrepreneur personally knows an entrepreneur who started up in the last two years -close social referent-) as a moderator endowment in the relationship between the size of established entrepreneurs and the start-up size.

This chapter is encouraged by the increasing amount of literature looking at the effect of several social network perspectives determining new firm formation rates (Wagner and Sternberg, 2004; Sternberg, 2009) and nascent entrepreneurship (Bosma et al., 2012; Contín-Pilart and Larraza-Kintana, 2015), while there is scarce attention to the start-up size determinants (Colombo et al. 2004). We want to fill this gap by disentangling the novelty impact of different types of social referents -at the regional and the individual level- when predicting the start-up size of new ventures. Our argument is that not all social referents share the same characteristics making them to influence homogenously nascent entrepreneurs. Therefore, due to the influence of potential social referents, new firms will be larger in those regions with already large established firms. However, the referent choice selection framework suggests that individuals tend to identify and select similar others as a referents (Kulik and Ambrose, 1992). This would suggest that the influence of potential social referents would be weaker when the entrepreneur personally knows his or her counterpart. In other words, when the entrepreneur has the influence of a close social referent.

To test our hypotheses we employ a sample of 779 of nascent entrepreneurs in Spain. We concur with the definition provided by the Global Entrepreneurship Monitor (GEM) project and define a nascent as an individual who is active in the process of starting a new firm (less than 3 months old) but have not yet launched it. Our choice of nascent entrepreneurs is based on our interest in exploring the determinants of start-up size in new ventures when those intentions are emerging (Douglas, 2013). Specifically, our data set combines individual-level information obtained from the GEM project in Spain with province-level information gathered from the Spanish Statistics Institute for the years 2008-2010. Multilevel analysis is employed to test the hypotheses. The results confirm that start-up size of nascent entrepreneurs' new ventures is higher when the size of the established firms in the province is greater. They also indicate that this influence weakens when there are entrepreneurs in the close network of the entrepreneur.

The remainder of this chapter is organized as follows. First, we develop and justify four testable hypotheses. Second, we describe the data, variables and methods. Third, we present the results of our empirical analysis. To conclude, we discuss the implications of the findings.

## **2.2 THEORY AND HYPOTHESES DEVELOPMENT**

Within an organizational research context, social comparison theories have highlighted the importance of referents when helping individuals to evaluate their acts (Shah, 1998). In this sense, personal factors will influence both availability of information (i.e. close social referent) and their perceived relevance (i.e. potential social referents) (Kulik and Ambrose, 1992). Likewise, environmental characteristics may have a particular effect on referent choice selection, which in turn, will be also influenced by situational factors from both perspectives: availability of information and referent relevance (Kulik and Ambrose, 1992). Thus, we focus our chapter on the organizational network research framework. Particularly, on the social referent choice perspective (Shah, 1998) to assess the main effect of potential social referents on the start-up size of nascent entrepreneurs' new ventures, and to see how such influence is moderated by a close social referent. The analysis is developed at two levels: the environment and the individual. First, we look at the main effect of the number of entrepreneurs in the province on start-up size. Second, we assess the main effect of the size of established entrepreneurs on start-up size. Finally, we evaluate the moderating influence of a



close social referent in the relationship between potential social referents and the start-up size.

### **2.2.1 Number of entrepreneurs and start-up size**

Economic- and social-regional factors influence individuals' decisions in the process to start-up (Muller et al., 2008, Sternberg and Wennekers, 2005, Shane, 2003, Gnyawali and Fogel, 1994). Regarding the social-regional factors, the literature of entrepreneurial action suggests that the presence of networks can also stimulate the creation of new firms (Bergmann and Sternberg 2007; Sternberg, 2009; Contín-Pilart and Larraza-Kintana, 2015).

The degree and intensity of the entrepreneurial activity in a certain area may be related with the conditions of the environment, which in turn this effect could influence the direct access to resources generating networks and sharing social capital (Bosma et al., 2012). Hence, new firm formation rates under those conditions are more likely to be influenced by the environment that surrounds the entrepreneur. In this vein, it has been argued that the stock of past and present entrepreneurs in the region (Contín-Pilart and Larraza-Kintana, 2015), explains such new ventures rates. However, as we have already noted in the introduction of this chapter, previous studies have not addressed how the characteristics of those potential social referents, and more precisely the size of their ventures, impact on the characteristics (e.g. size) of new start-ups. The study of the determinants of start-up size is relevant at the light of the evidence that suggests that the origin of a significant proportion of the employment generation comes from the newly founded firms (Dencker et al., 2009). Furthermore, there seems to be a positive relationship between the start-up size with the survival of the firm (Colombo et al., 2004), the consequent firm's growth (Capelleras et al., 2008) and therefore the potential employment creation. However, it remains unclear whether the number of entrepreneurs in a region, all else equal, would affect start-up size or just new firm formation rates. Our goal in this section is to shed some light on this issue.

As indicated in the heading of the subsection we start by paying attention to the number of entrepreneurs in the region, and its potential impact on start-up size. While many studies have found that the number of past and present entrepreneurs in the region have an effect on new firm formation rates (Contín-Pilart and Larraza-Kintana, 2015), we suggest that this fact should be treated in a different way when referring to start-up size and, therefore, it would have no effect on the size of the new ventures. Back to the definition, a social referent is

someone with outcomes and inputs similar to the person making the comparison (Kulik and Ambrose, 1992). So, at the time the stock of entrepreneurs in a region increases, they become more visible as a group and consequently are more likely to serve as a potential social referent for other inhabitants in the region. Overall, it could be seen that launching a business might be an attractive employment option. In keeping with previous idea, the number of firms in a region could be related by the new firm formation rates. However, as we explain in the next subsection, the question here is whether characteristics of the firms run by such potential social referents, and more specifically their size, will influence the size of the new enterprises, and not the existence of more or less (i.e. the number) potential referents.

Adams (1965) suggested that under inequity situations the state of tension among agents increases. In such a case, individuals tend to reduce that condition by selecting a referent (Kulik and Ambrose, 1992) with whom they share similar expertise and outcomes that will tend to mirror the behaviors and decisions of the later. That is why we expect there will exist some relationship between the characteristics of the firms created by the established entrepreneurs and the new ones. Nevertheless, the fact that there are more entrepreneurs in a region does not guarantee that firms created by new entrepreneurs are going to be bigger. Then, we suggest that the number of potential social referents in the region would not have an influence on the nascent entrepreneurs' start-up size.

We acknowledge that most new firms are small. The GEM project highlights that most individuals becoming entrepreneurs in Spain are motivated to do so to the fact of becoming self-employed (Hernández-Mogollón, 2014). In line with this idea, the probability that this type of entrepreneurs have employees at inception is very low or even remote (European Commission, 2014) even being abundant in the region. In this vein, it could be argued that regions with more firms would be regions in which the average firm size is small. However, it may not be necessarily true since failure rates are also higher for small firms (Löof and Nabavi, 2015). Hence, it is not clear that we can establish a relationship between the number of firms and the size of those initiatives.

In sum, we do not expect that the number of entrepreneurs in the region will have an impact on start-up size of new ventures. Thus, we posit the following hypothesis:

*Hypothesis 1: The number of entrepreneurs in the region has no effect on the size of the new ventures.*

### **2.2.2 Size of established entrepreneurs and start-up size**

Although the environment plays a key role in the entrepreneurial process, not all entrepreneurs act in the same way and perceive the location characteristics homogeneously. In order to deal with the homogeneity assumption, we suggest a more fine-grained analysis looking at such potential social referents' characteristics. Specifically, we look at the size of established entrepreneurs and the impact on the start-up size of nascent entrepreneurs' new ventures. Considering that a referent is defined as those "right" individuals with whom the one making the comparison would look like to be after comparing him or herself in terms of similar outcomes and inputs (Kulik and Ambrose, 1992), the choice of such referent has to do with the availability of information and the relevance or attractiveness of such potential referent for the comparison (Goodman, 1974).

Additionally, cognitive mechanism and mental frameworks (Mitchell et al., 2000) are related with the theory of referent selection. Since individuals tend to compare themselves with others they consider their potential referent for their future decisions and actions. Classic literature about referent choice suggests that individuals tend to select referents that are similar to them (Adams, 1963). This is because similarities make the comparison more relevant (Kulik and Ambrose, 1992), which would lead us to suggest that characteristics of such potential social referents would have an effect on nascent entrepreneurs' actions. Eventually this would have an effect on start-up size of new ventures. Due to motivations and points of reference are close to influence entrepreneurs' future decisions, one idea emanating from this research is that having a referent goes beyond the simple act of becoming an entrepreneur and extends to other areas. Research in comparison theories has discussed the relevance effect on other organizational variables such as turnover (Dittrich and Carrell, 1979) and performance (Oldham et al., 1986). In this vein, we extend this idea to the discussion of the determinants of start-up size. We argue that nascent entrepreneurs, who are also in a very early-stage of their entrepreneurial process, will be likely to pay attention at their potential social referents' characteristics, in our case the size, and that it would have an influence on the size of their start-ups.

Start-up size in the literature has been related with the survival likelihood of new ventures. It means that the larger the start-up size is, the higher the probability to new ventures' survival (Colombo et al., 2004). In this sense, entrepreneurs' characteristics are likely to determine

start-up size. Some studies have found that human capital endowments such as professional knowledge as well as managerial and entrepreneurial experiences impact positively to start-up size (Colombo et al., 2004) while others have revealed that a more specific human capital dimension such as leadership experience positively influences job creation (Dencker et al., 2009). Both contributions support the notion that the characteristics of individuals influence the initial size of the new venture. Based on referent choice literature, we add that the size of a new venture is going to be also influenced by the size of the enterprises run by the potential social referents in the region. Specifically, it will be a function of the size of the firms created by the established entrepreneurs in the province. The literature has proved that the stock of entrepreneurs in a region affects the entrepreneurial behavior of the inhabitants in the region (Bosma et al., 2012). Hence, the choice of potential social referents is determined by social network in which the entrepreneur is embedded (Krackhardt and Brass, 1994). In this case, based on the size of established entrepreneurs in the region. So, we expect that nascent entrepreneurs will create bigger new ventures if the size of the businesses run by established entrepreneurs in the environment around them is bigger. Therefore, we formulate the following hypothesis:

*Hypothesis 2: The size of established entrepreneurs in the region is positively related with the start-up size of the new ventures.*

### **2.2.3 The moderating effect of knowing an entrepreneur**

Some entrepreneurial scholars have argued that the effect of social referents may vary depending on the proximity of the person or people taken as referent. Accordingly, to understand the effect of social influence two main mechanisms have emerged: cohesion and structural equivalent (Shah, 1998; Ho, 2005). In the first case, the cohesion research states that individuals are influenced by direct ties with who they share more interpersonal connections (Shah, 1998). In other words, people usually tend to identify themselves with others sharing beliefs, values and attitudes (Byrne, 1971) such as parents or relatives (Bosma et al., 2012; Lindquist et al., 2015) and peers or colleagues (Nanda and Sørensen, 2010). In the second case, structural equivalent research states that people are influenced by others occupying similar positions in their networks that they themselves (Shah, 1998).

Because of their proximity to the focal individual, close social referents' impact is expected to be higher. In other words, when a person, in our case the nascent entrepreneur, is exposed

to the influence of different referents, she will be primarily influenced by those referents that belong to her close personal network. It means those from who she has availability of information (Kulik and Ambrose, 1992). In this chapter we refer to those close referents as close social referent, and define them, following the GEM project, as the person who is known personally by the nascent entrepreneur and who has started up a new business in the last two years.

Referents could be chosen as a function of several dimensions (e.g. friends, work peers and others) (Ho and Levesque, 2005) when entrepreneurs compare with them. At the regional level we now argue that the influence of these potential social referents is weaker when the entrepreneur has a close social referent. All in all, the close social network (i.e. mechanism behind cohesion) of the entrepreneur moderates the impact that the stock of entrepreneurs in the environment (i.e. mechanism behind structural equivalence) may have on the entrepreneurial behavior of a given individual. If nascent entrepreneurs just receive signals from the regional environment -and in this case its characteristics in terms of size-, the influence to the start-up size will be direct and positive as discussed in the previous section. However, if the nascent entrepreneur has personal contact with a close individual that have started up in the last two years, we would expect that the effect of such potential social referents to be lower. Because individuals tend to select referents similar to them in personal attributes (Adams, 1963; Ho and Levesque, 2005), the nascent entrepreneur would identify more herself with the person closer to her rather than to a certain size characteristic of a potential social referent. Thus, the positive relationship between the size of established entrepreneurs and the start-up size will be moderated by the close social referent of nascent entrepreneurs. We state this argument in the following hypothesis:

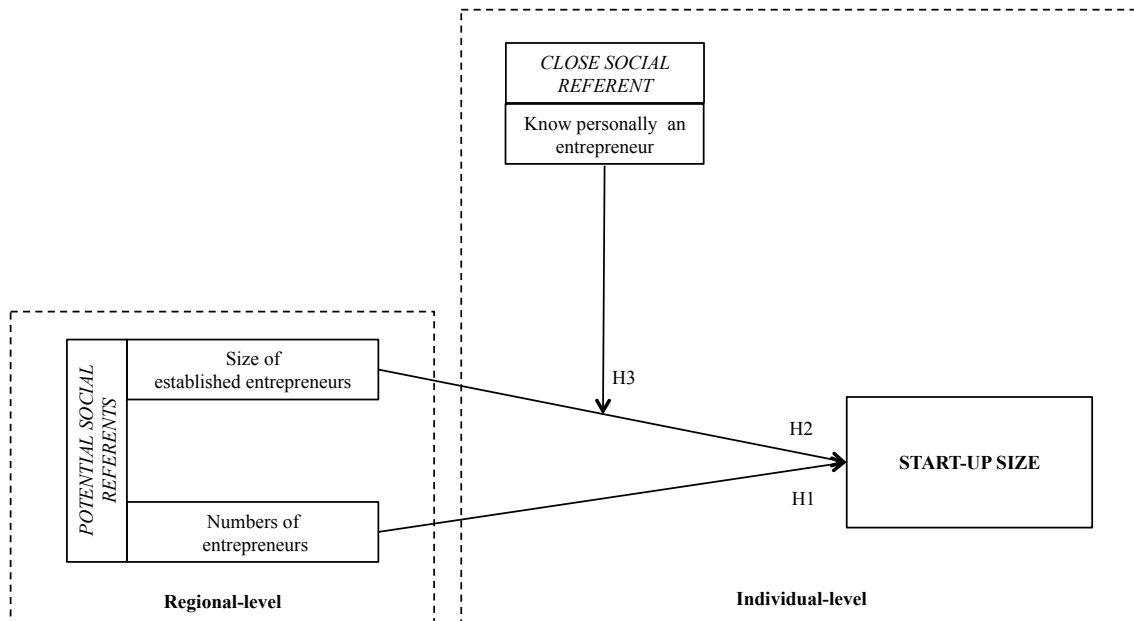
*Hypothesis 3: Close social referents reduce the positive effect that the size of established entrepreneurs in the region has on the size of new firms.*

Figure 2.1 captures the conceptual model implied by our hypotheses. First, we expect the number of established entrepreneurs in the region will have no effect on the start-up size of the new ventures. Second, we anticipate that there is a positive relationship between the size of established entrepreneurs in the region and the start-up size of new ventures. Finally, we predict that the close social referent will weaken the effect of the size of established entrepreneurs' in the region on the start-up size of the nascent entrepreneurs' new venture.

The conceptual model proposed captures the two dimensions of the multilevel approach that we want to tackle in this chapter: the regional context and the individual (Autio and Acs, 2010; Autio and Wennberg, 2010; Stuetzer et al., 2014).

**Figure 2.1**

Conceptual model and hypotheses



## 2.3 METHODS

### 2.3.1 Data collection and sample

In order to test our hypotheses we use two levels of analysis (i.e. individual and regional levels). In particular, our empirical model combines primary data for individuals and secondary data for province-level information in Spain. The analysis covers the years 2008, 2009 and 2010.

Individual observations are obtained from the Adult Population Survey (APS) of the Spanish GEM project, which allows us to account for the characteristics of those entrepreneurs in the process of starting up and managing a new business (Reynolds et al., 2005). The APS is designed to obtain a representative sample of the Spanish population aged 18 to 64. From the original APS database we selected those observations corresponding to nascent entrepreneurs. A nascent entrepreneur is defined as an individual who has taken some actions in the past year to create a venture, who expects to own at least a share of the new firm and

who has not paid salaries, wages or any other payments to the owners for more than three months (Reynolds et al., 2005; Stuetzer et al., 2014). At such an early stage, their declared expectations are not influenced by the evolution of business performance in the past, but are mostly shaped by the individual's beliefs about the potential of the business opportunity she identified. After cleaning missing values and non-valid answers the sample comprises 791 nascent entrepreneurs.

Regional variables were collected mainly from the Spanish Statistics Institute (*Instituto Nacional de Estadística*, INE) at province level. The Spanish territory is divided into 52 provinces, which are the second-level territorial and administrative divisions and correspond to NUTS 3 according to EUROSTAT. We are confident with the variables gathered from INE; they will properly capture the regional characteristics in our study.

### **2.3.2 Variable measurement**

*Dependent variable.* As per our conceptual model the dependent variable is start-up size, which is captured by firm's employment structure (i.e. Mata and Machado, 1996; Audretsch et al., 1999; Görg et al., 2000). We calculate it as the natural logarithm of the real number of employees (not counting the owners) at business inception.

*Independent variables.* Consistent with our hypotheses we use the following independent variables. At the regional level measuring potential social referents, we consider *number of entrepreneurs* as the proportion of employers and self-employed people over the total working population (INE). It captures the stock of past and present entrepreneurs in the province (Contín-Pilart and Larraza-Kintana, 2015). This variable is used to test hypothesis 1. The variable *size of established entrepreneurs* measures the average size of the established businesses per province (GEM) and is used to test hypothesis 2. At individual level, we use *know personally an entrepreneur* that is a binary variable taking value 1 if the entrepreneur knew personally someone who had started a business within the last 2 years. Finally, in order to capture the moderating role of the close social referent on the relationship between the potential social referents and the start-up size, we create the following interaction: *size of established entrepreneurs x know personally an entrepreneur*.

*Control variables.* We control for several individual and regional level variables. At the individual level, we first include entrepreneur's *age* in years and *gender* (1 male and 0

female). *Opportunity perception* measures to some extent the optimism of the entrepreneur (Cassar, 2010). Specifically, this is a dummy variable that takes the value 1 if the entrepreneur perceived good founding opportunities to start up a business in the next six months in the area where she lives in. We also control for *fear of failure*, which is variable that measures whether that feeling would slow entrepreneur down to start-up a business. *Spanish nationality* takes value 1 if the entrepreneur was born in Spain and 0 if born abroad. We also included the variable *necessity entrepreneurship*, which is a dummy variable that takes value 1 if the business was created by necessity and 0 if it was as a consequence of opportunity motivation. Regarding nascent entrepreneurs' human capital, we control for *higher education* captured through a dummy variable taking the value 1 if the entrepreneur has post-secondary (university degree) education and 0 otherwise. *Entrepreneurship training* is measured through a dummy variable that takes value 1 if the entrepreneur has received some training activities related to starting an enterprise and 0 otherwise. And finally, *owner-manager of existing business* takes value 1 when the nascent entrepreneur is the owner or manager of an existing business. We include time dummies (Stuetzer et al., 2014) to control by the *years* of the pool (excluding one as a reference category, in this case 2008). Finally, we introduced a set of industrial controls in all our specifications to take account of sectorial differences and optimum size of the firm that may affect growth aspirations (Estrin et al., 2013).

At the regional level, we control for three variables. The *industrial value added* corresponding to the weight of the industry in the economy computed as the average for the years 2004, 2005 and 2006. The *population density* variable to capture the number of inhabitants per km<sup>2</sup> in each province and it is calculated in thousands for presentation purposes. The *annual unemployment rate change* is measured in terms of the change experienced in the average unemployment rate from year t-1 to year t. The *annual population change* is measured using the absolute number of inhabitants of each province per year. As in the case of unemployment rates the change is measured relative to the previous year in percentage. Finally, GEM research suggest that entrepreneurial activity may be affected by regional economic development level (Stel et al., 2005), therefore, we control by *GDP/h* what is defined in terms of the Gross Domestic Product per-capita in each province and calculated in thousands for presentation purposes.



### 2.3.3 Methodological approach

The nature of our dataset is based in a pooled cross-sectional time series structure where individuals are hierarchically grouped by province. Because we are using two levels of analysis, data is analyzed using hierarchical linear modeling methods (e.g. Autio and Wennberg, 2010; Estrin and Mickiewicz, 2011; Autio et al., 2013; Estrin et al., 2013; Bosma and Sternberg, 2014; Stuetzer et al., 2014). Using standard multivariate methods, the assumption of independence of observations could be violated (Hofmann et al., 2000; Autio and Wennberg, 2010). In other words, we would be considering individuals to act homogeneously not taking into account the effect of the environment in their decisions (Autio and Wennberg, 2010).

To estimate the effects of social referents on start-up size we use multilevel random effects specification (Autio et al., 2013; Estrin et al., 2013), which assumes that provinces are drawn randomly from a larger population (Peterson et al., 2012). In other words, random effects analysis allows regression coefficients and intercepts to vary across provinces. Additionally, in multilevel or mixed linear methods, fixed effects refers to the group specific factors that in our case is corresponding to the level 2 cluster – the province.

Combining micro with macro levels of analysis is one of the main interests today in the field of management (Aguinis et al., 2011). So, the need to better understand and fine-grained the methods to assess such issue have recently increased its importance. In studies with more than one level of analysis, researchers have agreed that lower-level entities (e.g. individuals) are nested within higher level units (e.g. provinces) (Aguinis et al., 2013). Hence, multilevel analysis allows us to interplay cross-level interactions (Hundt and Sternberg, 2014). Therefore, multilevel improves previous multivariate methods (e.g. moderated multiple regressions) used for estimating interaction effects in management (Aguinis et al., 2005).

We adopt four steps testing strategy to analyze the effect of social referents on start-up size. First, we begin with the “null model” to estimate between-province variance to check if both the intercept and the slope vary across provinces. We observed significant province-level variance, which required the use of multilevel techniques (model 1 in table 2). Second, we add individual-level controls and predictors (model 2 in table 2). Third, we add province-level controls and predictors (model 3 in table 2). Finally, we add the cross-level interaction to

estimate the moderating effect. Overall, the model used to estimate the effect of social referents on start-up size takes the form (Autio and Wennberg, 2010; Stuetzer et al., 2014) as follows:

Individual-level component:

$$\begin{aligned} \text{Log}(\pi_{ij})_t = & \beta_{0j} \\ & + \beta_{pj} \{\text{individual-level predictors } t\} \\ & + \beta_{cj} \{\text{individual-level controls } t\} \\ & + r_{ij} \end{aligned} \quad (1)$$

Regional-level component:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} \{\text{regional-level predictors } t\} + \gamma_{02} \{\text{regional-level controls } t\} + \mu_{0j} \quad (2)$$

$$\beta_{pj} = \gamma_{p0} + \gamma_{p1} \{\text{regional-level predictors } t\} + \gamma_{p2} \{\text{regional-level controls } t\} + \mu_{pj} \quad (3)$$

In the model above  $\pi_{ij}$  represents a continuous measure where the individual  $i$  assigned in a region  $j$  will determine his/her start-up size. Normalizing with logarithm the previous measure, variable  $\beta_{0j}$  is the coefficient for each individual hierarchically nested in a specific province will have on start-up size.  $\beta_{pj}$  and  $\beta_{cj}$  are the coefficients for individual-level variables;  $\gamma_{00}$  is the mean of the intercepts, also called “constant” (Autio and Wennberg, 2010) across provinces and  $\gamma_{p0}$  is the mean of the slopes across provinces.  $\gamma_{01}$  and  $\gamma_{02}$  are the coefficients for regional-level variables in the model 3.  $\gamma_{p1}$  and  $\gamma_{p2}$  are the coefficients of cross-level variables in the model 4. Individual-level and regional-level residuals are capturing the random part of the equation meaning that  $r_{ij}$  indicates the individual-level residuals and  $\mu_{0j}$ ,  $\mu_{pj}$  the regional-level ones. In other words, the variance of  $\mu_{0j}$  and  $\mu_{pj}$  quantify the degree of heterogeneity in intercepts across provinces and the variance of  $r_{ij}$  quantify the within group variance (Aguinis et al, 2013). So, regional characteristics could affect the individual-level regressions as a consequence of a variation in both the intercept and the slopes across provinces at the individual-level.

## 2.4 RESULTS

In this section, Table 2.1 provides descriptive statistics and correlations. Next, Table 2.2 presents the multilevel random intercept model results to test hypotheses 1, 2 and 3. The nascent entrepreneur profile is described as follows. Table 2.1 shows that the average age of

individuals in the sample is 40 years and that almost 60% of them are men. The majority of the nascent entrepreneurs (59%) do not see good opportunities in the next six months to set up a business in their area. The vast majority of individuals (88% of the sample) were born in Spain. The average size of an entrepreneur's household is about three family members. Some 17% of the entrepreneurs in our sample admit that their entrepreneurial activity is driven by necessity. In terms of the human capital dimension of nascent entrepreneurs in our sample, the level of education, 34% of individuals have higher education qualifications (university degree). Those who have received entrepreneurship training, that is, those who have been involved in training activities aimed at improving their entrepreneurial skills and knowledge, represent almost 40% of the sample. Those nascent entrepreneurs who are owners or managers of an existing business make up 33% of the sample. In terms of industry, 28% of the new ventures are in the manufacturing sector. Regarding the measure of close social referent, if the nascent entrepreneur knows personally an entrepreneur who has started up in the last two years, 59% individuals declare affirmative. With this result we can suggest that many of them have in their close environment examples of entrepreneurs that they would serve as a social referent to them in the process of start-up.

Regarding to the regional-level variables, the average population density is 336.38 inhabitants per squared kilometer. The annual unemployment rate increased 36.6% at provincial level (on average). This shows how hard the economic crisis has hit the Spanish economy in the period covered in our analysis. The annual population change is about 1.53% inhabitants and the average GDP per capita among provinces is about €23,604.53. In keeping with the further social referent descriptive, 32% of individuals are entrepreneurs in the province. It means the proportion of employers and self-employed over the total working population. Finally, the average size of established entrepreneurs is about 3 members.

As expected in our theoretical section, bivariate correlations show that start-up size of the new venture is negatively related to the number of entrepreneurs and positively related with the size of established entrepreneurs in the province.

**Table 2.1**

**Descriptive statistics and correlation matrix**

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12
1. Start-up size (Ln)	0.66	0.95	1.000											
2. Age	40.56	10.92	0.136 ***	1.000										
3. Gender	0.59	0.49	-0.056 *	-0.004	1.000									
4. Opportunity perception	0.41	0.49	-0.010	-0.026	0.044 *	1.000								
5. Fear of failure	0.30	0.46	-0.011	0.021	-0.091 ***	-0.135 ***	1.000							
6. Spanish nationality	0.88	0.31	0.019	0.045 **	0.065 **	-0.077 **	0.010	1.000						
7. Necessity entrepreneurship	0.17	0.38	-0.093 **	0.034	-0.060 **	-0.076 **	0.069 **	0.033	1.000					
8. Higher education	0.34	0.47	0.006	-0.074 ***	0.009	0.003	-0.067 **	-0.017	-0.038 *	1.000				
9. Entrepreneurship training	0.39	0.48	-0.100 **	-0.069 **	0.027	-0.022	-0.083 ***	-0.018	-0.010	0.123 ***	1.000			
10. Owner-manager of existing business	0.33	0.47	0.469 ***	0.162 ***	-0.038 *	-0.146 ***	0.008	0.077 ***	0.016	-0.024	-0.016	1.000		
11. Year 2009	0.27	0.44	0.155 ***	-0.045 **	0.021	-0.067 **	-0.038 *	-0.024	-0.003	0.007	0.249 ***	-0.020	1.000	
12. Year 2010	0.24	0.43	-0.360 ***	0.017	0.061 **	-0.062 **	0.004	0.046 **	0.112 ***	0.037 *	0.130 ***	0.096 ***	-0.348 ***	1.000
13. Know personally an entrepreneur	0.59	0.49	-0.026	-0.040 *	0.061 **	0.149 ***	-0.054 **	0.015	-0.030	0.038 *	0.055 **	0.028	-0.010	-0.003
14. Industrial value added (in percentage units)	15.6	8.25	0.037	0.022	0.000	-0.009	0.022	0.066 **	0.007	-0.033	-0.085 ***	0.062 **	0.029	-0.038 *
15. Population density (Inhab/km <sup>2</sup> in thousands)	0.33	0.72	-0.082 **	-0.060 **	0.016	0.014	-0.003	-0.015	-0.025	0.025	0.069 **	-0.022	-0.012	0.101 ***
16. Annual unemployment rate change (in percentage units)	0.36	0.25	0.230 ***	-0.029	0.022	-0.022	-0.049 **	-0.055 **	-0.070 **	-0.012	0.053 **	-0.044 *	0.610 ***	-0.555 ***
17. Population density (Inhab/km <sup>2</sup> in thousands)	1.53	1.09	0.138 ***	-0.005	-0.036	0.053 **	-0.010	-0.067 **	-0.101 ***	-0.007	-0.133 ***	-0.098 ***	-0.137 ***	-0.427 ***
18. GDP/h (€ in thousands)	23.6	4.53	0.056 *	0.026	-0.022	0.058 **	-0.038 *	-0.057 **	-0.098 ***	0.064 **	0.011	0.039 *	-0.055 **	-0.067 **
19. Number of entrepreneurs	0.32	0.55	-0.056 *	-0.045 **	-0.016	0.009	0.009	0.030	-0.000	-0.018	0.013	-0.043 *	-0.033	0.030
20. Size of established entrepreneurs	3.25	3.12	0.244 ***	0.048 **	-0.022	0.017	-0.005	0.003	-0.061 **	-0.031	-0.132 ***	0.086 ***	-0.068 **	-0.314 ***

	13	14	15	16	17	18	19	20
13. Know personally an entrepreneur	1.000							
14. Industrial value added (in percentage units)	-0.022	1.000						
15. Population density (Inhab/km <sup>2</sup> in thousands)	0.012	-0.317 ***	1.000					
16. Annual unemployment rate change (in percentage units)	-0.027	0.093 ***	-0.188 ***	1.000				
17. Population density (Inhab/km <sup>2</sup> in thousands)	-0.008	-0.197 ***	0.155 ***	0.411 ***	1.000			
18. GDP/h (€ in thousands)	0.013	-0.264 ***	0.038 *	0.005	0.205 ***	1.000		
19. Number of entrepreneurs	-0.006	-0.220 ***	0.672 ***	-0.117 ***	0.182 ***	-0.194 ***	1.000	
20. Size of established entrepreneurs	0.001	0.122 ***	-0.147 ***	0.140 ***	0.169 ***	0.063 **	-0.071 **	1.000

Note: \* p< 0.10, \*\* p< 0.05, \*\*\* p< 0.001.

Table 2.2 provides results from multilevel random intercept model predicting start-up size. Model 2 provides baseline results for the individual-level controls and predictors. Accordingly, hypothesis 1 is supported since we do not find any statistically significant association between the size of new firms and the number of entrepreneurs (i.e. the number of social referents in the province). Model 3 introduces regional-level controls and predictors. Then, supporting hypothesis 2, results show that the size of new firms is positively related with the size of the established businesses. Finally, model 4 in table 2.2 examines the interaction term between size of established entrepreneurs and know personally and entrepreneur which coefficient is, as expected, negative and statistically significant, which fully supports hypothesis 3.

**Table 2.2**

Multilevel random intercept model predicting start-up size

Variables	Model 1	Model 2	Model 3	Model 4
<i>Individual-level controls</i>				
Age		0.004 (0.002)	0.004 (0.002)	0.004 (0.002)
Gender		-0.003 (0.064)	0.002 (0.064)	0.004 (0.063)
Opportunity perception		0.095 (0.065)	0.101 (0.065)	0.101 (0.064)
Fear of failure		-0.045 (0.066)	-0.047 (0.066)	-0.048 (0.065)
Spanish nationality		0.011 (0.115)	0.005 (0.116)	-0.004 (0.115)
Necessity entrepreneurship		-0.114 (0.073)	-0.111 (0.073)	-0.112 (0.073)
Higher education		0.099 (0.064)	0.101 (0.065)	0.099 (0.064)
Entrepreneurship training		0.005 (0.063)	0.005 (0.063)	-0.000 (0.062)
Owner-manager of existing business		0.814 (0.086) ***	0.793 (0.086) ***	0.804 (0.086) ***
Year 2009		-0.108 (0.092)	-0.194 (0.140)	-0.188 (0.139)
Year 2010		-0.244 (0.087) **	-0.225 (0.105) **	-0.205 (0.105) *
<i>Individual-level predictors</i>				
Know personally an entrepreneur		-0.044 (0.063)	-0.047 (0.063)	-0.053 (0.063)
<i>Regional-level controls</i>				
Industrial value added			-0.002 (0.004)	-0.003 (0.004)
Population density			-0.000 (0.062)	-0.005 (0.062)
Annual unemployment rate change			0.244 (0.256)	0.235 (0.255)
Annual population change			-0.055 (0.048)	-0.054 (0.048)
GDP/h			-0.002 (0.007)	-0.001 (0.007)
<i>Regional-level predictors</i>				
Number of entrepreneurs			-0.002 (0.090)	0.001 (0.089)
Size of established entrepreneurs			0.018 (0.008) *	0.048 (0.014) **
<i>Interaction effects</i>				
Size of established entrepreneurs × know personally an entrepreneur				-0.043 (0.017) **
<i>Random effects parameters</i>				
Intercept	0.678 (0.038) ***	-0.084 (0.225)	0.012 (0.318)	0.043 (0.317)
Variance of random intercept	0.014 (0.013)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Variance of overall residual	0.897 (0.043)	0.694 (0.034)	0.688 (0.034)	0.683 (0.034)
Intra-class correlation	0.000	0.000	0.000	0.000
Industry fixed effects	Yes	Yes	Yes	Yes
N of observations	910	791	791	791
N of groups (provinces)	50	50	50	50
Wald chi square	–	250.71 ***	258.90 ***	267.18 ***
Log Likelihood	-1248.225	-977.938	-974.838	-971.731
Degrees of freedom	0	15	22	23
AIC <sup>a</sup>	2496.450	1985.876	1993.676	1989.462

Notes: Table reports non-standardized β coefficients. Robust standard errors are in parentheses.

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.001; two tailed significances.

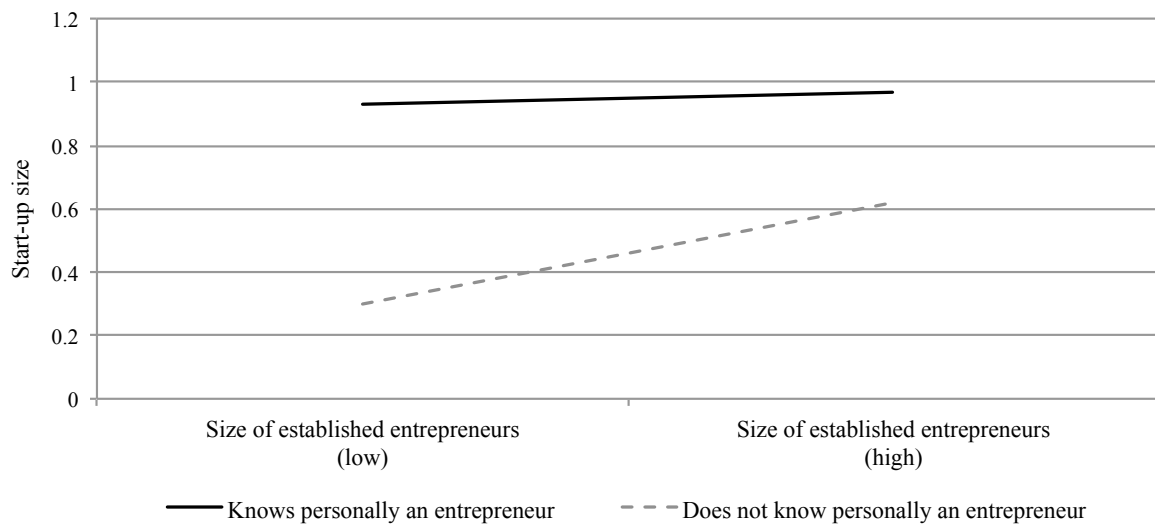
<sup>a</sup> AIC is Akaike's Information Criterion = 2k - 2 x (log likelihood), where k indicates the degrees of freedom.

To better understand the interaction effect we use the estimated coefficients presented in Table 2.2 to create a plot. Following the standard procedure in this kind of graphic representations, the start-up size of new ventures appears in the vertical axis. In the horizontal one we find low and high size of established entrepreneurs. The figure represents the effect of the size of established entrepreneurs on start-up size for those nascent entrepreneurs who know an individual who has started-up in the last two years and otherwise. As it is visible in the Figure 2.2 below, and consistent with hypothesis 3, the size of the new ventures increases with the size of further referents in the region but only for those who do not personally know an entrepreneur (i.e. do not have a close referent influencing him/her). As it can be seen the solid line that represents the change in start-up size of those who assert that they personally know an entrepreneur is almost flat. However, it is interesting to note that overall, the

average size of the firms created by those influenced by a close referent is larger than that those entrepreneurs without another entrepreneur in their close network. Taking together the evidence shown so far suggests that social referents, both close and further, influence the size of the new start-ups.

**Figure 2.2**

Moderating effect of close social referent on the relationship between potential social referents and start-up size



Regarding to control variables, we can comment that opportunity perception has a positive effect on the start-up of new ventures of nascent entrepreneurs. This means that if the entrepreneur sees good opportunities to do business in the area where she lives this will predict greater start-up size. Having experience in owning or managing another existing business will allow the entrepreneur aspire to start-up with more employees. The effect of the experience allows nascent entrepreneurs to be aware of the changes in the regional economic environment and consequently being positive concerning the size at inception of such new ventures. Finally, the negative and statistically significant effect of the year 2010 is capturing the recessive scenario in which the Spanish economy was, and still, involved.

### 2.4.1 Robustness tests

Some potential endogeneity concerns may be arising in our study. The province-year individual start-up size may be affected by some macro variables, such as unemployment and population rate. These two regional measures are closely related with the economic cycle and are likely to be influenced by the circumstantial effect of a given year. Consequently, we address this issue by calculating the change in the measure for the aforementioned two variables. Additionally, to investigate potential multicollinearity issues, we estimate the variance inflation factors (VIF) for all our variables. Values are in between 4.8 and 1.04, meaning that no serious multicollinearity problems exist. We follow strict standards that suggest values to be lower than 5 (Studenmund, 1997). Furthermore, tolerance values are all above 0.1, which indicate that variables do not suffer from multicollinearity (Autio et al., 2013).

We also should highlight that start-up size is only observed for those individuals who have been identified as nascent entrepreneurs. Consequently, there could be a possibility that self-selection to entrepreneurship might have biased our findings. In this vein, we also consider the bias caused by potential interdependence between the choice of whether to become an entrepreneur and start-up size, by introducing into the employment growth aspirations equation (second stage or outcome equation) the inverse Mill's ratio (IMR) based on modeling the choice to become a nascent entrepreneur (first stage or selection equation). For identification purposes, we chose a variable that is correlated with the first stage dependent variable (entrepreneurial entry) and uncorrelated with the second one (start-up size). Specifically, we use a variable capturing the individual's family size. This is originated from GEM data capturing the number of family members in the entrepreneurs' household. This variable is shown to have an influence in the entry decision to entrepreneurship (Blanchflower and Oswald, 1998), but it is not relevant for start-up size of new firms according to our results. So, we introduce "family size" into the selection equation. Overall, we could not detect a significant selection bias arising from the possibility that the factors determining the decision to become an entrepreneur might differ from those determining a new firm's start-up size. In other words, the outcome of our hypothesis tests with and without the inclusion of IMR was unchanged (Autio et al., 2013; Estrin et al., 2013). These extra results are not reported here, but all of them available upon request.



## 2.5 DISCUSSION AND CONCLUSIONS

Several social networks endowments have been considered previously in the literature as a key determinant of occupational option (Bosma et al., 2012; Contín-Pilart and Larrazza-Kintana, 2015; Lindquist et al., 2015). Nevertheless, research so far has not tackled the importance of social referent choice as a driver to predict start-up size of nascent entrepreneurs' new ventures; despite initial firm size has an effect on the subsequent firms' growth (Capelleras et al., 2008). As an answer to a claim from the literature, there is a need to further explore the way individuals vary their use of referent information according to their characteristics (Ho and Levesque, 2005). This research pays particular attention to that effect on start-up size.

Using a database that combines information at the individual and province level in Spain, we observe that while new ventures tend to be bigger in provinces where there are bigger firms, the number of established entrepreneurs (a proxy for entrepreneurs' density) has not significant impact. Furthermore, we observe that knowing an entrepreneur reduces the impact of potential social references on the size of new ventures.

Our first contribution is that we distinguish two main effects -number and size- from a potential social referents perspective in the province. We have found support to our hypothesis stating that the number of potential social referents in the region will have no effect on the size of the new businesses. It may be argued that since most of the new firms are small, the bigger number of firms in a region may be a consequence of a greater number of, on average, smaller firms. While we cannot completely rule out this possibility, it is also true that the failure rates of small firms, and particularly of self-employees, is also high (Löof and Nabavi, 2015). Consequently, it is not clear that we can establish a relationship between the number of firms and the size of those initiatives. As a result, it is reasonable to observe that the number of the stock of entrepreneurs in a region has no direct effect on the characteristics, in our case size, of the new business initiatives.

However, the influence of the size of the companies run by the potential social referents has revealed as an important determinant of start-up size. This is an important result, not only because provides evidence that the impact of potential social referents goes beyond the decision of becoming an entrepreneur, but also because it shows that new entrepreneurs have a tendency to imitate the characteristics of already established businesses. New entrepreneurs

may see in the features of existing businesses some guidance about the characteristics of a successful business and may try to imitate what they may understand are tried and proved ways of doing things. The positive relationship between the size of existing firms and the initial size of new businesses may be a reflection of the economic structure of the region. That is, it may be argued that more industrialized regions will tend to have bigger firms and will force new firms to be born bigger in order to compete with existing firms. In order to control for this potential confounding effect we have introduced in our models variables that intended to capture the economic structure of the region. While probably imperfect, we feel confident that we could reasonably approach such structure. As the analyses have indicated once, we control for that structure the effect of the size of firms run by the region level potential social referents still significant.

A second contribution of our chapter relates with the interaction between the environment and the individual. Specifically we have observed that the impact that region level potential social referents may have on new entrepreneurs weakens or even vanishes, when the new entrepreneur personally knows other entrepreneurs in its close network. The idea is that those close social referents are more influential than the potential social ones, and that therefore any influence of the later ones on the new entrepreneur is reduced. This is the case of employees and their high likelihood to have personal ties with coworkers in similar positions to them (Ho and Levesque, 2005). In our case, since we were interested in the impact of the size of firms of existing entrepreneurs on the size of new start-ups, it would be really interesting to have known the size of the firms of those individual level close social referents. Unfortunately, that information was not available, and leaves the door open for future research on the impact of close referents. Such research attempt will require a well designed and strong data gathering process, as it would imply first, the identification of those individual referents, and second, an assessment of the characteristics of the businesses (e.g. size, sector) run by those individual referents. Albeit a bit speculative, one may argue that since according to the official records of the Spanish Statistics Institute (*Instituto Nacional de Estadística*, INE) the majority of business in Spain are small firms or microfirms, if a person knows an entrepreneur most likely that entrepreneur will run a small firm or microfirms. Hence, if we accept that assumption, and according to our reasoning, close social referents would favor the creation firms that are small in size. This idea would be also consistent with our data. That is, close social referents not only would weaken the effect of potential social

referents on the size of new businesses, but also would, by itself, favor the creation of smaller businesses.

Despite this chapter contributes to the literature with original ideas and evidences, it is not free of limitations. First, we would like to have more fine-grained information about referent choice selection. In particular, and in line with our comment above, it would be very interesting to have more information about the close social referents and be able to determine, for example, if these close referents are peers (Stuart and Ding, 2006; Nanda and Sørensen, 2010), family or friends (Bosma et al., 2012; Lindquist et a., 2015), etc. Besides, we use cross-sectional data and perhaps a data set with longitudinal information about the individuals would provide a richer and more attuned analysis. Finally, the use of dichotomous scales can be seen as a limitation that we consider worth it to comment. The use of binary outcomes in a big international dataset like GEM has been justify to reduce bias caused by cultural interpretations (Autio et al., 2013). Also, this type of measures reduces problems with translation equivalences (Ter Hofstede et al., 2002).

This chapter has shown that there is a connection between the characteristics of the businesses run by regional level referents and the features of the new businesses. Specifically we have focused on a key firm level characteristic: its size. We believe that this line of inquiry should be further explored in future research. It would be advisable to keep working on the effect of the characteristics of social referents in other aspects of small firm growth such as actual firm growth or growth aspirations across industries. For example, do the characteristics of social referents, such as the growth strategy they followed, influence the growth aspirations and actual growth of new ventures? Given the proven impact that growth aspirations may have on actual firm growth (e.g. Wiklund and Shepherd, 2003; Wiklund et al., 2003), a further understanding of the impact of social referents in these other facets of firm growth may be of interest, not only for academics, but also for practitioners and policy makers.

# **CHAPTER III: REGIONAL POPULATION DENSITY AND ENTREPRENEURIAL GROWTH ASPIRATIONS: THE MODERATING ROLE OF INDIVIDUAL HUMAN CAPITAL**

## **3.1 INTRODUCTION**

Entrepreneurs' aspirations to grow capture the individuals' beliefs or conjectures about the growth potential of their ventures and are a reflection of their own motivations for running the business (Levie and Autio, 2013)<sup>3</sup>. Previous research on entrepreneurial growth aspirations has shown a positive effect of growth aspirations upon subsequent real growth (Baum et al., 2001; Wiklund and Shepherd, 2003; Davidsson et al., 2006), which has led to an increasing interest in the antecedents of such aspirations. Recent evidence shows that both external conditions and entrepreneur's background have an impact on the formation of growth aspirations (Autio and Acs, 2010; Estrin et al, 2013). However, there is a need to better understand the combined influence of environmental conditions, particularly the immediate context of the new firm, and individual characteristics related to the entrepreneur.

This lack of knowledge is fairly surprising because entrepreneurship is the outcome of the interplay between environmental conditions and individual attributes (Shane, 2003; Shane and Venkataram, 2000; Capelleras et al., 2016; Grichnik et al., 2014). In this sense, Davidsson (1991) points out that "objective" regional conditions have an impact on cognitive processes, which, in turn, would impact entrepreneurial growth aspirations. The present chapter contributes to the emerging literature on entrepreneurial growth aspirations formation by analyzing the joint effect of environmental conditions and individual characteristics. In this vein, we seek to further understand the interplay between the individual characteristics of the entrepreneur and his/her surrounding environment. We develop a framework to investigate the unique and joint effects of population density and entrepreneurs' human capital on growth aspirations of nascent entrepreneurs. The framework is based on insights from the regional entrepreneurship literature, together with the judgment-based approach to entrepreneurship, the entrepreneurial cognition framework and human capital theory.

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<sup>3</sup> While researchers have used terms such as "growth intentions", "growth ambitions" or "growth aspirations" interchangeably (Levie and Autio, 2013), we follow recent studies in this area and use the term entrepreneurial growth aspirations (e.g. Autio and Acs, 2010; Estrin et al, 2013).

We first argue that the immediate context where the firm is created, particularly the regional environment of the new business, will affect entrepreneurial growth aspirations. The role of the regional context in entrepreneurial activity is acknowledged in the entrepreneurship and economic geography literatures (e.g. Malecki, 1997; Trettin and Welter, 2011). While a number of regional variables have been shown to affect entrepreneurship, we focus on the level of population density. Population density determines both the opportunity structure (on the demand side) and the resources and abilities of individuals and their attitudes toward entrepreneurship (on the supply side). Hence, it captures features of the environment that are central to understand entrepreneurial behavior and, thus, growth aspirations of nascent entrepreneurs. Greater population density stimulates the creation of new firms due to a relatively-high number of entrepreneurial opportunities to be discovered and exploited (Ucbasaran et al., 2008; Dencker et al., 2009; Dencker and Gruber, 2014), but, at the same time, enhances competition, which may lead to high business failure rates (Bosma et al, 2008; Kibler et al., 2014; Lööf and Nabavi, 2015). In these conditions prospective entrepreneurs will require a greater performance threshold to their ventures. It follows that the growth aspirations of the nascent entrepreneurs in these regions will be higher.

Secondly, drawing on the notion that “objective” characteristics of the regional environment (Kibler, 2013) and human capital interact in shaping entrepreneurial growth aspirations, we examine how population density and the founder’s knowledge endowments jointly affect entrepreneurial growth aspirations. We argue that the relationship between population density and aspirations will be moderated by the entrepreneurs’ human capital. Human capital gained through formal educational processes or experience allows nascent entrepreneurs to better gauge the opportunities and threats of the surrounding environment. At the same time, greater human capital increases nascent entrepreneurs’ self-efficacy (Autio and Acs, 2010). All together leads us to expect that growth aspirations in regions with greater population density will be higher for those nascent entrepreneurs with bigger endowments of human capital.

Our empirical analysis is based on a sample of 643 of nascent entrepreneurs in Spain. We concur with the definition provided by the Global Entrepreneurship Monitor (GEM) project and define a nascent as an individual who is active in the process of starting a new firm (less than 3 months old) but have not yet launched it. Our choice of nascent entrepreneurs is based on the interest for exploring growing aspirations when those intentions are emerging (Douglas, 2013). Specifically, our data set combines individual-level information obtained

from the GEM project in Spain with province-level information gathered from the Spanish Statistics Institute during a recessive period (2008-2010). A multilevel analysis is *employed* for testing the hypotheses. Results confirm that growth aspirations of nascent entrepreneurs are higher in densely populated provinces and that in these provinces growth aspirations increase with higher education and with owner-manager experience.

The rest of the chapter is organized as follows. First, we develop and justify four testable hypotheses. Second, we describe the data, variables and methods. Third, we present the results of our empirical analysis. To conclude, we discuss the implications of the findings.

## **3.2 THEORY AND HYPOTHESES DEVELOPMENT**

### **3.2.1 Population density and entrepreneurial growth aspirations**

Individual development and behavior take place in a certain location and in an environment that is partly region specific (Fritsch and Storey, 2014). Entrepreneurs have a strong tendency to locate their businesses close to their place of residence (Figueiro et al., 2002, Dahl and Sorenson, 2009), which indicates that firm founders will be strongly influenced by the regional context where they live. In this sense, researchers have shown that regional factors affect individual decisions in the entrepreneurial process (Mueller et al., 2008). Studies in the economic geography literature have found that factors such as population growth (Fritsch and Storey, 2014; Reynolds et al., 1994), regional share of labor force employed in small businesses (Fritsch, 1997) and unemployment rates (Bosma and Schutjens, 2011) relate to new firm formation rates.

The conditions of the immediate environment surrounding the entrepreneur, such as economic, demographic and physical features that constitute the regional context, are likely to shape aspirations (Kibler et al., 2014). In effect, regions differ in their availability of resources and opportunities (Stam et al., 2012), and individuals will encounter regional environments that are more or less benevolent and munificent when aiming to become an ambitious entrepreneur. Hence, depending on the environmental conditions, individuals may aspire to different degrees of growth for their new businesses. However, evidence on the regional influences on entrepreneurial growth aspirations is still scarce.

In this chapter, we focus on the regional level of population density as a potential determinant of entrepreneurial growth aspirations. Population density has been linked with greater new

business formation rates. In general, highly dense regions show more local market opportunities related to the consumer market and necessary inputs (Tödttling and Wanzenböck, 2003; Wagner and Sternberg, 2004) than less dense regions (e.g. Reynolds et al, 1994; Armington and Acs 2002), which facilitates the entry of new firms. Moreover, densely populated regions are often characterized by a more diverse population and more variety in demand, which stimulates new firm start-ups (Bosma et al., 2008; Frenken and Bloschma, 2007). In addition, conditions for entering a market are thought to be more favorable in more densely populated regions (Audretsch and Fritsch, 1994) because of closer proximity to the consumer market, the more developed business infrastructure and the presence of a more skilled workforce. Networking and collaboration with potential customers, suppliers and other organizations are also more likely to occur in regions with a higher population density (Liao and Welsch, 2005; Kibler et al, 2014). All these effects together will stimulate the creation of new firms in densely populated regions. However, these regions can also undermine entrepreneurial activities, mainly because of intense competition, high barriers to entry and less room for product differentiation (Bosma et al, 2008; Kibler et al, 2014). Nevertheless, as Fritsch and Storey (2014) point out there is a clear evidence of a positive impact of population density, and in general effects of urbanization/agglomeration, on both service and manufacturing new business formation rates.

In continuing with this line of work, we argue that population density not only affects new firm formation rates, but that it also influences entrepreneurial growth aspirations. The access to a greater and more diverse potential demand, the availability of resources or the greater opportunity for networking that are associated with more densely populated regions, constitute an environment that opens opportunities for business growth. However, it also should be acknowledged that business failure rates are higher in regions with greater population density. Strong competition in these densely populated regions (Bosma et al, 2008; Kibler et al, 2014) may lead to relatively high business failure rates (Lööf and Nabavi, 2015). This will increase the perceived risk of business failure by entrepreneurs. As a result, individuals from highly populated regions will require higher performance threshold when thinking about the possibility of setting up a new firm. Consequently, these entrepreneurs will have higher growth aspirations than entrepreneurs from less dense regions to compensate for a higher business failure risk.

Overall, we argue that greater regional population density will have a positive impact on entrepreneurial growth aspirations due to the expected higher growth potential of businesses in these regions and the required higher performance threshold. Accordingly, we formulate the following hypothesis concerning the relationship between growth aspirations and regional population density.

*Hypothesis 1: Entrepreneurial growth aspirations are positively correlated with population density.*

### **3.2.2 The moderating role of human capital**

We have argued that the regional context, and more specifically the population density of the region, will have an impact on entrepreneurial growth aspirations. We now build upon previous literature on human capital (Becker, 1964), entrepreneurial cognition (Mitchell et al., 2002) and the judgment approach to entrepreneurship (e.g. Knight, 1921; Mises, 1949) to propose that this effect is likely to vary with the human capital endowments of the entrepreneur. The judgment approach views entrepreneurs as decision makers who invest resources based on the judgment of future conditions. Entrepreneurs' judgmental decisions are actually grounded on beliefs or conjectures about the future, which, we argue, are likely to be influenced by their human capital.

Following Becker (1964), we define human capital as knowledge and skills that individual acquire through investments in education, on-the-job training or other types of experience<sup>4</sup>. According to Mitchell et al (2002:97), "entrepreneurial cognitions are the knowledge structures that people use to make assessments, judgments, or decisions involving opportunity evaluation, venture creation, and growth". Thus, entrepreneurial cognition has to do with "how entrepreneurs use mental models to piece together unconnected information that may help them to assemble the necessary resources to launch and grow their businesses" (Mitchell et al., 2002:97). In other words, entrepreneurial cognitions link the knowledge and skill endowments that made up human capital with entrepreneurial judgment, defined as the act of evaluating opportunities and deciding which resources need to be assembled and how they need to be combined, to capitalize on entrepreneurial opportunities (Foss and Klein, 2012).

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<sup>4</sup> Human capital attributes -including education, experience, knowledge, and skills- have been argued to be a critical resource for entrepreneurial success (e.g. Florin et al., 2003; Pfeffer, 1994; Sexton and Upton, 1985) and empirical evidence has well established this positive relationship (Unger et al., 2011). In addition, previous evidence has shown that human capital, in particular higher education, also has a positive impact on the aspirations of nascent entrepreneurs (Autio and Acs, 2010; Stam et al., 2012).



Since entrepreneurial cognitions are shaped by human capital, and judgment is an integral part of those entrepreneurial cognitions, it follows that entrepreneurs' understanding and conjectures about the existence of opportunities and threats in the environment, and ultimately about the future prospects of the new venture are likely to be affected by their human capital. Through both work experience and the different educational processes individuals gain knowledge and build mental frames and models they use to interpret and make sense of the reality that surrounds them (Mitchell et al, 2002). Education and experience influence how the entrepreneurs perceive the environment and thus affect opportunity identification and assessment and, ultimately, growth aspirations. Because human capital influences entrepreneurial cognitions and judgment, it affects the way individuals perceive and understand the environment that surrounds them. In this vein, human capital will shape entrepreneurs' beliefs or conjectures about the growth potential of their firms (i.e. growth aspirations) in a given regional context. That is, entrepreneurs, will interpret the signals sent by the regional context differently, depending on their level of human capital. Hence, we expect to observe differences in the growth aspirations of entrepreneurs within a given regional context as a function of their human capital endowments. In particular, the growth aspirations of entrepreneurs in densely populated regions will vary as a function of their human capital.

In this chapter we distinguish and consider the following endowments of human capital: higher education, entrepreneurship training and owner-manager experience. Entrepreneurs with higher education are expected to embrace more ambitious growth targets or reduce initial expectations in line with regional conditions (Dutta and Thornhill, 2008). As stated previously, higher business failure risk in regions with greater population density, due mainly to greater competition, leads entrepreneurs to require a higher performance threshold and, therefore, to have higher growth aspiration. Entrepreneurs with higher education, compared with those without such education, will possess more technical as well as general knowledge base, that would vest them with better capacity to gather, process and analyze relevant information (Forbes, 2005; Kim et al., 2006; Capelleras and Greene, 2008). In addition, the knowledge gained through higher education may allow nascent entrepreneurs to better understand the consequences of their decisions. Highly educated individuals may also have access to a large and resource-rich network of contacts (Batjargal, 2003; Capelleras et al, 2010), which may favor their awareness of the changes in the local environment, including

the recognition and exploitation of opportunities (Kibler et al, 2014). Hence, nascent entrepreneurs with higher education will be more aware of the advantages and disadvantages of densely populated regions, and therefore will be more likely to recognize that greater growth is required in denser regions and to demand higher growth rates, and consequently, have higher growth aspirations.

Also, previous research has noted (Autio and Acs, 2010) that the opportunity cost of being involved in entrepreneurial activities is higher for individuals with higher education because of their better job market prospects. Accordingly, nascent entrepreneurs with higher education will ask higher growth potential to their ventures and will show higher growth aspirations. This situation is exacerbated in densely populated regions, since employment opportunities are usually also better in those regions (Armington and Acs, 2002; Bosma and Sternberg, 2014). But entrepreneurs with higher education also rate higher on self-efficacy (Autio and Acs, 2010). This will lead them to perceive that they are able to capitalize on the greater growth opportunities that are often associated with more densely populated regions (Bosma et al., 2008).

In sum, highly educated entrepreneurs in highly dense regions are expected to have higher growth aspirations than those entrepreneurs without higher education in the same dense regions. The following hypothesis summarizes this expectation:

*Hypothesis 2: The relationship between growth aspirations and population density varies with the educational level of the entrepreneur, such that the growth aspirations of entrepreneurs in more densely populated provinces are higher for those with higher education.*

Individuals having received training in entrepreneurship will also show greater growth aspirations in more densely populated regions. Entrepreneurship training focuses mainly on “the identifications of opportunities” (DeTienne and Chandler, 2004; Fiet and Barney, 2002). In fact, certain skills related to identifying highly credible opportunities can be identified and taught (Fiet and Barney, 2002). Some evidence suggests that individuals who have received entrepreneurship training are more likely to undertake opportunity identification tasks than those who have not received such training (DeTienne and Chandler, 2004). In other words, individuals can learn opportunity-seeking processes through the avenue of entrepreneurship

training, thereby improving both the number of ideas generated and the innovativeness of those ideas.

We suggest that this focus on opportunities may affect an individual's understanding of their surrounding environment. Then, similar to the case of entrepreneurs with higher education, entrepreneurs who have received entrepreneurship training will be more aware about the better growth potential in regions with higher population density, but also that greater growth is required in these regions to overcome the greater failure rates. It follows that those individuals who, being aware of the opportunities and risks associated with new ventures in these regions, decide to create a new firm will demand higher growth rates, and consequently have higher growth aspirations. Also, the learning process in the training programs will lead to greater self-efficacy through vicarious learning. Self-efficacy is likely to have a positive impact on the nascent entrepreneurs' beliefs about their chances to take advantage of the growth opportunities available in regions with greater population density (Autio and Acs, 2010).

We therefore expect that entrepreneurs who have received entrepreneurship training and who are located in regions with greater population density, will hold higher growth aspirations than those entrepreneurs without such entrepreneurship training located in the same dense regions. Based on these considerations, we suggest the following hypothesis:

*Hypothesis 3. The relationship between growth aspirations and population density varies with the entrepreneurship training, such that the growth aspirations of entrepreneurs in more densely populated provinces are higher for those with entrepreneurship training.*

Entrepreneurs who are owners or managers of an existing business will also have higher growth aspirations in regions with greater population density. New firms suffer from the liability of newness, which refers to a higher propensity to fail as compared to established firms (Aldrich and Wiedenmayer, 1993; Stinchcombe, 1965). The liability of newness is partially due to skill gaps and lack of information. Therefore, human capital in general, and individual's owner-manager experience in particular, would contribute to reduce or eliminate it (Aldrich and Auster, 1986).

Entrepreneurs with previous manager-owner experience have a "track record", as well as routines and established practices that will able them to obviate the liability of newness and

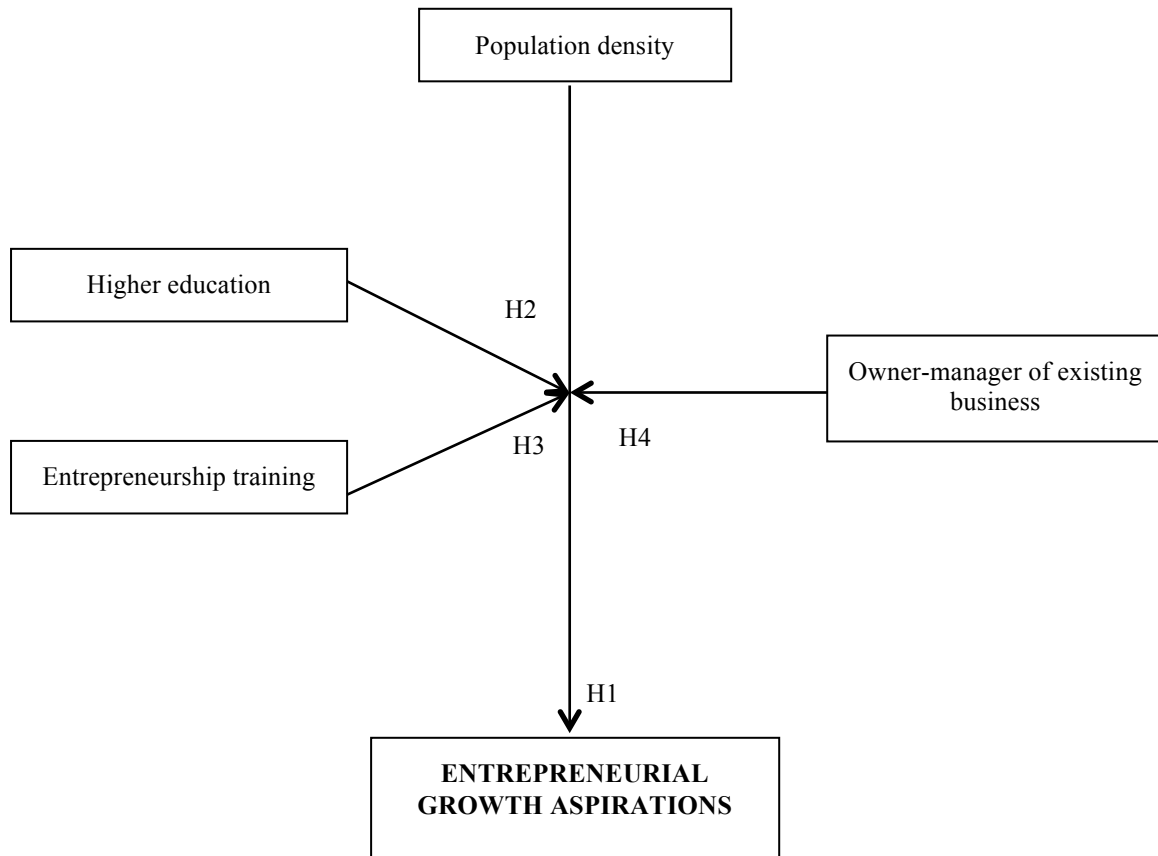
to have a good understanding of the surrounding environment. It follows that entrepreneurs with prior owner-manager experience are more likely to recognize that greater growth is required in denser regions. In addition, past owner-manager experience is likely to increase self-efficacy through enactive mastery, which in turn will translate into greater confidence about the possibilities to make the most of the growth opportunities available in regions with greater population density. Consequently, we expect entrepreneurs with prior owner-manager experience located in more densely populated regions to have higher growth aspirations than those entrepreneurs without that experience located in the same dense regions. The following hypothesis summarizes this expectation:

*Hypothesis 4. The relationship between growth aspirations and population density varies with the entrepreneur's prior owner-manager experience, such that the growth aspirations of entrepreneurs in more densely populated provinces are higher for those with prior owner-manager experience.*

Figure 3.1 visually summarizes the conceptual model of the chapter.

**Figure 3.1**

Conceptual model and hypotheses



### 3.3 METHODS

#### 3.3.1 Data collection and sample

In order to test our hypotheses we use two levels of analysis i.e. individual and regional levels. In particular, our empirical model combines primary data for individuals and secondary data for province-level information in Spain. This model is based in cross-sectional database structure lacking in the field of entrepreneurship longitudinal dataset available to study entrepreneurial behavior (Stuetzer et al., 2014). The analysis covers the years 2008, 2009 and 2010, which are considered a recessive period for the Spanish economy.

Individual observations are obtained from the Adult Population Survey (APS) of the Spanish GEM project, which allows us to account for the characteristics of those entrepreneurs in the

process of starting up and managing a new business (Reynolds et al., 2005). The APS is designed to obtain a representative sample of the Spanish population aged 18 to 64. From the original APS database we selected those observations corresponding to nascent entrepreneurs. A nascent entrepreneur is defined as an individual who has taken some actions in the past year to create a venture, who expects to own at least a share of the new firm and who has not paid salaries, wages or any other payments to the owners for more than three months (Reynolds et al., 2005; Stuetzer et al., 2014). At such an early stage, their declared expectations are not influenced by the evolution of business performance in the past, but are mostly shaped by the individual's beliefs about the potential of the business opportunity she identified. After cleaning missing values and non-valid answers the sample comprises 644 nascent entrepreneurs.

Regional variables were collected mainly from the Spanish Statistics Institute (*Instituto Nacional de Estadística*, INE) at province level. The Spanish territory is divided into 52 provinces, which are the second-level territorial and administrative divisions and correspond to NUTS 3 according to EUROSTAT. We are confident with the variables gathered from INE; they will properly capture the regional characteristics in our study. In order to avoid endogeneity concerns we use the change in the population rate and the unemployment rate variables to avoid volatility among years.

### **3.3.2 Variable measurement**

*Dependent variable.* As per our conceptual model the dependent variable is *entrepreneurial growth aspirations*. Following previous studies (e.g. Estrin et al., 2013) we calculate entrepreneurs' growth aspirations as the difference between the natural logarithms of the entrepreneurs' expected number of employees in the next five years and the real number of employees (not counting the owners) at business inception. We claim that growth aspirations provide a better test of our theory than eventual realized growth. This is because the decision to pursue growth is a socially visible due to involves significant economic risk and legitimacy trade-offs (Autio et al., 2013). Most firms need to invest upfront in order to pursue growth: hire employees, invest in product development, build distribution channels, conduct marketing campaigns, raise funding, and so on (Delmar and Wennberg, 2010). Once commitment to growth has been signaled, such commitments may be difficult to withdraw without cost to the individual's social standing (Autio et al., 2013). Therefore, although our

variable does not reflect actual growth, it however provides a good reflection of the legitimacy and resource considerations driving allocation of effort into entrepreneurship under uncertainty and when exposed to observable cultural practices (Cliff, 1998), and therefore a direct and timely reflection of growth-oriented entrepreneurial behaviors (Delmar and Wiklund, 2008).

*Independent variables.* Consistent with our hypotheses we use the following independent variables. At the regional level, we measure *population density* as the number of inhabitants per km<sup>2</sup> in each province. This variable is used to test hypothesis 1 and is computed in thousands for presentation purposes. At the individual level, we consider *higher education* captured through a dummy variable taking the value 1 if the entrepreneur has post-secondary (university degree) education and 0 otherwise. *Entrepreneurship training* is measured through a dummy variable that takes value 1 if the entrepreneur has received some training activities related to starting an enterprise and 0 otherwise. Finally, *owner-manager of existing business* takes value 1 when the nascent entrepreneur is the owner or manager of an existing business. To test hypotheses 2, 3 and 4 we create the following three interaction variables: *population density x higher education*; *population density x entrepreneurship training* and *population density x owner-manager of existing business*.

*Control variables.* We control for several individual and regional level variables. At the individual level, we first include entrepreneur's *age* in years and *gender* (1 male and 0 female). *Opportunity perception* measures to some extent the optimism of the entrepreneur (Cassar, 2010). Specifically, this is a dummy variable that takes the value 1 if the entrepreneur perceived good founding opportunities to start up a business in the next six months in the area where she lives in. We also control for *fear of failure*, which is variable that measures whether that feeling would slow entrepreneur down to start-up a business. Immigrants present lower levels of socio-cultural fit (Contín-Pilart and Larraza-Kintana, 2014) which influences their understanding of the environment, and therefore may potentially influence their aspirations. Hence, *Spanish nationality* takes value 1 if the entrepreneur was born in Spain and 0 if born abroad. We also control for *family size* measured in terms of the number of family members in the entrepreneurs' household, and also included the variable *necessity entrepreneurship*, which is a dummy variable that takes value 1 if the business was created by necessity and 0 if it was as a consequence of opportunity motivation. We include time dummies (Stuetzer et al., 2014) to control by the *years* of the pool (excluding one as a

reference category, in this case 2008). Finally, we introduced a set of industrial controls in all our specifications to take account of sectorial differences and optimum size of the firm that may affect growth aspirations (Estrin et al., 2013).

At the regional level, we control for three variables. The *annual unemployment rate change* is measured in terms of the change experienced in the average unemployment rate from year t-1 to year t. Since unemployment rates (in percentage) per province are published each three months, yearly average unemployment rate is computed as the average of the four quarters of each year and expressed in percentage units for presentation purposes. The *annual population change* is measured using the absolute number of inhabitants of each province per year. As in the case of unemployment rates the change is measured relative to the previous year in percentage. Finally, the *GDP/h* is defined in terms of the Gross Domestic Product per-capita in each province and calculated in thousands for presentation purposes.

### **3.3.3 Methodological approach**

The nature of our dataset is based in a pooled cross-sectional time series structure where individuals are hierarchically grouped by province. Because we are using two levels of analysis, data is analyzed using hierarchical linear modeling methods (e.g. Autio and Wennberg, 2010; Estrin and Mickiewicz, 2011; Autio et al., 2013; Estrin et al., 2013; Bosma and Sternberg, 2014; Stuetzer et al., 2014). Using standard multivariate methods, the assumption of independence of observations could be violated (Hofmann et al., 2000; Autio and Wennberg, 2010). In other words, we would be considering individuals to act homogeneously not taking into account the effect of the environment in their decisions (Autio and Wennberg, 2010).

To estimate the direct effect of population density and the moderating ones of human capital endowments on entrepreneurial growth aspirations we use multilevel random effects specification (Autio et al., 2013; Estrin et al., 2013), which assumes that provinces are drawn randomly from a larger population (Peterson et al., 2012). In other words, random effects analysis allows regression coefficients and intercepts to vary across provinces. Additionally, in multilevel or mixed linear methods, fixed effects refers to the group specific factors that in our case is corresponding to the level 2 cluster – the province.



Combining micro with macro levels of analysis is one of the main interests today in the field of management (Aguinis et al., 2011). So, the need to better understand and fine-grained the methods to assess such issue have recently increased its importance. In studies with more than one level of analysis, researchers have agreed that lower-level entities (e.g. individuals) are nested within higher level units (e.g. provinces) (Aguinis et al., 2013). Hence, multilevel analysis allows us to interplay cross-level interactions (Hundt and Sternberg, 2014). Therefore, multilevel improves previous multivariate methods (e.g. moderated multiple regressions) used for estimating interaction effects in management (Aguinis et al., 2005).

We adopt three steps testing strategy to study the direct effect of population density and the moderating ones of human capital endowments on entrepreneurial growth aspirations. First, we begin with the “null model” to estimate between-province variance to check if both the intercept and the slope vary across provinces. We observed significant province-level variance, which required the use of multilevel techniques (model 1 in table 2). Second, we add individual-level controls and predictors (model 2 in table 2). Third, we add province-level controls and predictors (model 3 in table 2). Finally, we add the cross-level interaction to estimate the moderating effect (model 7 in table 2). Overall, the model used to estimate the direct effect of population density and the moderating ones of human capital endowments on entrepreneurial growth aspirations takes the form (Autio and Wennberg, 2010; Stuetzer et al., 2014) as follows:

Individual-level component:

$$\begin{aligned} \text{Log} (\pi_{ij})_t &= \beta_{0j} \\ &+ \beta_{pj} \{ \text{individual-level predictors } t \} \\ &+ \beta_{cj} \{ \text{individual-level controls } t \} \\ &+ r_{ij} \end{aligned} \tag{1}$$

Regional-level component:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} \{ \text{regional-level predictors } t \} + \gamma_{02} \{ \text{regional-level controls } t \} + \mu_{0j} \tag{2}$$

$$\beta_{pj} = \gamma_{p0} + \gamma_{p1} \{ \text{regional-level predictors } t \} + \gamma_{p2} \{ \text{regional-level controls } t \} + \mu_{pj} \tag{3}$$

In the model above  $\pi_{ij}$  represents a continuous measure where the individual  $i$  assigned in a region  $j$  will determine his/her start-up size. Normalizing with logarithm the previous measure, variable  $\beta_{0j}$  is the coefficient for each individual hierarchically nested in a specific province will have on start-up size.  $\beta_{pj}$  and  $\beta_{cj}$  are the coefficients for individual-level variables;  $\gamma_{00}$  is the mean of the intercepts, also called “constant” (Autio and Wennberg, 2010) across provinces and  $\gamma_{p0}$  is the mean of the slopes across provinces.  $\gamma_{01}$  and  $\gamma_{02}$  are the coefficients for regional-level variables in the model 3.  $\gamma_{p1}$  and  $\gamma_{p2}$  are the coefficients of cross-level variables in the model 4. Individual-level and regional-level residuals are capturing the random part of the equation meaning that  $r_{ij}$  indicates the individual-level residuals and  $\mu_{0j}$ ,  $\mu_{pj}$  the regional-level ones. In other words, the variance of  $\mu_{0j}$  and  $\mu_{pj}$  quantify the degree of heterogeneity in intercepts across provinces and the variance of  $r_{ij}$  quantify the within group variance (Aguinis et al, 2013). So, regional characteristics could affect the individual-level regressions as a consequence of a variation in both the intercept and the slopes across provinces at the individual-level.

### 3.4 RESULTS

In this section, table 3.1 provides descriptive statistics and correlations. Next, table 3.2 presents the multilevel random intercept model results. Table 3.1 shows that the average age of individuals in the sample is 40 years and that almost 60% of them are men. Reflecting the recessive economic period of the study, the majority of the nascent entrepreneurs (58%) do not see good opportunities in the next six months to set up a business in their area. The vast majority of individuals (89% of the sample) were born in Spain and a total of 59% of entrepreneurs declare they know personally other entrepreneurs who started-up in the last two years. The average size of an entrepreneur’s household is about three family members. Some 18% of the entrepreneurs in our sample admit that their entrepreneurial activity is driven by necessity. In terms of industry, 28% of the new ventures are in the manufacturing sector.

Regarding the level of education, 34% of the nascent entrepreneurs have higher education qualifications (university degree). Those who have received entrepreneurship training, that is, those who have been involved in training activities aimed at improving their entrepreneurial skills and knowledge, represent almost 40% of the sample. Those nascent entrepreneurs who are owners or managers of an existing business make up 34% of the sample.

With regard to the regional variables, the average population density is 336.38 inhabitants per squared kilometer. The annual unemployment rate increased 36.6% at provincial level (on average). This shows how hard the economic crisis has hit the Spanish economy in the period covered in our analysis. The annual population change is about 1.53% inhabitants and the average GDP per capita among provinces is about €23,604.53.

Bivariate correlations show that entrepreneurial growth aspirations are positively related to population density, entrepreneurs' education and entrepreneurship training, but negatively associated with the entrepreneurs' owner-manager experience.

**Table 3.1**  
Descriptive statistics and correlation matrix

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
1. Entrepreneurial growth aspirations (Ln)	0.6	0.82	1.000									
2. Age	40.56	10.92	-0.160 ***	1.000								
3. Gender	0.59	0.49	0.088 **	-0.004	1.000							
4. Opportunity perception	0.42	0.49	0.181 ***	-0.026	0.044 *	1.000						
5. Fear of failure	0.31	0.46	-0.075 **	0.021	-0.092 ***	-0.135 ***	1.000					
6. Spanish nationality	0.89	0.31	-0.055	0.045 **	0.065 **	-0.077 **	0.010	1.000				
7. Family size	3.27	1.32	-0.079 **	0.019	-0.043 *	-0.035	0.004	0.009	1.000			
8. Necessity entrepreneurship	0.18	0.38	-0.003	0.035	-0.060 **	-0.076 **	0.069 **	0.033	0.057 **	1.000		
9. Higher education	0.34	0.47	0.144 ***	-0.074 ***	0.009	0.003	-0.067 **	-0.017	-0.036	-0.038 *	1.000	
10. Entrepreneurship training	0.39	0.49	0.111 **	-0.069 **	0.028	-0.022	-0.084 ***	-0.019	-0.029	-0.010	0.123 ***	1.000
11. Owner-manager of existing business	0.34	0.47	-0.484 ***	0.162 ***	-0.038 *	-0.146 ***	0.008	0.077 ***	0.027	0.016	-0.024	-0.016
12. Manufacturing	0.28	0.45	-0.023	0.066 **	0.080 ***	-0.016	0.031	0.021	0.041 *	0.032	-0.013	-0.013
13. Annual unemployment rate change (in percentage units)	0.36	0.25	-0.198 ***	-0.029	0.022	-0.022	-0.049 *	-0.056 **	-0.014	-0.070 **	-0.012	0.054 **
14. Annual population change (%)	1.53	1.09	-0.106 **	-0.005	-0.036	0.054 **	-0.010	-0.067 **	0.017	-0.101 ***	-0.007	-0.133 ***
15. GDP/h (€ in thousands)	23.60	4.53	-0.089 **	0.026	-0.022	0.058 **	-0.038 *	-0.057 **	-0.040 *	-0.098 ***	0.064 **	0.011
16. Population density (Inhab/km <sup>2</sup> in thousands)	0.33	0.72	0.152 ***	-0.060 **	0.016	0.015	-0.003	-0.015	0.082 ***	-0.026	0.025	0.069 **

	11	12	13	14	15	16
11. Owner-manager of existing business	1.000					
12. Manufacturing	0.061 **	1.000				
13. Annual unemployment rate change (in percentage units)	-0.044 *	0.036	1.000			
14. Annual population change (%)	-0.098 ***	0.002	0.411 ***	1.000		
15. GDP/h (€ in thousands)	0.039 *	-0.019	0.006	0.205 ***	1.000	
16. Population density (Inhab/km <sup>2</sup> in thousands)	-0.022	-0.043 *	-0.188 ***	0.155 ***	0.038 *	1.000

Note: \* p< 0.10, \*\* p< 0.05, \*\*\* p< 0.001.

Table 3.2 provides results from multilevel random intercept model predicting entrepreneurial growth aspirations. Model 2 provides baseline results for the individual-level variables linked to higher education, entrepreneurship training and owner-manager experience. Model 3 incorporates the effects of regional variables and thus shows the influence of population density on entrepreneurial growth aspirations. Consequently, supporting hypothesis 1, we find a positive relationship between population density and entrepreneurial growth aspirations.

Model 4 of table 3.2 examines the interaction between population density and higher education. In keeping with hypothesis 2, we find that the positive effect of population density observed in the model 3 varies with the higher education level of the entrepreneur, a result that holds in the full model (model 7). Model 5 does not provide support for hypothesis 3 that stated that the relationship between population density and entrepreneurial growth aspirations would vary with the entrepreneurship training, a result that holds in the full model (model 7). Finally, model 6 provides support for hypothesis 4. We find that the positive effect of population density observed in the model 3 varies with the owner-manager experience of the entrepreneur, a result that holds in the full model (model 7). Note that these results suggest that higher education and owner-manager experience may lead to a better understanding of the benefits and risks related to setting up a new firm in densely populated regions, whereas entrepreneurial training would not have such effect.

**Table 3.2**

Multilevel random intercept model predicting entrepreneurial growth aspirations

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
<i>Individual-level controls</i>							
Age		-0.005 (0.002) **	-0.005 (0.002) **	-0.005 (0.002) **	-0.005 (0.002) **	-0.005 (0.002) **	-0.005 (0.002) **
Gender		-0.116 (0.076)	-0.114 (0.076)	-0.110 (0.075)	-0.114 (0.075)	-0.114 (0.076)	-0.110 (0.075)
Opportunity perception		0.132 (0.074) *	0.130 (0.075) *	0.131 (0.075) *	0.126 (0.074) *	0.130 (0.074) *	0.127 (0.073) *
Fear of failure		0.062 (0.062)	0.066 (0.062)	0.067 (0.063)	0.073 (0.062)	0.064 (0.062)	0.069 (0.063)
Spanish nationality		0.095 (0.090)	0.096 (0.091)	0.092 (0.088)	0.097 (0.090)	0.097 (0.091)	0.093 (0.088)
Family size		-0.034 (0.020) *	-0.037 (0.020) *	-0.037 (0.020) *	-0.037 (0.020) *	-0.038 (0.020) *	-0.038 (0.020) *
Necessity entrepreneurship		-0.007 (0.080)	-0.002 (0.078)	0.004 (0.079)	0.001 (0.079)	-0.004 (0.078)	0.004 (0.078)
Year 2009		0.025 (0.108)	0.044 (0.131)	0.037 (0.130)	0.044 (0.130)	0.033 (0.124)	0.024 (0.121)
Year 2010		0.040 (0.088)	0.067 (0.109)	0.068 (0.107)	0.064 (0.108)	0.063 (0.106)	0.060 (0.103)
<i>Individual-level predictors</i>							
Higher education		0.105 (0.059) *	0.106 (0.060) *	0.119 (0.053) **	0.107 (0.060) *	0.109 (0.060) *	0.125 (0.053) **
Entrepreneurship training		0.141 (0.062) **	0.145 (0.062) **	0.145 (0.062) **	0.154 (0.059) **	0.141 (0.062) **	0.151 (0.060) **
Owner-manager of existing business		-0.700 (0.091) ***	-0.695 (0.089) ***	-0.691 (0.089) ***	-0.699 (0.087) ***	-0.688 (0.082) ***	-0.684 (0.078) ***
<i>Regional-level controls</i>							
Annual unemployment rate change			-0.023 (0.188)	-0.015 (0.188)	-0.027 (0.186)	-0.000 (0.193)	0.010 (0.191)
Annual population change			0.037 (0.054)	0.039 (0.053)	0.038 (0.053)	0.033 (0.054)	0.036 (0.053)
GDP/h			-0.012 (0.007) *	-0.013 (0.006) *	-0.012 (0.007) *	-0.013 (0.006) *	-0.014 (0.007) **
<i>Regional-level predictors</i>							
Population density			0.186 (0.077) **	0.114 (0.063) *	0.121 (0.102)	0.114 (0.094)	-0.044 (0.123)
<i>Interaction effects</i>							
Population density × Higher education				0.252 (0.117) **			0.280 (0.121) **
Population density × Entrepreneurship training					0.159 (0.131)		0.147 (0.122)
Population density × Owner-manager of existing business						0.195 (0.116) *	0.241 (0.110) **
<i>Random effects parameters</i>							
Intercept	0.633 (0.047) ***	1.152 (.275) ***	1.337 (0.327) ***	1.410 (.315) ***	1.399 (0.328) ***	1.438 (0.314) ***	1.447 (0.296) ***
Variance of random intercept	0.049 (0.032)	0.019 (0.014)	0.014 (0.012)	0.012 (0.012)	0.014 (0.012)	0.013 (0.012)	0.012 (0.012)
Variance of overall residual	0.606 (0.079)	0.410 (0.047)	0.408 (0.047)	0.407 (0.048)	0.408 (0.048)	0.408 (0.047)	0.405 (0.048)
Intra-class correlation	0.006	0.002	0.001	0.000	0.001	0.001	0.000
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N of observations	745	644	644	644	644	644	644
N of groups (provinces)	49	48	48	48	48	48	48
Wald chi square	–	1145.48 ***	1057.12 ***	1139.99 ***	1121.96 ***	1165.49 ***	2283.60 ***
Log Likelihood	-1024.367	-735.568	-732.100	-730.458	-731.391	-731.076	-728.335
Degrees of freedom	0	15	19	20	20	20	22
AIC <sup>a</sup>	2048.734	1501.136	1502.200	1500.916	1502.782	1502.152	1500.670

Notes: Table reports non-standardized β coefficients. Robust standard errors are in parentheses.

\* p< 0.10, \*\* p< 0.05, \*\*\* p< 0.001; two tailed significances.

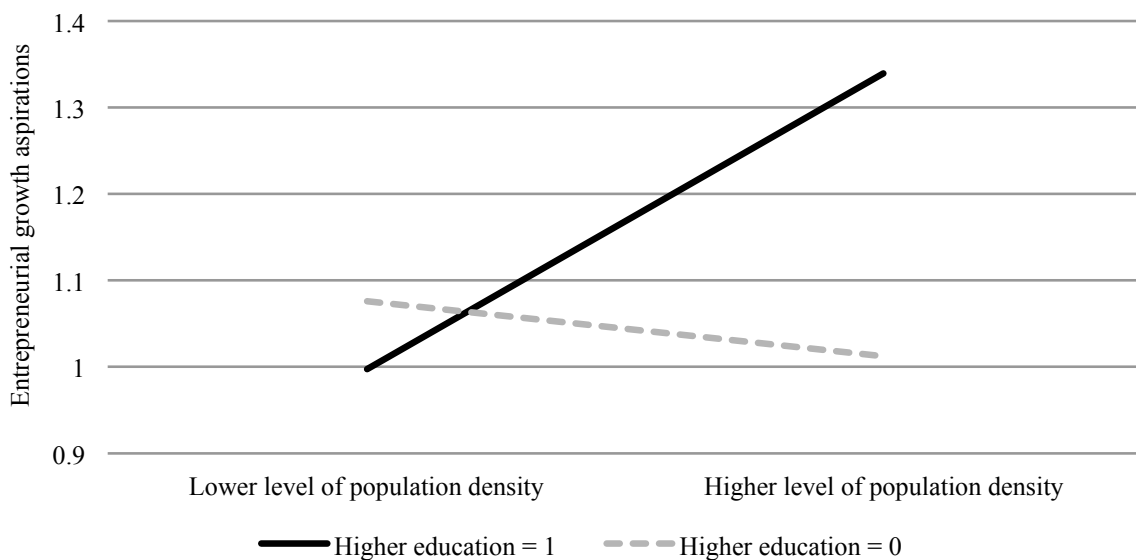
<sup>a</sup> AIC is Akaike's Information Criterion= 2k – 2 x (log likelihood), where k indicates the degrees of freedom.

To gauge a more precise understanding of these results, we present the corresponding interaction plots. Figure 3.2 and 3.3 depict the interaction effects of population density and higher education and population density and owner-manager experience on growth aspirations, respectively. It can be observed that, consistent with our prediction, the relationship between population density and growth aspirations changes with nascent entrepreneurs' educational level and prior owner-manager experience. In particular, growth aspirations in densely populated provinces tend to increase with the educational attainment

(i.e. higher education) and the previous owner-manager experience of nascent entrepreneurs. Interestingly, figure 3.3 shows that growth aspirations of nascent entrepreneurs who have previous entrepreneurial experience are smaller than those without such experience, irrespective of the regional population density. This result may be reflecting a negative impact of the economic crisis that owner-managers have probably experienced in their previous businesses, which may have adjusted their growth aspirations for existing and new businesses downwards.

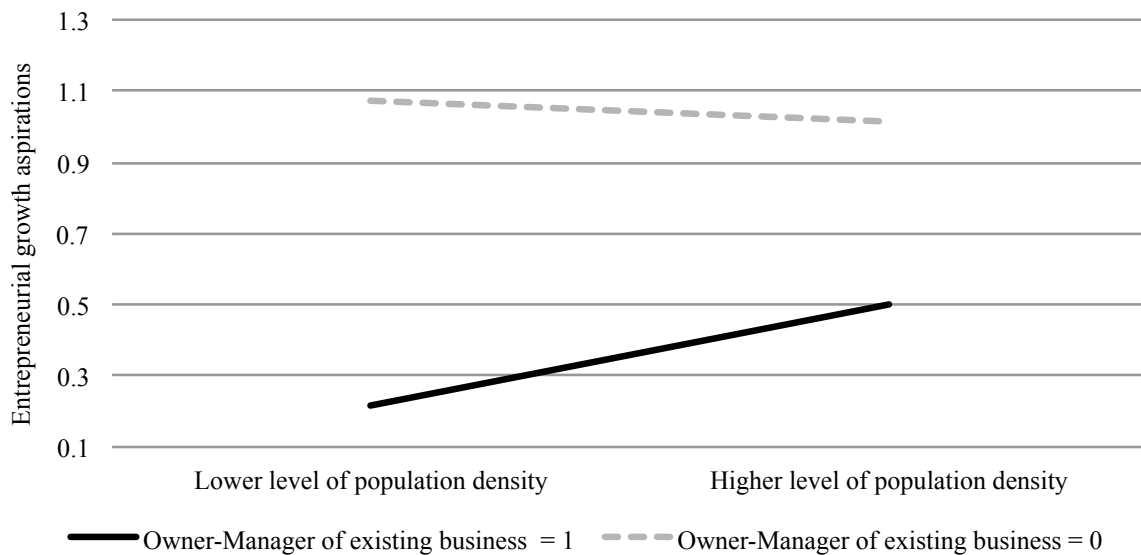
**Figure 3.2**

Moderating effect of higher education on the relationship between population density and entrepreneurial growth aspirations



**Figure 3.3**

Moderating effect of owner-manager experience on the relationship between population density and entrepreneurial growth aspirations



A number of control variables are found to be statistically significant. First, younger entrepreneurs are more likely to have higher growth aspirations, whereas the entrepreneurs' family size shows a negative influence on such aspirations. Additionally, results show that being in the manufacturing sector is positively related to aspirations. As per the regional variables, the GDP per capita has a negative influence on aspirations. This, somehow unexpected, result maybe reflects differences in the degree of industrialization of the provinces. It means that in regions with higher levels of GDP per capital, individuals are also more likely to perceive founding opportunities (Stuetzer et al., 2014) and therefore these regions are probably more industrialized ones. Nevertheless, provinces with low GDP per capita are also among the less industrialized ones. To the extent that new business may reflect the industry structure of the province, new ventures in less industrialized provinces may tend to be more labor intensive than those formed in more industrialized provinces. This may lead to entrepreneurs in less industrialized provinces to have greater aspirations for growth in the number of employees. Moreover, regarding the sector, those founders with industry experience will be more likely to stay on the industry segment they were before becoming self-employed (Dencker and Gruber, 2014).



### 3.4.1 Robustness tests

Some potential endogeneity concerns may be arising in our study. The province-year individual growth aspirations may be affected by some macro variables, such as unemployment and population rate. These two regional measures are closely related with the economic cycle and are likely to be influenced by the circumstantial effect of a given year. Consequently, we address this issue by calculating the change in the measure for the aforementioned two variables. Additionally, to investigate potential multicollinearity issues, we estimate the variance inflation factors (VIF) for all our variables. Values are in between 4.73 and 1.04, meaning that no serious multicollinearity problems exist. We follow strict standards that suggest values to be lower than 5 (Studenmund, 1997). Furthermore, tolerance values are all above 0.1, which indicate that variables do not suffer from multicollinearity (Autio et al., 2013).

We also should highlight that growth aspirations are only observed for those individuals who have been identified as nascent entrepreneurs. Consequently, there could be a possibility that self-selection to entrepreneurship might have biased our findings. In this vein, we also consider the bias caused by potential interdependence between the choice of whether to become an entrepreneur and growth aspirations, by introducing into the employment growth aspirations equation (second stage or outcome equation) the inverse Mill's ratio (IMR) based on modeling the choice to become a nascent entrepreneur (first stage or selection equation). To identify the first stage of the Heckman selection model, we chose a variable that is correlated with the first stage dependent variable (entrepreneurial entry) and uncorrelated with the second one (growth aspirations). Specifically, we use a variable capturing the social capital of the entrepreneur. This is originated from GEM data capturing if the individual knows personally another entrepreneur who has started up in the last two years. This variable would have an influence in the entry decision to entrepreneurship but it should not be relevant for growth aspirations of new firms according to our results. So, we introduce “knowing an entrepreneur” into the selection equation. Overall, we could not detect a significant selection bias arising from the possibility that the factors determining the decision to become an entrepreneur might differ from those determining a new firm's employment growth aspirations. In other words, the outcome of our hypothesis tests with and without the inclusion of IMR was unchanged (Autio et al., 2013; Estrin et al., 2013). These extra results are not reported here, but all of them available upon request.

### 3.5 DISCUSSION AND CONCLUSIONS

This chapter contributes to our knowledge about the formation of entrepreneurial growth aspirations by examining two under-researched but important issues: (1) the unique effects of regional population density, and (2) the joint effects of population density founder characteristics. We have used a rich data set that combines individual observations corresponding to nascent entrepreneurs from the Spanish GEM Adult Population Survey with regional data from the Spanish Statistic Institute. Our research extends prior research to show not only the tight connection between overall economic conditions and individual growth aspirations but also that such connection is contingent upon the human capital of the nascent entrepreneurs. In this regard, our results have highlighted the importance of higher education and prior entrepreneurial experience.

Our findings provide a number of important insights for the literature. First, we have confirmed our expectation that regional population density has a positive effect on the growth aspirations of nascent entrepreneurs. This finding points to the importance of local demand and access to resources for new businesses, since these entrepreneurs appear to assess whether their surrounding environment offers them the opportunity to grow their businesses. Furthermore, it is possible that the higher performance threshold required in densely populated areas tend to increase their aspirations to grow in the first few years of the new business. Overall, the regional context affects not only the start-up decision, as extensively shown by previous research (e.g. Malecki, 1997; Mueller et al., 2008; Bosma and Schutjens, 2011; Trettin and Welter, 2011) but also the aspirations (Kibler et al., 2014) of nascent entrepreneurs, as indicated by this study.

Second, this chapter shows that the positive impact of population density on entrepreneurial growth aspirations is shaped by the human capital endowments of entrepreneurs. Specifically, we observe that the effect of population density on growth aspirations varies with the higher education and the owner-manager experience of the entrepreneur. In effect, as advanced, the results show a positive impact of the joint effect of higher education and population density on entrepreneurial aspirations. Hence, we find support for the notion that university level education provides entrepreneur with knowledge and a mental frame that allow them to recognize that higher required performance threshold that is required in highly populated regions to compensate for a higher business failure risk. Similarly, the positive impact of the

joint effect of owner-manager experience and population density on entrepreneurial aspirations, would indicate that entrepreneurs with entrepreneurial and manager experience are, again, more likely to recognize that greater growth required in denser regions.

Our results show a positive impact of entrepreneurship training on growth aspirations. The resource-based theory of the firm suggests that the recognition of opportunities, learnt from entrepreneurship training, is a distinctive ability of individuals (Alvarez and Busenitz, 2001; Brush et al., 2001). However, unexpectedly, the joint effect of population density and entrepreneurship training is not statistically significant. The knowledge and skills gain by individuals in opportunity identification and exploitation through entrepreneurship training should allow trained entrepreneurs to discover and exploit “good” entrepreneurial opportunities, and recognize the greater performance threshold required in densely populated environments. But as noted, that is not the case. Together the results indicate that individuals who have received entrepreneurial training hold greater growth aspirations independent of the context, or at least independent of the population density of the region in which they live. The question to be elucidated is what drives such behavior. Is it the result of training that facilitates the discovery of opportunities even in less favorable environments? Or is it a reflection of an overconfidence bias (Koellinger et al., 2007)? Future research should try to answer these questions. The answer will have some important practical implication for those involved in entrepreneurship courses/training, such as business schools and governmental agencies. While research is needed to disentangle whether the growth aspirations of those who receive entrepreneurship training are accurate or not, it may be worth thinking about the extent to which entrepreneurship training nurtures an excess of entrepreneurs’ confidence in their capabilities. We should perhaps ask ourselves as educators to what extent we are feeding an overconfidence bias, in the sense that entrepreneurs who receive entrepreneurship training may tend to be overly optimistic about the prospects of their enterprises in the face of negative economic shocks.

Third, our results confirm (e.g. Autio and Acs, 2010; Stam et al., 2012) that higher education has a positive impact on the growth aspirations of nascent entrepreneurs. In this vein, the evidence sustains the notion that the opportunity costs of more educated individuals are higher and therefore will demand greater return from their entrepreneurial activities. Hence, they will launch new venture if their growth potential is high enough to offset their better

employment opportunities in the job market. This, probably coupled with their greater self-efficacy (Autio and Acs, 2010) leads to higher growth aspirations as compared to individuals with less education.

Fourth, entrepreneurs' owner-manager experience is the only personal variable (apart from age) that has a negative effect on entrepreneurial growth aspirations. This result indicates that there is a significant difference in the way the regional economic conditions impact aspiration when the entrepreneurs have owner or manager experience. This leads us to think that entrepreneurs with prior entrepreneurial or manager experience, and that have probably experienced, the economic impact of a recessive period, are more likely to adjust their growth aspirations ("downward") faster than other entrepreneurs.

This study is not free of limitations. These limitations open opportunities for relevant future research. Our research is based on data from a single country and for a three-year period. Hence, it would be necessary to test our conceptual model on the determinants of growth aspirations by using data from other countries and for a longer time period. Readers should also bear in mind that the time period analyzed coincides with a global economic recession. More favorable conditions could have strengthened or weakened the results. Additionally, while there is much value in examining the interactions between factors at the individual and regional level, future research should examine these issues by including national-level determinants.

The need for simplicity is reinforced by GEM's global character: binary scales help minimize bias caused by cultural interpretations (Autio et al., 2013). Dichotomous scales also reduce problems with translation equivalence (Ter Hofstede et al., 2002). Accordingly, we would also like to note that our moderating variables (i.e. higher education, entrepreneurship training and owner-manager experience) have been measured as binary outcomes for the reasons just presented. Interesting insights could be gained if future research accounts for the nature of higher education, the type of training (e.g. voluntary or compulsory training) and distinguishing clearly between entrepreneurial and manager experience.

## **CHAPTER IV: INFORMAL PLANNING ACTIVITIES IN THE EARLY YEARS OF NEW FIRMS: DETERMINANTS AND EFFECTS ON EMPLOYMENT GROWTH**

### **4.1 INTRODUCTION**

This chapter seeks to better understand why new firms undertake or not planning activities in their early years and what consequences result from it (Honig and Karlsson, 2013, 2004; Castrogiovanni, 1996). In doing so, it investigates the determinants of planning in new ventures and the relationship between different type of planners and growth. Planning activities can be considered to be one of the most widely regarded aspects of new venture management and are encouraged by educational institutions, entrepreneurship courses, and government agencies (Honig and Samuelsson, 2012; Burke et al., 2010, Honig and Karlsson, 2004). Yet, their effectiveness for firms, in general, and for emergence entrepreneurs, in particular, are still a matter of considerable debate, as the entrepreneurship research is inconclusive about the effect of business planning on the success of nascent organizations (e.g. Ansoff, 1991; Porter, 1980; Mintzber, 1990, 1994; Wiltbank et al. 2006; Honig and Samuelsson, 2014; Burke et al, 2010; Castrogiovanni, 1996).

Two theoretical perspectives have dominated the debate about the determinants of planning and its consequences for new firms. On the one hand, drawing on argument from a rational economic perfective, advocates of planning note that planning activities are the result of a rational process in which entrepreneurs gather and analyze information useful for exploiting a business opportunity (Delmar and Shane, 2003; Burke et al., 2010). They argue that the sound systematic analysis involved in planning is beneficial to firms' owners and managers as it involves gathering and analyzing information (e.g. industry situation, needs of potential customers, resources available) with the purpose of a more efficient use of entrepreneurs' scarce resources (Delmar and Shane, 2003, 2004; Chwolka and Raith, 2012). In this sense, planning, and the implied business plan, could be particularly helpful to increase growth (Smith, 1998; Burke et al., 2010).

On the other hand, drawing on arguments form the institutional perfective, other researchers postulate that entrepreneurs engage in planning activities just as a way to legitimate the new venture (Honig and Karlsson, 2004; Karlsson and Honig, 2009; Honig and Samuelsson,

2012). Planning activities can both cause interference with the efforts of firm founders (Bhidé, 2000) and take time away from other more valuable processes and organizing actions (Carter et al., 1996). From this point of view, it is noted that planning may bring a lack of flexibility (e.g. Bidhé, 2000; Honig and Karlsson, 2004). The planning process may well result in a very structured schedule that inhibits the capacity to make changes in the development of the business. Hence, rather than being beneficial, planning activities may be even harmful.

In line with this theoretical discussion, the empirical evidence with regard to the effect of planning on firm performance is also mixed. In fact, the quantitative synthesis of the empirical studies analyzing the business planning-performance relationship in new and established small businesses provided by Brinckmann et al. (2010) shows that the empirical findings have been fragmented and contradictory with respect to the existence and direction of that relationship. Some studies suggest that although formal business planning is rarely undertaken by small firms (Perry, 2001), if it is implemented properly, it would enhance their performance (Brinckmann et al., 2010). Therefore, firms using formal strategic planning would tend to perform better than those following a visionary or reactive approach to running the business (Smith, 1998). On the other hand, authors such as Honig and Karlsson (2004) and Honig and Samuelson (2012) failed to find any significant impact of planning activities on new venture performance.

Previous research has focused on whether or not entrepreneurs use written business plans (Honig and Karlsson, 2013, 2004; Burke et al. 2010; Brinckmann et al., 20010). However, this approach has been questioned as it may offset the importance of more informal planning activities from which entrepreneurs can also learn and generate value (Burke et al., 2010). In this chapter we contribute to the literature on entrepreneur's planning by focusing on "informal business plans" (Burke et al., 2010) or "basic business planning" (Brinckmann et al., 2010). We simply ask entrepreneurs to indicate whether or not they engage in planning activities (not if they have completed a written business plan). For new ventures the first years are usually fraught with a high degree of uncertainty and the necessity to make quick decisions (Bhidé, 1994). Under these circumstances, informal business planning, which also articulates goals and means of achieving these goals (Burke et al., 2010) and allows for a high degree of flexibility in making decisions, may be particularly valuable for firms. In this

sense, our chapter responds to the call for considering different gradation of business planning (Burke et al., 2010).

In this chapter we seek to better understand the informal planning behavior of entrepreneurs and its consequences. While the starting point is the usual dichotomy between those involved in planning activities and those who are not, the study of the planning behavior of entrepreneurs in a representative sample of 212 new firms in Navarra (Spain), that is further described later in the chapter, reveals that if the planning activities of the entrepreneurs are observed over time, not all entrepreneurs show a consistent behavior. Specifically, in this chapter we focus our attention on two key moments of a new venture' life: the first year of operation and once the firm has overcome the four-year hurdle that is often used to distinguish new from established businesses (Reynolds et al., 2005). Four different patterns emerge: systematic-planners (those who consistently plan over time), early-planners (those who engage in planning activities in the early moments of the firm's life but not later), late-planners (those who do not plan at the beginning but end up conducting planning activities a few years later) and non-planners (those who never get involved in planning activities). This new division is another interesting feature of our study.

Drawing on institutional theory and economic arguments (Delmar and Shane, 2003, 2004; Honig and Karlsson, 2004; Shane and Delmar, 2004; Gruber, 2007; Karlsson and Honig, 2009) we develop a framework that explains the occurrence of these four different planning profiles. Rather than rivals, we see these two theoretical perspectives as complementary, and its combination a necessary step to progress in this particular line of inquiry. The logic that underlines our framework posits that not all entrepreneurs are sensitive to institutional pressures to plan, and that such sensitiveness may change over time. Additionally, not all entrepreneurs face the same business and environmental conditions, nor are these conditions constant over time. Therefore, the differences in institutional pressures and economic conditions explain the differences in planning profiles.

Using the same theoretical lenses we later explore the relationship between the planning behavior of the entrepreneurs at the beginning of their endeavor and after four or five years, and the growth experienced over that period. In this chapter, we argue that being a systematic planner, will have a positive impact on employment growth in the early years of a firm activity. Engaging systematically in "informal" planning activities will have some of the

advantages of “a formal approach” to planning, allowing, at the same time, a high degree of flexibility in making decisions and using resources. Being an early or late planner will also benefit firm growth, but to a lesser extent than being a systematic planner.

Finally, it has to be noted that the sample employed in the empirical analyses comes from new ventures in a Spanish province and represents the first evidence concerning the planning-performance relationship coming from Spain. The relevance of this issue is rooted in the importance of a national culture for the planning-performance relationship observed by Brickmann et al. (2010). According to their evidence, this relationship tends to weaken as the degree of uncertainty avoidance in the country increases. Spain rates higher than USA, UK and Canada on this particular cultural dimension (Hofstede and Hofstede, 2005). Hence, this chapter contributes to the accumulated evidence on the consequences of planning across different cultural settings. An additional interesting feature of our study is that our sample is comprised of micro firms (i.e. less than 10 employees). This kind of firms are seldom explored in the literature on planning. However, their study is relevant since they represent about 92 per cent of all firms in the non-agricultural sectors in Europe (Johnson, 2007) and may be an important generator of jobs and a significant conduit for innovation and productivity growth. In addition, micro firms have distinctive business characteristics in relation to management style (e.g. planning) that make it logical for them to be studied as a separate group.

The remainder of the chapter is structured as follows. In the next section, we present the details of the sample selection procedure and, based on the observation of entrepreneurs’ planning behavior on two different moments in time, we describe four different planning profiles. We then develop a theoretical framework that aims to explain the existence of the observed different planning behaviors, as well as to provide predictions about the performance implications of those different planning profiles. Next, we explain the variables and the methods used to test the hypotheses. Then, the results are presented. The discussion and the conclusions close the chapter.

## **4.2 DATA: SAMPLE SELECTION AND DEFINITIONS**

### **4.2.1 Sample selection procedure**

To gauge a more accurate knowledge about the informal planning activities of entrepreneurs we analyze the information obtained from a survey of founders of new firms in the



manufacturing and service sectors in Navarra. Navarra is one of the 52 provinces of Spain<sup>5</sup>. Its economic development level (GDP, level of industrialization and unemployment rates) was at the European Union average at the time of the data collection. More specifically, the analysis study focuses on micro firms (fewer than 10 employees at inception) because, as is the case in most countries and regions across the world, the vast majority of firms created in Navarra are micro firms (Sanz et al., 2009). Moreover, firms with fewer than 10 employees are the most common type in the entire population of firms operating in Navarra and in Spain.

The data collection process was time consuming and organized in three main stages. First, in line with Karlsson and Honig (2009), an initial list of the population of new ventures founded in 2000 and 2001 that were still in business in 2005 was compiled from official records of the Government of Navarra. More specifically, we combined the information contained in the Census of New Establishments and the Register for Tax on Economic Activities.<sup>6</sup> As its name suggests, the former contains a list of all the establishments opened in Navarra in a given year. Firms have to specify whether or not the establishment belongs to an existing firm or it is entirely new. The Register for Tax on Economic Activities, on the other hand, provides a list of the firms that have paid the required tax on economic activities in a certain year. Firms cannot be active if they do not pay tax on each of the activities they perform. Therefore, in order to identify new firms it was necessary to check whether or not each firm was already active in business.

Combining both data sources we were able to obtain an initial list of firms founded in Navarra in 2000 and 2001. We established that all the new firms derived from the Census of New Establishments were also present in the Register for Tax on Economic Activities. Since normal contractual agreements in the construction and transportation sectors might generate entries in both data sources that are not really new firms, we removed those two sectors from our study. In particular, it is common for construction firms to create a new firm to take part in a specific construction project. In the transportation sector, self-employment is an alternative to the regular employment contract, and it is common for self-employed workers

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<sup>5</sup> Spanish provinces are classified as NUTS-3 in Eurostat. The Nomenclature of Territorial Units for Statistics (NUTS, for the French nomenclature d'unités territoriales statistiques) is a geocode standard for referencing the administrative divisions of countries for statistical purposes within the European Union.

<sup>6</sup> Their official names are, respectively, *Censo de Apertura de Centros de Trabajo* and *Altas del Impuesto de Actividades Económicas*.

to work entirely for a single firm. Eliminating the firms that did not pay the tax on economic activities in 2005 or earlier further refined our list. Because of the specific nature of this tax, those firms that are or want to be active in business only pay it. Thus, after this elimination process, we obtained an initial list of firms founded in Navarra in 2000 and 2001 that were still active in business in 2005.

Having compiled this list, in the second stage, telephone interviews were conducted with the firms' founders. The interviews established whether they were effectively wholly new ventures started in 2000 and 2001, independent of external control (not subsidiaries, franchises or part of larger enterprises) or just the result of changes in their legal status, and were still in operation. A total of 485 firms were identified and constituted our target population for the third and final stage of our data collection process.

In the third stage, face-to-face interviews were arranged with the firms' founders. Respondents answered a structured interview questionnaire, administered at their normal place of work. A total of 224 entrepreneurs were successfully contacted and agreed to participate (46.2 percent response rate). Ten of the respondents had founded firms with more than 10 workers at inception; these observations were removed from the sample. As will be shown next, the rate of firm creation in the agricultural sector is much smaller than in other sectors. This fact was correctly captured in our sample, with only two firms belonging to that sector. Because of their low significance we decided to remove agricultural firms from our analyses, resulting in a final sample of 205 entrepreneurs and their firms operating in the manufacturing and service sectors (43.7 percent of our target population).<sup>7</sup> Its inclusion does not affect our results and conclusions.

#### **4.2.2 Definitions of entrepreneurs' planning profiles**

The common ground in the research on the planning activities of entrepreneurs is to consider two groups of individuals: those who are involved in planning activities and those who are

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<sup>7</sup> Our sample is representative of the target population of new firms created in 2000 and 2001 that were still in business in 2005. To check its representativeness, chi-square and t tests between the sample of surveyed firms and the rest of the population of eligible ventures were performed. The results showed no statistically significant differences at the 5% level, in terms of industry sector and firm size, between those who participated in the study and those that did not. For instance, the percentage of microfirms in the sample of firms that participated in the face-to-face interviews was 95.5%, which is fully consistent with the percentages of microfirms reported in other statistical analyses. Moreover, the distribution of firms across five major industries closely resembles that of the population: 0.4% of the firms in the sample belong to the agricultural sector, 22.3% to manufacturing, 23.1% to commerce, 17.6% to hospitality and the remaining 36.6% to other services. The respective percentages in our target population are 0.2%, 24%, 24.8%, 17.7% and 33.2%. Finally, there are no differences between the sample and the target population in the average number of workers at inception.

not (Brickman et al., 2010). This may lead to think that these two groups remain stable and that with few exceptions those who get involved in planning continue doing so, and that those who do not plan keep themselves outside that activity. However, the literature has already acknowledged that entrepreneurs may change and adapt their plans over the years (Honig and Samuelsson, 2012). It has also been argued that entrepreneurs do not have to face a choice between planning and adapting, suggesting that they can combine both (Bhidé, 2000; Burke et al., 2010). In addition, it has been suggested that planning, particularly written business plans, may be more likely to occur at the early stages of venture creation (Hmieleski and Corbett, 2008; Burke et al., 2010). Therefore, it is likely that some entrepreneurs combine periods in which they rely on planning with others in which they show “trial and error” or “improvisation” behaviors. By the same token, others may be more consistent in trusting or distrusting planning over the years.

Using the information from the survey described above we looked at the planning activity of firms at two moments in time: the first year of operation and once the firm has survived the initial four years. The survey instrument simply asked entrepreneurs to indicate whether or not they engaged in planning activities during the first year. As we were interested in informal or basic planning the question did not specify whether that plan finally resulted in a written document. In this sense, our question was more process oriented than output oriented. According to the results obtained by Brinckmann et al. (2010) this will not result in any significant bias since there are not significant differences between process and output measures of planning. Similarly, the questionnaire included a question asking whether or not the firm was currently involved in planning activities (year 2005) - that is, whether the firm was planning four or five years after inception.

We analyzed the information provided by the entrepreneurs and observed that the planning behavior of entrepreneurs changes over time. That is, some entrepreneurs that were planning at the beginning did not continue engaging in planning four or five years later. Others that were not planning at inception admit that they engage in planning activities few years later. Joint with this we observe some entrepreneurs that maintain a more consistent planning behavior in the two moments in time measured in the survey. That is, they either plan or do not plan. Specifically, and based on the responses about their planning activities, four planning profiles could be identified. Those that answered “no” to these two questions were

coded as non-planners. If they indicated that they planned in the first year of operation but not at the present time, we labeled them early planners. If the answer to the first question was “no” but the answer to the second was “yes”, entrepreneurs were classified as late planners. These last two profiles seem to show adaptive planning behavior. Finally, those who answered affirmatively to both questions were identified as systematic planners. Table 4.1 summarizes these profiles.

**Table 4.1**  
Planning profiles

		<i>Planned the first year of operation?</i>	
		<b>Yes</b>	<b>No</b>
<i>Plans now (survived the four-year hurdle)?</i>	<b>Yes</b>	Systematic planner	Late planner
	<b>No</b>	Early planner	Non-planner

The proportion of these four profiles in the sample is as follows. The most common profile is the non-planner. They account for 52.2 percent of the sample. Hence, more than half of the entrepreneurs in this sample admit that they never engaged in planning activities. Early planners account for 15.8 percent of the sample, while late planners add another 13.4 percent. Hence 29.2 percent of the sample shows adaptive planning behavior. Finally, the remaining 18.6 percent of the sample are systematic planners. Hence, while 70.8 percent of entrepreneurs show a consistent planning behavior on the early years of existence, which a highly significant proportion of them no planning at all, there is also a significant percentage of entrepreneurs who change their planning behavior. This evidence demands some caution about classifications that simply consider entrepreneurs as either planners or non-planners. Their attitude towards planning activities seems to be, in a significant number of cases, more complex.

Having seen this, a question arises: which are the factors that explain the occurrence of these different informal planning behaviors? Is the observed informal planning behavior the

response to a specific combination of elements? In the next section, we develop several hypotheses connecting institutional and economic factors with the different informal planning profiles, as well as about the implications of those profiles for new venture performance.

#### **4.3 HYPOTHESES DEVELOPMENT**

##### **4.3.1 What explains the planning profile of an entrepreneur?**

Two independent, and to some extent rival, streams of research have looked at the reasons why entrepreneurs plan (Honig and Samuelsson, 2014): one tends to view planning as a rational choice-based process and the other explains planning as a response to institutional forces. With regard to the later, authors such as Honig and Karlsson (2013, 2004) and Karlsson and Honig (2009) argue that entrepreneurs are subject to significant pressures to plan. Such pressures may come from different sources (DiMaggio and Powell, 1983) such as the educational system (normative pressures), which highlights the relevance of the planning approach, government agencies (coercive pressure), which consider planning activities as a necessary step in the process of business creation or the necessity to imitate successful firms (mimetic pressure) (Oliver, 1991; DiMaggio and Powell, 1983; Haunschild, 1994; Haverman, 1993). Entrepreneurs who show acquiescence (Oliver, 1991) with these pressures, involving themselves in planning activities, seek to legitimate their businesses. These entrepreneurs would not necessarily see planning as a valid instrument to run their business and to exploit the potential of the new venture. Business planning would simply legitimate the firm in the market and that will improve the terms upon which the new venture may undertake transactions with other actors, enabling the entrepreneur to obtain credit or the legal permissions necessary to launch and maintain their businesses.

Acquiescence with institutional pressures towards planning is not the only possible response to those pressures (Oliver, 1991; Zimmerman and Zeitz, 2002). Firms may, for example, ignore such pressures or, if they are powerful enough, even engage in manipulation activities to alter institutional processes (Karlsson and Honig, 2009). The final response to these pressures towards planning will depend on the entrepreneur's perception of the existence of such pressures (Murillo-Luna et al., 2008). Hence, from an institutional perspective we may expect different responses from different entrepreneurs to pressures to engage in planning activities. This would translate essentially into entrepreneurs who get involved in planning activities and entrepreneurs who do not.

On the other hand, based on the arguments from the stream of research that views planning as a rational choice-based process, it could be argued that entrepreneurs will decide to engage in planning because of the economic benefits attached to it (Chwolka and Raith, 2012). In other words, entrepreneurs will plan because they see it as having an economic value in itself that goes beyond the benefit of the legitimacy that planning may provide. According to the planning school, planning will allow a much better use of the new venture's scarce resources (Brickmann et al., 2010). Furthermore, the benefits of planning would be more salient in certain circumstances. For example, it has been suggested that planning activities may be beneficial in dealing with the uncertainty involving new firms, particularly if entrepreneurs focus on information gathering and speed up the planning task (Gruber, 2007). It may also be seen as a valid instrument when the entrepreneur faces a difficult business situation and therefore feels the need to obtain information and analyze it to understand what is happening in order to find solutions. We believe this latter situation is key to understanding the planning behavior of entrepreneurs, and consequently we focus on that particular aspect in developing our hypotheses.

We contend that rather than being conflicting forces both, the institutional pressures and firms' business difficulties, are important to understand entrepreneurs' planning behavior. The different occurrence and incidence of those two forces may help explain the four planning profiles described earlier. We can expect that those entrepreneurs influenced by institutional pressures will engage in business planning activities since the very beginning. Further, to the extent that institutional forces still present over time, entrepreneurs sensitive to them will be more likely to engage in planning activities. Therefore, these entrepreneurs will see business planning as a prerequisite to doing things and legitimize what they do. In addition, entrepreneurs, who are convinced of the benefits of planning once they have experienced it, will also resort to planning in response to a difficult business situation. Business difficulties are a specific kind of external uncertainty. Business planning is commonly employed to reduce uncertainty (Gelderen et al., 2000) and therefore it may be an adequate response to deal with business difficulties. Hence, both institutional and business difficulties reasons may be both playing a role in the manifestation of the systematic planner behavior.

Institutional pressures to develop planning activities are particularly strong in the early stages of a new firm. In this early stage the firm is new in the market, and consequently the entrepreneur and the new firm are almost unknown. This creates an information asymmetry situation between the entrepreneur and the owners of resources needed to launch and run the new firm (Capelleras et al., 2011). Resource providers will demand information about the quality and the prospects of the new venture, and even about the capabilities of its founders. This will further nourish, in this early stage, the pressures towards getting involved in planning activities (Honig and Karlsson, 2004). In this context there will be entrepreneurs who acknowledge such strong pressures and decide to show acquiescence and engage in planning activities in order to gain legitimacy when they enter the market. However, once the new venture has overcome its very initial period, and pressures to plan to some extent decrease, there may be entrepreneurs who decide to no longer carry out planning activities. If not affected by eventual business difficulties, these entrepreneurs may not plan again giving rise to the appearance of the early-planner profile. Therefore, unlike business difficulties, institutional pressures would be related with and early-planner behavior.

Entrepreneurs may or may not show acquiescence with institutional pressures toward planning. Those who do not respond to these pressures to get involved in planning activities may show two different profiles depending on whether they see an economic value to those planning activities. It is probable that these entrepreneurs will consider the potential benefits that planning activities may bring to their firm in the face of business difficulties. Thus, those entrepreneurs who are not influenced by institutional pressures towards planning but who have experienced business difficulties are likely to show a late-planner profile. Non-planners would be entrepreneurs who are not influenced by pressures towards planning and have not experienced business difficulties.

The preceding paragraphs indicate that; if we compare the factors, institutional and economic, differences emerge that explain each planning profile. In particular, we expect to observe that systematic planners will be influenced by institutional pressures and business difficulties. The former will also play a salient role in the case of early planners and the latter in the case of late-planners. The following three hypotheses summarize these expectations.

*Hypothesis 1: Systematic planners are influenced by both institutional pressures and business difficulties.*

*Hypothesis 2: Early planners are influenced only by institutional factors.*

*Hypothesis 3: Late planners are influenced only by business difficulties.*

### **4.3.2 The effect of planning activities on employment growth**

Getting involved in planning activities may be crucial for the development of new small firms (Brinckmann et al., 2010). As previously stated, showing acquiescence with pressures to plan may bring the new firm legitimacy. Such legitimacy may help the new firm to obtain the necessary resources to growth. In a sense, conducting planning activities may send a valuable signal in a market for resources characterized by information asymmetries (Capelleras et al., 2011).

But planning activities also allow entrepreneurs to speed up venture development as it offers a means to anticipate difficulties and information needs that the firm may face in the future, as well as to manage the supply and demand in product and venture development (Delmar and Shane, 2003). In addition, planning activities allow the entrepreneur to analyze systematically all aspects of the new venture, including the need for modifications to the new product, the convenience to focus on a particular demand segment, and so on (Chwolka and Raith, 2012). Therefore, plans help firms and managers to sort things out. This provides firms and entrepreneurs with an organized way of doing things. Having a method reduces the probability of forgetting key steps and pieces of information.

However, formalized planning may also introduce rigidities and inflexibility into firms (Mintzberg, 1994; Perry, 2001), and flexibility may have a value for firms (Rudd et al., 2008). This is particularly true in uncertain situations. According to effectuation theory (Sarasvathy, 2008), in situations of uncertainty and information scarcity predictive formal planning techniques are less effective for new firms' survival and performance. New firms, specially in uncertain contexts, need to remain flexible in order to cope with environmental turbulence (Rudd et al., 2008). As noted in the Introduction, informal or basic business planning (Burke et al., 2010; Brinckmann et al., 2010), in comparison with formal planning, allows for a high degree of flexibility in making decisions. This is particularly valuable for the first year of new firms, when they face high degrees of environmental uncertainty. Under these circumstances, basic business planning, which permits quick decisions making and rapid initiation of actions (Burke et al., 2010), can result in higher degrees of adaptation to



external changes and higher performance. Furthermore, controlling resources that can be used flexibly is another key element in the success of small firms during the first years (Gelderen et al., 2000). This may be particularly true for micro firms, given the resource constraints (financial, time, experience, etc.) they suffer.

The above reasons leads us to expect, on the one hand, that those entrepreneurs who carry out basic business planning activities in the early years of new firms will obtain a better performance than those who do not plan at all and, on the other hand, that systematic entrepreneurs will benefit the most from planning. Formally stated:

*Hypothesis 4: Systematic planners show the highest level of employment growth among those entrepreneurs who carry out informal planning activities, who, in turn, show better performance than non-planners.*

## **4.4 METHODS**

### **4.4.1 Variable measurement**

*Firm performance.* Previous studies on the relationship between planning and firm performance have usually employed growth measures (Brinckman et al., 2010). A common growth measure in the entrepreneurship literature is employment growth (Burke et al., 2010; Capelleras et al., 2011), as it is less commercially sensitive (Cooper et al., 1994) and less likely to be manipulated by owners in order to minimize taxable income (Nicholls-Nixon et al., 2000). In addition, founders of tightly managed firms are usually reluctant to provide information about sales and profits (Capelleras et al., 2011). Hence, we measure firm performance through employment growth. Specifically, we compute the natural logarithm of the ratio of the number of employees in the year 2005 to the number of employees at inception. We use this measure as a dependent variable in the growth equation.<sup>8</sup>

*Entrepreneur's planning profile.* Based on the information described in the second section of the chapter, we create three dummy variables that capture whether the entrepreneur is either a systematic-planner, an early-planner or a later-planner. Following the standard procedure we do not define a dummy variable for the fourth profile, non-planners, which is therefore considered as the reference category.

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<sup>8</sup> The basic conclusions of the analysis do not change if employment growth is measured in absolute or relative terms.

*Institutional pressures.* We follow Honig and Karlsson (2004), who identified three main sources of institutional pressures: government, education system and industrial field. The first exerts a coercive pressure, while the second and the third are, respectively, normative and mimetic forces that push new firms to engage in planning activities. Government pressures are measured through a variable labeled *public external support*, which is a dummy variable that takes the value one if the firm received public external support of any kind at inception, and zero otherwise (Honig and Karlsson, 2004). Pressures towards planning stemming from the education system are captured through two variables: *higher education* and *business-related education at inception*. The first is a dummy variable that takes the value one if the founder has a university degree or higher, and zero otherwise. The second is also a dummy variable that indicates whether the entrepreneur has received any kind of management education prior to creating the firm (one) or not (zero). Finally, also akin to Honig and Karlsson (2004), industry-driven isomorphism is captured by a dummy variable labeled *manufacturing*. It takes the value one if the firm belongs to the manufacturing sector, and zero otherwise. These authors state that manufacturing firms are more likely to undertake similar mimetic planning activities than firms in other sector, as their fundamental processes are well established and do not have too much variance (e.g. producing a refinery). In addition, planning is widely used among manufacturing firms (Honig and Karlsson, 2013). Therefore, one would expect a positive effect of the variable *manufacturing* on planning, as mimetic behavior leads new entrants to imitate well-established, successful organizations.

*Business difficulties.* The survey questionnaire asked whether or not the firm faced difficulties during the first year of operation. Based on their responses, we create a dummy variable that takes the value one if the new business suffered any problem at inception, and zero otherwise.

*Control variables.* Based on previous work on the determinants of entrepreneurial planning and performance, (Wiklund and Shepherd, 2003; Shane and Delmar, 2004; Honig and Samuelsson, 2012), we include several control variables. These control variables used in the present study can be divided into individual and firm level control variables. At the individual level we first control for *gender* including a dummy variable that takes the value one if the founder was male, and zero if female. We also include the founder's *age*. Next, *experience* is measured by two independent but related variables: *years of experience* in the sector

(industrial experience) and the *number of firms* he or she had previously owned (entrepreneurial experience). Then, we identify whether or not the founder is a *necessity entrepreneur* through a dummy variable that takes the value one if the interviewee reports that being unemployed was one of the reasons for creating the firm, and zero otherwise. Finally, we analyze *prior family business exposure*. Having entrepreneurs in the family may facilitate access to resources and provide experience and role models that may influence the individual's planning behavior and even firm growth. *Prior family business exposure* is captured through a dummy variable that takes the value one when the founder has had an entrepreneur in the family, and zero otherwise (Carr and Sequeira, 2007).

For firm-level determinants we consider the following variables: *firm size at inception* measured by the number of employees when the firm was created and the firm's *legal status* both at inception and currently. In particular, we distinguish between limited liability (value one) and non-limited liability forms (value zero). We also seek to capture the strategic activities of the firm. Following earlier research on the determinants of small business growth (Davidsson et al., 2006; Gilbert et al., 2006), we create another dummy variable to identify whether (value one) or not (value zero) the firm has introduced new products (*introduction of new products*). Finally, in addition to the control variables just described, in the analyses of the performance implications of the different planning profiles we also control for firm financial structure (Wiklund and Shepherd, 2003; Burke et al., 2010). *Financial structure* is a dummy variable that takes the value one if the main source of funds at inception was the entrepreneur's personal savings, and zero otherwise.

#### **4.4.2 Methodological approach**

Our data structure is a (yearly) pooled cross-sectional time series (Dencker and Gruber, 2014). Thus, this chapter investigates the determinants of planning activities among entrepreneurs, as well as the impact of that activity on firm performance. Given the categorical nature of the dependent variable used to test Hypotheses 1, 2 and 3, we use a multinomial logit analysis that enables us to study and compare the determinants of the four planning profiles described before. We estimate three equations. Specifically, each equation estimates whether or not the institutional (higher education, business education at inception, public external support and industry) and economic (business difficulties) factors under

consideration are significant determinants of the different planning profiles, as compared with the reference category: the non-planner.

To test Hypothesis 4 we estimate a multivariate model using Ordinary Least Square (OLS), in which firm growth is the dependent variable and the different planning profiles are independent variables. To avoid heteroskedasticity, we use robust standard errors in all the multivariate estimations. It is worth noting that we also ran separate treatment and instrumental variables regressions to account for the potential endogenous character of the different planning profiles.

## 4.5 RESULTS

Table 4.2 shows the mean and standard deviations of each of the variables described above, as well as the corresponding Pearson's correlations. The average entrepreneur in our sample was a non-graduate 41 year-old male, with 9.1 years of experience in the sector when the firm was started, and with family members who were also entrepreneurs. In terms of the variables that capture institutional pressures, 35.9 percent of the entrepreneurs had higher education (university degree), while 21.8 percent had business-related education at inception. In addition, 40.6 percent of entrepreneurs in the sample received public support, while 23 percent were operating in the manufacturing sector. We found that most of the entrepreneurs in our sample (67.3 percent) experienced difficulties when they launched the new venture, which reflects the risk of new business initiatives.

**Table 4.2**

**Descriptive statistics and correlation matrix**

	Mean	S.D.	1	2	3	4	5	6	7	8	9
1. Gender	0.704	0.457	1.000								
2. Age	41.327	9.014	0.128**	1.000							
3. Higher education	0.359	0.480	0.041	-0.050	1.000						
4. Business-related education at inception	0.218	0.414	0.086	0.058	0.354***	1.000					
5. Years of experience	9.165	9.219	0.225***	0.442***	-0.074	0.011	1.000				
6. Number of firms	0.655	1.255	0.162**	0.317***	-0.016	0.058	0.243***	1.000			
7. Necessity entrepreneur	0.064	0.245	-0.117*	-0.021	-0.026	-0.020	-0.107*	-0.059	1.000		
8. Family business exposure	0.585	0.493	-0.079	-0.056	0.141**	0.160**	-0.010	0.010	-0.114*	1.000	
9. Manufacturing	0.227	0.419	0.117*	0.136**	-0.015	-0.005	0.055	-0.021	0.013	-0.003	1.000
10. Introduction of new products	0.605	0.489	0.115*	-0.091	0.252***	0.128**	-0.045	-0.055	-0.089	0.039	-0.029
11. Financial structure	0.371	0.484	0.113	0.132	0.083	0.106	0.103	0.042	0.036	0.151	0.048
12. Firm size at inception	0.954	0.778	0.098	0.117*	0.046	0.052	0.178**	0.224***	-0.000	0.056	0.190**
13. Legal status at inception	0.357	0.480	-0.276***	-0.098	-0.247***	-0.135**	-0.021	-0.154**	-0.025	-0.043	-0.246***
14. Legal status now	0.341	0.475	-0.301***	-0.086	-0.241***	-0.118*	-0.029	-0.158**	-0.016	-0.002	-0.231***
15. Public external support	0.406	0.492	-0.195**	-0.183**	0.127**	0.013	-0.246***	-0.163**	0.148**	-0.136**	0.093
16. Business difficulties	0.673	0.469	0.033	-0.017	0.116*	0.040	-0.031	0.067	0.008	0.105	0.154**
17. Early planner	0.157	0.365	-0.043	0.053	0.043	0.042	0.036	0.115*	0.028	-0.036	-0.044
18. Late planner	0.133	0.340	0.113*	-0.034	0.153**	0.026	0.038	-0.044	-0.100	0.182**	0.075
19. Systematic planner	0.186	0.390	0.129**	0.148**	0.265***	0.229***	0.013	0.229***	0.008	0.016	-0.031
20. Non-planner	0.522	0.500	-0.145**	-0.132**	-0.341***	-0.226***	-0.063	-0.234***	0.040	-0.110*	0.005
21. Firm growth	0.455	0.625	0.105	-0.081	0.208**	0.028	-0.005	-0.014	-0.068	-0.013	0.211***

	10	11	12	13	14	15	16	17	18	19	20	21
10. Introduction of new products	1.000											
11. Financial structure	0.043	1.000										
12. Firm size at inception	-0.073	-0.033	1.000									
13. Legal status at inception	-0.177	-0.080	-0.348***	1.000								
14. Legal status now	-0.189**	-0.090	-0.359***	0.947***	1.000							
15. Public external support	-0.046	-0.008	0.006	-0.001	0.026	1.000						
16. Business difficulties	0.185	0.027	0.179**	-0.132**	-0.121*	0.022	1.000					
17. Early planner	-0.031	0.032	-0.052	-0.018	-0.004	0.231***	-0.075	1.000				
18. Late planner	0.126**	0.067	0.058	-0.148**	-0.162	-0.057	0.172**	-0.170**	1.000			
19. Systematic planner	0.157**	-0.036	0.271***	-0.276***	-0.284***	0.029	0.134**	-0.207**	-0.187**	1.000		
20. Non-planner	-0.186**	-0.040	-0.213***	0.331***	0.336***	-0.152**	-0.167**	-0.452***	-0.410***	-0.500***	1.000	
21. Firm growth	0.248***	-0.015	-0.102	-0.237***	-0.265***	0.018	0.199**	-0.021	0.145**	0.110*	-0.168**	1.000

Note: \* p< 0.10, \*\* p< 0.05, \*\*\* p< 0.001

Table 4.2 shows mixed evidence for the relationship between institutional and economic factors and planning profiles, with positive, negative and non-significant correlations. The correlations between the profiles and firm performance indicate, consistent with Hypothesis 4, that being a non-planner will harm firm growth relative to other types of profile.

Table 4.3 summarizes the results of the multinomial models estimated to test Hypotheses 1, 2 and 3.

**Table 4.3**  
Multinomial logit models determining entrepreneur's planning profile

Variables	Early planner	Late planner	Systematic planner
<i>Individual controls</i>			
Gender	-0.350 (0.529)	1.687 (0.784) **	0.293 (0.601)
Age	0.051 (0.029) *	-0.010 (0.034)	0.085 (0.039) **
Years of experience	0.013 (0.023)	0.029 (0.326)	-0.035 (0.029)
Number of firms	0.503 (0.240) **	0.126 (0.283)	0.551 (0.286) *
Necessity entrepreneur	-0.379 (0.928)	-15.051 (0.746) ***	-0.463 (0.752)
Family business exposure	0.251 (0.516)	1.425 (0.549) **	0.404 (0.555)
Firm size at inception	0.181 (0.390)	0.695 (0.393) *	1.032 (0.441) **
Legal status at inception	-0.685 (0.53)	-0.866 (0.568)	-1.857 (0.686) **
Introduction of new products	0.176 (0.498)	0.827 (0.566)	1.195 (0.699) *
<i>Institutional predictors</i>			
Public external support	2.265 (0.613) ***	0.575 (0.526)	1.204 (0.637) *
Higher education	1.032 (0.505) **	1.308 (0.552) **	1.413 (0.544) **
Business-related education at inception	0.004 (0.591)	-0.107 (0.777)	0.592 (0.634)
Manufacturing	-1.107 (0.680)	0.212 (0.520)	-1.334 (0.578) **
Business difficulties	-0.430 (0.486)	1.634 (0.704) **	0.759 (0.541)
N	205		
Wald chi square	956.12***		
Pseudo R <sup>2</sup>	0.277		

Notes: Table reports non-standardized  $\beta$  coefficients. Robust standard errors are in parentheses. Non-planner set as a reference category.

\* p< 0.10, \*\* p< 0.05, \*\*\* p< 0.001; two tailed significances.

As noted, multinomial logit estimates indicate whether or not the institutional and economic factors under consideration are significant determinants of the different planning profiles, compared with the reference category. As can be seen in Table 4.3, in the case of systematic planners, there is a significant influence of three out of four variables measuring institutional forces towards planning. There is support for the advanced positive effect of governmental and educational forces. However, the industry effect is negative, meaning that, contrary to what it was expected; being in a manufacturing enterprise diminishes the likelihood of becoming a systematic planner, relative to the non-planner profile. As stated, our data come from a survey of new micro firms. It is likely that these micro firms enter the market following a very different strategy from that of their established competitors. Indeed, many new firms focus on niche markets (Bhidé, 2000). Doing so successfully requires new special knowledge and technologies (Ardichvili et al., 2003), new modes of operation and flexible structures. Information about such resources might be hardly available (Brinckmann et al., 2010), which renders planning difficult. However, established competitor can use their prior experience to plan successfully. This may lead new firms not to mimic practices widely used by their already established competitors, such as planning by manufacturing firms (Honig and Karlsson, 2004). This may explain the negative effect of *manufacturing*. On the other hand, the effect of the variable indicating the existence of difficulties at inception is not significant. Taken together, we receive no support for hypothesis 1, since only institutional pressures explain a systematic planning behavior.

Hypothesis 2 is supported, since the influence of public external support and higher education for early planner have the expected positive and significant effect. The lack of significance of manufacturing would be explained by the small size of the firms of our data set. Nevertheless, hypothesis 3 receives no support. As expected, the effect of the variable indicating the existence of difficulties at inception for late planners is statically significant but, unexpectedly, higher education is also statistically significant. Therefore, there is no support for the notion that only economic factors have an influence on late-planners.

Taken globally, the results on the determinants of the different planning profiles indicate that both institutional and economic factors are important, with non-planner entrepreneurs being relatively more isolated from the influence of those forces. However, although such factors have an influence, the way that influence occurs is more complex than anticipated in our framework. We return to this issue in the discussion section.



Table 4.4 shows the results of the OLS estimation for the equation that relates the four different planning profiles to firm performance (i.e. employment growth). Because the planning profiles are mutually exclusive, one must be taken out of the equation to act as the reference category. In this case, non-planner is considered the reference category. The results indicate that late-planner and systematic-planner profiles increase performance. The coefficient for early planners is non-significant.

It can be also observed that the coefficient for late planners is greater than for systematic planners. Does it mean that planning only now is better for firm growth than planning consistently over time? To answer this question we ran a Fischer test to study whether those two coefficients are significantly different from each other. The results of the test indicate that they are not significantly different. Hence, we conclude that systematic planning and current planning activities positively influence firm growth. Overall, the results provide partial support for Hypothesis 4, as it has been confirmed that planning systematically and once the micro firm has been able to survive its very initial period is beneficial for firm growth. However, our results do not support the superiority of planning only at the very beginning over not planning at all.

**Table 4.4**

OLS regression predicting the effect of entrepreneurs' planning profiles on employment growth

Variables	Growth model
<i>Individual and Institutional controls predictors</i>	
Gender	0.009 (0.084)
Age	-0.010 (0.005) **
Higher education	0.071 (0.101)
Business-related education at inception	-0.095 (0.119)
Years of experience	0.003 (0.004)
Number of firms	-0.005 (0.062)
Family business exposure	-0.088 (0.083)
Manufacturing	0.249 (0.112) **
Legal status now	-0.234 (0.089) **
Introduction of new products	0.135 (0.082)
Financial structure	-0.023 (0.093)
Firm size at inception	-0.183 (0.070) **
<i>Type of entrepreneur</i>	
Early planner	0.102 (0.112)
Late planner	0.331 (0.141) **
Systematic planner	0.270 (0.151) *
N	193
F	3.61***
R <sup>2</sup>	0.198

*Notes:* Table reports non-standardized  $\beta$  coefficients. Robust standard errors are in parentheses.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.001$ ; two tailed significances.

#### 4.5.1 Robustness tests

We also considered the potentially endogenous character of the planning profiles. The results, not reported here, are fully consistent with the OLS estimations shown in the chapter. We estimated a series of four treatment regressions in which, in addition to the performance equation, we model the planning profile that is then treated as an endogenous variable. The Wald test of independent equations shows no selection effect. We also estimated instrumental-variables (IV) regressions and used variables that have been shown to be statistically more relevant in the multinomial logit models as instruments of entrepreneurs' planning profiles: age, higher education, public external support and firm size at inception. Wooldridge's score test robust to heteroskedasticity cannot reject the null hypothesis that variables (i.e entrepreneurs' planning profiles) are exogenous at conventional levels ( $p=0.1484$ ). In addition, Wooldridge's score test of overidentifying restrictions robust to heteroskedasticity cannot reject the null hypothesis that our instruments are valid at conventional levels ( $p=0.3325$ ) (Cameron and Trivedi, 2009). Therefore endogeneity is not

an issue. Furthermore, the results of the influence of planning profiles in firm performance are consistent with those obtained from the OLS estimations reported here.

#### **4.6 DISCUSSION AND CONCLUSIONS**

In this chapter, we seek to contribute to the scarce literature on the determinants and consequences of entrepreneur's informal, or basic, planning behavior. Taking into account whether entrepreneurs engage or not on informal planning activities in two key moments of new firms' lives: the first year of operation and once the firm has been able to survive the first four/five years, we have observed the existence of four different planning profiles: systematic planners, early planners, late planners and non-planners. This evidence is interesting as it shows that entrepreneurs' involvement in informal planning activities changes over time. Hence the usual non-planner categorization may be too simple and lead to inaccurate conclusions.

Drawing on institutional and economic arguments we have firstly aimed at understanding the determinants of these four planning profiles. Our results show that early planners (i.e. those entrepreneurs who only carry out planning activities at inception) are influenced only by institutional factors. Receiving public support from public agencies (coercive pressure) and higher education (normative pressure) has a positive effect on the likelihood of being an early-planner. Taken together, these influences indicate that early planners engage in planning activities as a means of gaining legitimacy from their stakeholders (customers, employees, etc.) (Honig and Karlsson, 2004; 2013). Legitimacy is a critical resource in overcoming the "liability of newness" (Aldrich, 1999; Honig and Samuelsson, 2012), mainly through aligning the new venture's activities and forms with its environment (Aldrich and Ruef, 2006). In this sense, engaging in planning activities would be useful for new firms for their value in conferring and signaling prestige, status, quantity and capability.

Results have also shown that only institutional pressures influence the likelihood of being a systematic planner. However, both economic factors (business difficulties) and normative institutional pressures (higher education) are positively associated with being a late planner. This suggests that late planners may consider planning not only a means of gaining legitimacy, but also a useful management tool for facing business difficulties. Altogether, these results confirm the relevance of institutional forces in explaining the involvement of founders of micro firms in planning activities.

In line with our framework it seems clear that the combination of institutional and economic (i.e. business problems) is necessary to comprehend the different informal planning profiles identified in this chapter. However, the incidence and relative influence of those forces is a bit more complex than anticipated in our framework, particularly the effect of the normative institutional forces that can be linked with education. Higher education favors the informal planning activities of early and systematic planners, but also those of late planners. On the contrary business related education received at inception has no effect. Thus, higher education reveals as a powerful force, which influence goes beyond the normative role that has been assigned to it in previous literature (e.g. Karlsson and Honig, 2009). Maybe, albeit a bit speculative, the content and methods of university level studies predisposes students to analyze information, find different courses of action and to think about the potential outcomes of those courses of action, and therefore makes students more prone to involve in informal planning activities.

In this chapter, we also seek to understand better the relationship between informal planning activities and firm growth. In doing so, we have analyzed the impact of the planning profiles on new firms employment growth. The results show that employment firm growth is positively influenced by systematic-planner and late-planner profiles. However, planning only at inception does not have any impact of firm growth. These results indicate that planning activities, even if they are informal, may yield benefits, in our case in terms of high growth, for new firms. Getting involved in informal planning activities may not only be a means to gain legitimacy in a market for resources hampered by information asymmetries, but also to provide a proper response to business difficulties. Of course, it could also be argued for the opposite: growth leads to planning. Those who exhibit higher growth would realize the need to involve in planning activities, due to the business difficulties associated to growth, and would do so. While the nature of our data does not allow us to completely rule out this possibility, it is worth noting that it does not invalidate our argument that the involvement of founders of new firms in planning activities helps firm development. That is, if growth generates difficulties to the owners of new businesses, engaging in planning activities may help the founders of those new firms to properly manage and consolidate that growth.

The results and conclusions of the chapter hold implications for practitioners and policy makers too. Those two collectives should note that informal or basic planning activities yield

benefits for the firm that go beyond legitimization. They can be a really useful tool for management and not a simple external requirement. However, practitioners and policy makers also need to realize that there may be an optimal level of planning. Therefore, they should take into account when to engage in informal planning activities and how much time and resources to invest in it. The key would be spending the appropriate amount of resources, and not forgetting to combine planning and action. Policy makers and, more specifically, public support agencies are sometimes “blamed” for promoting the implementation of business planning among entrepreneurs per se. Some of the results of our study seem to confirm this idea as in some cases entrepreneurs (i.e. early entrepreneurs) may engage in these activities just to show acquiescence with such pressures (Karlsson and Honig, 2009). In this sense, public support agencies should put in place efforts to help entrepreneurs to comprehend the real usefulness of planning, and the potential benefits beyond legitimacy.

This study is not free of limitations. First of all, it posits a question that is longitudinal in nature but has employed the information obtained from a survey questionnaire run in a single period of time. We have attempted to capture the time dimension by asking about the planning activities conducted at inception and after the first four/five years of the firm’s life (at the time when the survey was run). We also asked respondents to provide us with the number of employees at the beginning and now (i.e. once the firm has survived for at least four years). This approach may raise concerns about hindsight bias. However, questions were about specific actions that were objective and therefore easier to remember after a four-year period. In addition, the results on other aspects of nascent entrepreneurship using a longitudinal research design have shown that information obtained from designs like ours yields valid results (Davidsson, 2006).

A second aspect of our data set and analyses that needs to be highlighted is that the questionnaire was designed to study the growth of surviving firms. Therefore our focus was not on the factors that determine new firm survival, but on the growth rate of those that have stayed in the market for a minimum period of time. In this sense the results should be understood as supporting the benefits of informal planning for the growth of surviving new ventures. Hence, our chapter complements other studies that find that planning can reduce the probability of small firm failure (Perry, 2001). The study also deliberately focused on micro firms, the most common type of start-up. In doing so we left aside a small proportion of new firms that, because of larger size, would be more likely to rely on planning. Their exclusion

may have influenced the results. However, a precise analysis of the bias that our study design may have introduced should be the focus of future research, as this is beyond the scope of the current study.

Finally, we should note three further limitations related to the measures employed in the study. Firstly, and as in other studies about planning (e.g. Honig and Samuelsson, 2012), we have no information regarding the content, depth or quality of the planning activities. Such information is difficult to obtain and would require a closer monitoring of entrepreneurs in real time, or a meticulous examination of planning activities. Nonetheless, we agree with those who believe that an effort to examine the quality of plans and their relative impact would be a worthwhile contribution. Secondly, our measure of business difficulties refers only to the first year since inception. Although, in the case of new ventures, problems tend to appear during the first year after the firm joins the market, it cannot be denied that difficulties may also appear in subsequent years. Business difficulties should trigger a response in the form of planning activities, but in our data set the information about these difficulties refers only to the first year of operation and not to the whole period. This focus may have limited the significance of the variable intended to capture whether or not the firm faced economic obstacles. This variable is more important for late planners than for early planners, who we have noted seem to engage in early planning activities as a response to coercive and normative institutional pressures. Late planners, on the other hand, decide to ignore coercive pressures, and do not plan at inception but may plan later as a response to difficulties during their first year of operations (these business difficulties may be a consequence of firm growth). The experience of having faced those obstacles may have led late planners to comprehend the real value of planning, and consequently to have freely decided to fully engage in such activities in subsequent periods. Third, the previous literature (e.g. Honig and Karlsson, 2004) has argued that manufacturing firms are more likely to undertake similar mimetic planning activities than other sectors, since planning, as a management tool, is more extensively used in manufacturing than in other sectors. This would lead new manufacturing firms frequently to engage in planning activities as an attempt to gain legitimacy. But the results are not consistent with this expectation. We have noted that it may be caused in part by the micro nature of the firms in our sample that seek for new ways to compete. Additionally, the manufacturing dummy may be also capturing other sector level factors beyond the intended mimetic forces.

In conclusion, we have observed a significant variation in the way entrepreneurs approach planning activities over time. Rather than being the result of a random process, this behavior seems to be explained by institutional and economic factors. Overall, we have shown that engaging in planning activities is beneficial for the growth of surviving new ventures.

## **CHAPTER V: GENERAL CONCLUDING REMARKS OF THE THESIS**

Along this dissertation we could fairly see that entrepreneurship was an important and relevant field of research (Shane and Venkataram, 2000). Almost without exception, research on entrepreneurship has been motivated by the economic benefits of entrepreneurship (van Praag and Versloot, 2007). In this regard, the topic of firm growth has attracted much interest among entrepreneurship scholars (Delmar et al., 2003; McKelvie and Wiklund, 2010) because of the employment creation power of entrepreneurs over their counterparts (van Praag and Versloot, 2007).

Although there is no single overriding measure of new venture growth (Gilbert et al., 2006), this thesis has considered employment creation as a most suitable measure for our analyses, given the data availability.

On the one hand, a new venture with employment growth is fortified with new human capital allowing its targets to be pursued (Gilbert et al., 2006). Accordingly, characteristics of educational background (Sapienza and Grimm, 1997), prior related industry experience (Baum et al., 2001) and prior entrepreneurial or start-up experience (Box et al., 1993) have recognized a positive effect on employment of new firms. On the other hand, location of the new venture has an important role in new venture creation meaning that survival rates will depend on the geographic location of the firm (Lechner and Dowling, 2005). In other words, new venture creation is closely linked to both job creation and regional development (Acs and Armington, 2006). Drawing in this basis, this dissertation has been divided in three chapters examining determinants of new venture growth phases. Specifically: start-up size, growth aspirations and realized firm growth. Particularly, as a claim of recent research we have adopted throughout this dissertation multilevel perspectives taking into account the individual and her contextual-level influences on entrepreneurial growth (Wright and Stigliani, 2012). We have focused on the study of the founders' characteristics (individual social environment, human capital and organizational skills) and the context where the new venture is taking place (regional social environment, regional economic environment and institutional context). Motivated by the need to better understand employment creation and regional development main findings and implication from each chapter are discussed below.

Chapter II has analyzed that while new ventures tend to be bigger in provinces where there are bigger firms, the number of established entrepreneurs had not significant impact.



Furthermore, we observed that knowing an entrepreneur reduced the impact of potential social references on the size of new ventures. Also we have observed that the impact that region level potential social referents may have on new entrepreneurs weakens or even vanishes, when the new entrepreneur personally knew other entrepreneurs in its close network. The idea was that those close social referents were more influential than the potential social ones, and that therefore any influence of the later ones on the new entrepreneur was reduced. In a nutshell, close social referents not only would have weakened the effect of potential social referents on the size of new businesses, but also would, by itself, have favored the creation of smaller businesses.

In the chapter III the main contribution has focused on two under-researched but important issues: (1) the unique effects of regional population density, and (2) the joint effects of population density founder characteristics. First, we found that the importance of local demand and access to resources for new businesses. Second, this chapter showed that the positive impact of population density on entrepreneurial growth aspirations was shaped by the human capital endowments of entrepreneurs. In other words, we observed that the effect of population density on growth aspirations varied with the higher education and the owner-manager experience of the entrepreneur.

Finally in chapter IV, we aspired to better understand the relationship between informal planning activities and firm performance by considering that entrepreneurs' planning behavior change over time. Results indicated that planning activities, even if they are informal, might have yield benefits, in our case in terms of high growth, for new firms. Overall, in line with the debate, planning activities are likely to be beneficial for new ventures, and more specifically for growth. In particular, the chapter reveals that being a systematic planner or a late planner are the two most beneficial postures on planning.

Main findings derived from this dissertation have important implications for policy makers. Chapter II had shown that there was a connection between the characteristics of the businesses run by regional level referents and the features of the new businesses. Specifically we have focused on a key firm level characteristic: its size. We believe that this line of inquiry should be further explored in future research. It would be advisable to keep working on the effect of the characteristics of social referents in other aspects of small firm growth such as actual firm growth or growth aspirations across industries. For example, do the characteristics of social referents, such as the growth strategy they followed, influence the

growth aspirations and actual growth of new ventures? Given the proven impact that growth aspirations may have on actual firm growth (e.g. Wiklund and Shepherd, 2003; Wiklund et al., 2003), a further understanding of the impact of social referents in these other facets of firm growth may be of interest, not only for academics, but also for practitioners and policy makers. In chapter III results indicate that individuals who have received entrepreneurial training hold greater growth aspirations independent of the context, or at least independent of the population density of the region in which they live becoming overoptimistic. The question to be elucidated is what drives such behavior. Future research should try to answer these questions. The answer will have some important practical implication for those involved in entrepreneurship courses/training, such as business schools and governmental agencies. Finally in chapter IV results and conclusions of the study hold implications for practitioners and policy makers too. Those two collectives should note that informal or basic planning activities yield benefits for the firm that go beyond legitimization. They can be a really useful tool for management and not a simple external requirement. However, practitioners and policy makers also need to realize that there may be an optimal level of planning. Therefore, they should take into account when to engage in informal planning activities and how much time and resources to invest in it. The key would be spending the appropriate amount of resources, and not forgetting to combine planning and action. Policy makers and, more specifically, public support agencies are sometimes “blamed” for promoting the implementation of business planning among entrepreneurs per se. Some of the results of our study seem to confirm this idea as in some cases entrepreneurs (i.e. early entrepreneurs) may engage in these activities just to show acquiescence with such pressures (Karlsson and Honig, 2009). In this sense, public support agencies should put in place efforts to help entrepreneurs to comprehend the real usefulness of planning, and the potential benefits beyond legitimacy.

To conclude, in line with implications for policy development coming out from Wright and Stigliani (2012) work, this thesis also suggests the need to develop more fine-grained policies in order to improve the success prospects for support for growth. Consequently, policy makers should increase their awareness about employment creation that is emerging through entrepreneurial activities and manage programs accordingly (Estrin et al., 2013).

## REFERENCES

- Acs, Z. J. and Armington, C. (2006). *Entrepreneurship, geography and American economic growth*. New York, NY: Cambridge University Press.
- Adams, J. S. (1963). Toward an understanding of inequity. *Journal of Abnormal and Social Psychology*, 67: 422-436.
- Adams, J. S. (1965). *Inequity in social exchange*. In: Berkowitz, L. (Ed.) *Advances in Experimental Social Psychology*, Vol. 2, Academic Press, York.
- Aguinis, H., Beaty, J. C., Boik, R. J. and Pierce, C. A. (2005). Effect size and power in assessing moderating effects of categorical variables using multiple regression: A 30-year review. *Journal of Applied Psychology*, 90: 94-107.
- Aguinis, H., Gottfredson, R. K. and Wright, T. A. (2011). Best-practice recommendations for estimating interaction effects using meta-analysis. *Journal of Organizational Behavior*, 32: 1033-1043.
- Aguinis, H., Gottfredson, R. K. and Culpepper, S. A. (2013). Best-Practice Recommendations for Estimating Cross-Level Interaction Effects Using Multilevel Modeling. *Journal of Management*, XX (X): 1-39.
- Aldrich, H. and Auster, E.R. (1986). Even dwarfs started small: liabilities of age and size and their strategic implications. *Research in Organizational Behavior*, 8: 165-198.
- Aldrich, H. E. and Wiedenmayer, G. (1993). From traits to rates: an ecological perspective on organizational foundings. In: Katz, J. and Brockhaus, R. (Eds.). *Advances in Entrepreneurship, Firm Emergence, and Growth*, Vol 1. JAI Press. Greenwich, CT, 145-195.
- Aldrich, H. (1999). *Organizations Evolving*. London, Sage Publications.
- Aldrich, H. E. and Ruef, M. (2006). *Organizations evolving* (2nd ed.). London: Sage.
- Álvarez, C., Urbano, D. and Amorós, J. E. (2014). GEM research: achievements and challenges. *Small Business Economics*, 42: 445-465.
- Alvarez, S. A. and Busenitz, L. W. (2001). The entrepreneurship of resource-based theory. *Journal of Management*, 6: 755-775.
- Amorós, J. E., Bosma, N. and Levie, J. (2013). Ten years of Global Entrepreneurship Monitor: accomplishments and prospects. *International Journal of Entrepreneurial Venturing*, 5 (2): 120-152.
- Ansoff, I. (1991). Critique of Henry Mintzberg's "The design school: reconsidering the basic premises of strategic management". *Strategic Management Journal*, 12 (6): 449-461.

- Ardichvili, A., Cardozo, R. and Ray, S. (2003). A theory of entrepreneurial opportunity identification and development. *Journal of Business Venturing*, 18 (1): 105-123.
- Armington C. and Acs Z. J. (2002). The determinants of regional variation in new firm formation. *Regional Studies*, 36: 33-45.
- Audretsch, D. B. and Fritsch, M. (1994). The geography of firm births in Germany. *Regional Studies*, 28 (4): 359-365.
- Audretsch, D. B., Santarelli, E. and Vivarelli, M. (1999). Start-up size and industrial dynamics: some evidence from Italian manufacturing. *International Journal of Industrial Organization*, 17: 965-983.
- Autio, E. and Acs, Z. (2010). Intellectual property protection and the formation of entrepreneurial aspirations. *Strategic Entrepreneurship Journal*, 4: 234-251.
- Autio, E. and Wennberg, K. (2010). You think, therefore, I become: Social attitudes and the transition to entrepreneurship. working paper presented at the DRUID summer conference. Retrieved October 22, 2010, from [www2.druid.dk/conferences/viewpaper.php?id=501642&cf=43](http://www2.druid.dk/conferences/viewpaper.php?id=501642&cf=43)
- Autio, E., Pathak, S. and Wennberg, K (2013). Consequences of cultural practices for entrepreneurial behaviors. *Journal of International Business Studies*, 44: 334-362.
- Baron, R. A. and Markman, G. D. (2003). Beyond social capital: The role of entrepreneurs' social competence in their financial success. *Journal of Business Venturing*, 18 (1): 41-60.
- Batjargal, B. (2003). Social capital and entrepreneurial performance in Russia: A longitudinal study. *Organization Studies*, 24: 535-556.
- Baum, J. R., Locke, E. A. and Smith, K. G. (2001). A multidimensional model of venture growth. *Academy of Management Journal*, 44 (2): 292-303.
- Baumol, W., Litan, R. and Schramm, C. (2007). *Good Capitalism, Bad Capitalism, and the Economic of Growth and Prosperity*, Yale University Press, New Haven.
- Becker, G. S. (1964). *Human capital*. Chicago: University of Chicago Press.
- Bergmann, H. and Sternberg, R. (2007). The Changing Face of Entrepreneurship in Germany. *Small Business Economics*, 28: 205-221.
- Bergmann, H., Mueller, S. and Schrettle, T. (2014). The use of global entrepreneurship monitor data in academic research: a critical inventory and future potentials. *International Journal of Entrepreneurial Venturing*, 6 (3): 242-276.
- Bhidé, A. (1994). How entrepreneurs craft strategies that work. *Harvard Business Review*, March-April, 150-161.

- Bhidé, A. (2000). *The Origin and Evolution of New Businesses*. Oxford University Press, New York.
- Blanchflower, D. G. and Oswald, A. J. (1998). What makes an entrepreneur? *Journal of Labor Economics*, 16: 26-60.
- Blanchflower, D.G., (2000). Self-employment in OECD countries. *Labour Economics* 7: 471-505.
- Bosma, N., Stel A., and Suddle, K. (2008). The geography of new firm formation: evidence from independent start-ups and new subsidiaries in the Netherlands. *International Entrepreneurship and Management Journal*, 4: 129-146.
- Bosma, N. and Schutjens, V. (2011). Understanding regional variation in entrepreneurial activity and entrepreneurial attitude in Europe. *The Annals of Regional Science* 47: 711-742.
- Bosma, N., Hessels, J., Schutjens, V., van Praag, M. and Verheul, I. (2012). Entrepreneurship and role models. *Journal of Economic Psychology*, 33: 410-424.
- Bosma, N. and Sternberg, R. (2014). Entrepreneurship as an Urban Event? Empirical Evidence from European Cities. *Regional Studies*, 48: 1016-1033.
- Brinckmann, J., Grichnik, D. and Kapsa, D. (2010). Should entrepreneurs plan or just storm the castle? A meta-analysis on contextual factors impacting the business planning-performance relationship in small firms. *Journal of Business Venturing*, 25: 24-40.
- Brush, C. G., Greene, P. G. and Hart, M. M. (2001). From initial idea to unique advantage: the entrepreneurial challenge of constructing a resource base. *Academy of Management Executive*, 15 (1): 64-78.
- Burke, A., Fraser, S. and Greene, F. J. (2010). The multiple effects of business planning on new venture performance. *Journal of Management Studies*, 47: 391-415.
- Byrne, D. (1971). *The Attraction Paradigm*. New York: Academic Press.
- Cameron, A. and Trivedi, P. (2009). *Microeconomics using Stata*. Stata Press. College Station, Texas.
- Capelleras, J-L, Mole, K. F., Greene, F. J. and Storey, D. J. (2008). Do more heavily regulated economies have poorer performing new ventures? Evidence from Britain and Spain. *Journal of International Business Studies*, 39: 688-704.
- Capelleras, J-L. and Greene, F. J. (2008). The determinants and growth implications of venture creation speed. *Entrepreneurship and Regional Development*, 20 (4): 311-337.

- Capelleras, J-L., Greene, F. J., Kantis, H. and Rabetino, R. (2010). Venture creation speed and subsequent growth: Evidence from South America. *Journal of Small Business Management*, 48 (3): 302-324.
- Capelleras, J-L, Contín-Pilart, I. and Larraza-Kintana, M. (2011). Publicly funded prestart support for new firms: who demands it and how it affects their employment growth. *Environment and Planning C: Government and Policy*, 29: 821-847.
- Capelleras, J-L., Contín-Pilart, I., Larraza-Kintana, M. and Martin-Sanchez, V. (2016). Unemployment and entrepreneurial growth aspirations: the moderating role of education. *Strategic Change*, forthcoming.
- Carlsson, B., Braunerhjelm, P., McKelvey, M., Olofsson, C., Persson, L. and Ylinenpää, H. (2013). The evolving domain of entrepreneurship research. *Small Business Economics*, 41: 913-930.
- Carr, J. C. and Sequeira, J. M. (2007). Prior family business exposure as intergenerational influence and entrepreneurial intent: a theory of planned behaviour approach. *Journal of Business Research*, 60: 1090-1098.
- Carter, N. M., Gartner, W. B. and Reynolds, P. D. (1996). Exploring start-up event sequences. *Journal of Business Venturing*, 11: 151-166.
- Cassar, G. (2010). Are individuals entering self-employment overly-optimistic? An empirical test of plans and projections on nascent entrepreneur expectations. *Strategic Management Journal*, 31 (8): 822-840.
- Casson, M. (1982). *The entrepreneur: An economic theory*. Totowa, NJ: Barnes & Noble Books.
- Castrogiovanni, G. (1996). Pre-startup planning and the survival of new small businesses: Theoretical linkages. *Journal of Management*, 22: 801-822.
- Chwolka, A. and Raith, M. G. (2012). The value of business planning before start-up - A decision theoretical perspective. *Journal of Business Venturing*, 27: 385-399.
- Cliff, J. (1998). Does one size fit all? Exploring the relationship between attitudes towards growth, gender, and business size. *Journal of Business Venturing*, 13 (6): 523-542.
- Cliff, J. E., Jennings, P. D. and Greenwood, R. (2006). New to the game and questioning the rules: the experiences and beliefs of founders who start imitative versus innovative firms. *Journal of Business Venturing*, 21: 633-663.
- Colombo, M. G., Delmastro, M. and Grilli, L. (2004). Entrepreneurs' human capital and the start-up size of new technology-based firms. *International Journal of Industrial Organization*, 22: 1183-1211.

- Colombo, M. G. and Grilli, L. (2005). Founders' human capital and the growth of new technology based firms: a competence-based view. *Research Policy*, 34: 795-816.
- Contín-Pilart, I. and Larraza-Kintana, M. (2015). Do Entrepreneurial Role Models Influence the Nascent Entrepreneurial Activity of Immigrants? *Journal of Small Business Management*, forthcoming.
- Cooper, A. C., Gimeno-Gascon, F. J. and Woo, C. Y. (1994). Initial human and financial capital predictors of new venture performance. *Journal of Business Venturing*, 9: 371-395.
- Dalh, M. S. and Sorenson, O. (2009). The embedded entrepreneur. *European Management Review*, 6: 172-181.
- Davidsson, P. (1991). Continued Entrepreneurship: ability, need, and opportunity as determinants of small firm growth. *Journal of Business Venturing*, 6: 405-429.
- Davidsson, P. (2006). Nascent entrepreneurship: empirical studies and developments. *Foundations and Trends in Entrepreneurship*, 2: 1-76.
- Davidsson, P., Achtenhagen, L. and Naldi, L. (2006). *What do we know about small firm growth?* In: Parker, S. (Ed.), *The life cycle of entrepreneurial ventures*. New York: Springer, 361-398.
- Delmar, F. and Shane, S. (2003). Does business planning facilitate the development of new ventures? *Strategic Management Journal*, 24: 1165-1185.
- Delmar, F., Davidsson, P. and Gartner, W. (2003). Arriving at the high-growth firm. *Journal of Business Venturing*, 18: 189-216.
- Delmar, F. and Shane, S. (2004). Legitimizing first: organizing activities and the survival of new ventures. *Journal of Business Venturing*, 19: 385-410.
- Delmar, F. and Wiklund, J. (2008). The effect of small business managers' growth motivation on firm growth: A longitudinal study. *Entrepreneurship Theory and Practice*, 32 (3): 437-457.
- Delmar, F. and Wennberg, K. (2010). *The birth, growth, and demise of entrepreneurial firms in the knowledge intensive economy*. Cheltenham: Edward Elgar.
- Dencker, J., Gruber, M. and Shah, S. (2009). Individual and opportunity factors influencing job creation in new firms. *Academy of Management Journal*, 52: 1125-1147.
- Dencker, J. and Gruber, M. (2014). The Effects of Opportunities and Founder Experience on New Firm Performance. *Strategic Management Journal*, forthcoming.
- De Clercq, D. and Arenius, P. (2006). The role of knowledge in business start-up activity. *International Small Business Journal*, 24 (4): 339-358.

- DeTienne, D. R. and Chandler, G. N. (2004). Opportunity identification and its role in the entrepreneurial classroom: a pedagogical approach and empirical test. *Academy of Management Learning and Education*, 3: 242-257.
- DiMaggio, P. and Powell, W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48: 147-160.
- Dittrich, J. E. and Carrell, M. R. (1979). Organizational equity perceptions, employee job satisfaction, and departmental absence and turnover rates. *Organizational Behavior and Human Performance*, 24 (2): 9-40.
- Douglas, E. J. (2013). Reconstructing entrepreneurial intentions to identify predisposition for growth. *Journal of Business Venturing*, 28: 633-651.
- Dutta, D. and Thornhill S. (2008). The evolution of growth intentions: toward a cognition-based model. *Journal of Business Venturing*, 23: 307-332.
- Estrin, S. and Mickiewicz, T. (2011). Institutions and female entrepreneurship. *Small Business Economics*, 37 (4): 397-415.
- Estrin, S., Korosteleva, J. and Mickiewicz, T. (2013). Which institutions encourage entrepreneurial growth aspirations? *Journal of Business Venturing*, 28: 564-580.
- European Commission (2014). Eurostat 2013. Retrieved May 02, 2014, from <http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/>
- Fernandez, R. M., Castilla, E. J. and Moore, P. (2000). Social capital at work: Networks and employment at a phone center. *American Journal of Sociology*, 105 (5): 1288-1356.
- Fiet, J. and Barney, J. (2002). The systematic search for entrepreneurial discoveries. *New York: Quorum*.
- Figueiro, O. Guimaraes, P. and Woodward, D. (2002). Home-field advantage: locations decisions of Portuguese entrepreneurs. *Journal of Urban Economics*, 52: 341-361.
- Fischer, E. and Reuber, A. R. (2003). Support for rapid-growth firms: a comparison of the views of founders, government policymakers, and private sector resource providers. *Journal of Small Business Management*, 41 (4): 346-365.
- Florin, J., Lubatkin, M. and Schulze, W. (2003). A social capital model of high growth ventures. *Academy of Management Journal*, 46 (3): 374-384.
- Forbes, D. (2005). Managerial Determinants of Decision Speed in New Ventures. *Strategic Management Journal*, 26: 355-366.
- Foss, N. J. and Klein, P. G. (2012). Organizing entrepreneurial judgment. *Cambridge: Cambridge University Press*.



- Frenken, K. and Boschma, R. A. (2007). A theoretical framework for evolutionary economic geography: industrial dynamics and urban growth as a branching process. *Journal of Economic Geography*, 7 (5): 635-649.
- Fritsch M. (1997). New firms and regional employment change. *Small Business Economics* 9: 437-448.
- Fritsch, M. and Falck, O. (2007). New business formation by industry over space and time: A multi-dimensional analysis. *Regional Studies*, 41 (2): 157–172.
- Fritsch, M. and Storey, D. J. (2014). Entrepreneurship in a regional context: Historical roots, recent developments and future challenges. *Regional Studies*, 48 (6): 939-954.
- Gelderen, M., Frese, M. and Thurik, R. (2000). Strategies, uncertainty and performance of Small business start-ups. *Small Business Economics*, 15: 165-181.
- Gilbert, B. A., McDougall, P. P. and Audretsch, D. B. (2006). New venture growth: A review and extension. *Journal of Management*, 32: 926-950.
- Gnyawali, D. R. and Fogel, D. S. (1994). Environments for entrepreneurship development: key dimensions and research implications. *Entrepreneurship Theory and Practice*, Summer: 43-62.
- Godin, K., Clemens, J. and Veldhuis, N. (2008). Measuring entrepreneurship conceptual frameworks and empirical indicators. *Studies in Entrepreneurship Markets*, 7 June, Fraser Institute.
- Goodman, P. S. (1974). An examination of referents used in the evaluation of pay. *Organizational Behavior and Human Performance*, 12: 170-195.
- Görg, H., Strobl, E. and Ruane, F. (2000). Determinants of firm start-up size: an application of quantile regression for Ireland. *Small Business Economics*, 14: 211-222.
- Grichnik, D., Brinckmann, J., Singh, L. and Manigart, S. (2014). Beyond environmental scarcity: Human and social capital as driving forces of bootstrapping activities. *Journal of Business Venturing*, 29: 310-326.
- Gruber, M. (2007). Uncovering the value of planning in new venture creation: A process and contingency perspective. *Journal of Business Venturing*, 22: 782-807.
- Hansen, M. T. (1999). The search-transfer problem: The role of weak ties in sharing knowledge across organization subunits. *Administrative Science Quarterly*, 44 (1): 82-111.
- Hernández-Mogollón, R. (2014). Global Entrepreneurship Monitor - Informe España 2013.
- Hmieleski, K. M. and Corbett, A. C. (2008). The contrasting interaction effects of improvisational behavior with entrepreneurial self-efficacy on new venture performance and entrepreneur work satisfaction. *Journal of Business Venturing*, 23: 482-496.

- Ho, V. T. (2005). Social influence on evaluations of psychological contract fulfillment. *Academy of Management Journal*, 30 (1): 113-128.
- Ho, V. T. and Levesque, L. (2005). With a little help from my friends (and substitutes): Social referents and influence in psychological contract fulfillment. *Organization Science*, 16: 275-289.
- Hofmann, D. A., Griffin, M. A. and Gavin, M. B. (2000). *The application of hierarchical linear modeling to organizational research*. In: K. J. Klein and S. W. J. Kozlowski (Eds.), *Multilevel Theory, Research, and Methods in Organizations: Foundations, Extensions, and New Directions*: 467-511. San Francisco: Jossey-Bass.
- Hofstede, G. and Hofstede, G. J. (2005). *Cultures and Organizations. Software of the Mind*. (2<sup>nd</sup> Ed.) McGraw-Hill, New York, NY.
- Honig, B. and Karlsson, T. (2004). Institutional forces and the written business plan. *Journal of Management*, 30: 29-48.
- Honig, B. and Samuelsson, M. (2012). Planning and the entrepreneur: a longitudinal examination of nascent entrepreneurs in Sweden. *Journal of Small Business Management*, 50: 365-388.
- Honig, B. and Karlsson, T. (2013). An institutional perspective on business planning activities for nascent entrepreneurs in Sweden and the US. *Administrative Sciences*, 3: 266-289.
- Honig, B. and Samuelsson, M. (2014). Data replication and extension: A study of business planning and venture-level performance. *Journal of Business Venturing Insights*, 1-2: 18-25.
- Hundt, C. and Sternberg, R. (2014). Explaining new firm creation in Europe from a spatial and time perspective: A multilevel analysis based upon data of individuals, regions and countries. *Papers in Regional Science*, forthcoming.
- Johnson, P. and Parker, S. C. (1996). Spatial variations in the determinants and effects of firm births and deaths. *Regional Studies*, 30 (7): 679-688.
- Karlsson, T. and Honig, B. (2009). Judging a business by its cover. An institutional perspective on new ventures and the business plan. *Journal of Business Venturing*, 24: 27-45.
- Katz, J. and Gartner, W. B. (1988). Properties of emerging organizations. *Academy of Management Review*, 13 (3): 429-441.
- Kibler, E. (2013). Formation of entrepreneurial intentions in a regional context. *Entrepreneurship and Regional Development*, 35 (3-4): 293-323.

- Kibler, E., Kautonen, T. and Fink, M. (2014). Regional Social Legitimacy of Entrepreneurship: Implications for Entrepreneurial Intention and Start-up Behaviour. *Regional Studies*, forthcoming.
- Kim, P. H., Aldrich, H. E. and Keister, L. A. (2006). Access (not) Denied: The Impact of Financial, Human, and Cultural Capital on Entrepreneurial Entry in the United States. *Small Business Economics*, 27 (1): 5-22.
- Kirzner, I. M. (1973). *Competition and Entrepreneurship*. Chicago: U. of Chicago Press.
- Knight, F. H. (1921). *Risk, uncertainty and profit*. New York: August M. Kelley.
- Koellinger, P. and Minniti, M. (2006). Not for lack of trying: American entrepreneurship in black and white. *Small Business Economics*, 27 (1): 59-79.
- Koellinger, P., Minniti, M. and Schade, C. (2007). I think I can, I think I can...: a study of entrepreneurial behavior. *Journal of Economic Psychology*, 28: 502-527.
- Koellinger, P. (2008). Why are some entrepreneurs more innovative than others? *Small Business Economics*, 31 (1): 21-37.
- Krackhardt, D. and Brass, D. J. (1994). *Intra-organizational networks: The micro side*. In: S. Wasserman & J. Galaskiewicz (Eds.), *Advances in the social and behavioral sciences from social network analysis* (pp. 209–230). Beverly Hills: Sage.
- Krumboltz, J., Mitchell, A. and Jones, G. (1976). A Social Learning Theory and Career Selection. *The Counseling Psychologist*, 6: 71-80.
- Kulik, C. T. and Ambrose, M. L. (1992). Personal and situational determinants of referent choice. *Academy of Management Review*, 17 (2): 212-237.
- Lechner, C. and Dowling, M. (2003). Firm networks: External relationships as sources for the growth and competitiveness of entrepreneurial firms. *Entrepreneurship & Regional Development*, 15: 1-26.
- Levie, J. and Autio, E. (2013). *Growth and growth intentions*. Enterprise Research Centre White Paper.
- Liao J. and Welsch H. (2005). Roles of social capital in venture creation: key dimensions and research implications. *Journal of Small Business Management*, 43: 345-362.
- Lindquist, M., Sol, J. and van Praag, M. (2015). Why do Entrepreneurial Parents have Entrepreneurial Children? *Journal of Labor Economics*, forthcoming.
- Lööf, H. and Nabavi, P. (2014). Survival, productivity and growth of new ventures across locations. *Small Business Economics*, 43: 477-491.
- Lumpkin, G. and Dess, G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review*, 21(1): 135-172.

- Malecki, E. (1997). *Entrepreneurs, networks, and economic development: a review of recent research*. In: Katz J. A. (Ed.) *Advances in entrepreneurship, firm emergence and growth*, London: JAI Press 3: 57-118.
- Mata, J. (1996). Market, entrepreneurs and the size of new firms. *Economics Letters*, 52: 89-94.
- Mata, J. and Machado, J. A. F. (1996). Firm start-up size: a conditional quantile approach. *European Economic Review*, 40: 1305-1323.
- McKelvie, A. and Wiklund, J. (2010). Advancing Firm Growth Research: A Focus on Growth Mode Instead of Growth Rate. *Entrepreneurship Theory and Practice*, 261-288.
- Mehra, A., Kilduff, M. and Brass, D. J. (2001). The social networks of high and low self-monitors: Implications for workplace performance. *Administrative Science Quarterly*, 46: 121-146.
- Mintzber, H. (1990). The design school: reconsidering the basic premises of strategic management. *Strategic Management Journal*, 11: 171-195.
- Mintzber, H. (1994). *The rise and fall of strategic planning*. The Free Press. New York, NY.
- Mises, L. (1949). *Human actions: A treatise on Economics*. Yale University Press. New Haven, CT.
- Mitchell, R. K., Smith, B., Seawright, K. W. and Morse, E. A. (2000). Cross-cultural cognitions and the venture creation decision. *Academy of Management Journal*, 43: 974-993.
- Mitchell, R. K., Busenitz, L., Lant, T., McDougall, P. P., Morse, E. A. and Smith, J. B. (2002). Toward a theory of entrepreneurial cognition: Rethinking the people side of entrepreneurship research. *Entrepreneurship Theory and Practice*, 27: 93-104
- Mueller P., van Stel A. J. and Storey D. J. (2008). The effects of new firm formation on regional development over time: the case of Great Britain. *Small Business Economics*, 30: 59-71.
- Murillo-Luna, J. L., Garcés-Ayerbe, C. and Rivera-Torres, P. (2008). Why do patterns of environmental response differ? A stakeholders' pressure approach. *Strategic Management Journal*, 29: 1225-1240.
- Nanda, R. and Sørensen, J. B. (2010). Workplace peers and entrepreneurship. *Management Science*, 56: 1116-26.
- Nicholls-Nixon, C. L., Cooper, A.C. and Woo, C.Y. (2000). Strategic experimentation: understanding change and performance in new ventures. *Journal of Business Venturing*, 15: 493-521.

- Oldham, G. R., Kulik, C. T., Stepina, L. P. and Ambrose, M. L. (1986). Relations between situational factors and the comparative referents used by employees. *Academy of Management Journal*, 29: 599-608.
- Oliver, C. (1991). Strategic responses to institutional processes. *Academy of Management Review*, 16: 145-179.
- Pastor, J. C., Meindl, J. R. and Mayo, M. C. (2002). A network effects model of charisma attributions. *Academy of Management Journal*, 45 (2): 410-420.
- Perry-Smith, J. E. and Shalley, C. E. (2003). The social side of creativity: A static and dynamic social network perspective. *Academy of Management Review*, 28 (1): 89-107.
- Perry, S. C. (2001). The relationship between writing business plans and the failure of small businesses in the U.S. *Journal of Small Business Management*, 39: 201-208.
- Peterson, M. F., Arregle, J. L. and Xavier, M. (2012). Multilevel models in international business research. *Journal of International Business Studies*, 43 (5): 451-457.
- Pfeffer, J. (2004). Competitive advantage through people. *Harvard Business School Press*. Boston, MA.
- Porter, M. (1980). Industry Structure and Competitive Strategy: Keys to Profitability. *Financial Analysts Journal*, 36: 30-41.
- Renzulli, L. A., Aldrich, H. and Moody, J. (2000). Family matters: Gender, networks, and entrepreneurial outcomes. *Social Forces*, 79 (2): 523-546.
- Reynolds, P. and Miller, B. (1992). New firm gestation: conception, birth, and implications for research. *Journal of Business Venturing*, 7: 405-417.
- Reynolds, P. D., Storey, D. J. and Westhead, P. (1994). Cross-national comparisons of the variation in new firm formation rates. *Regional Studies*, 28 (4): 443-456.
- Reynolds, P., Hay, M. and Camp, S. (1999). *Global entrepreneurship monitor 1999 executive report*. Kauffman Foundation. Kansas City, MO.
- Reynolds, P., Bosma, N., Autio, E., Hunt, H., De Bono, N., Servais, I., Lopez-Garcia, P. and Chin, N. (2005). Global Entrepreneurship Monitor: Data Collection Design and Implementation 1998–2003. *Small Business Economics*, 24: 205-231.
- Rudd, J. M., Greenley, G. E., Beatson, A. T. and Lings, I. N. (2008). Strategic planning and performance: Extending the debate. *Journal of Business Research*, 61: 99-108.
- Sanz, M., Contin, I. and Larraza, M. (2009). *Global Entrepreneurship Monitor: Informe Ejecutivo 2008-Navarra*. Servicio Navarro de Empleo-Gobierno de Navarra.
- Sarasvathy, S. D. (2008). *Effectuation: Elements of entrepreneurial expertise*. Cheltenham, UK: Edward Elgar.

- Schumpeter, J. A. (1942). *Capitalism, socialism, and democracy*. New York: Harper & Row.
- Seibert, S. E., Kraimer, M. L. and Liden, R. C. (2001). A social capital theory of career success. *Academy of Management Journal*, 44 (2): 219-247.
- Sexton, D. L. and Upton, N. B. (1985). The entrepreneur: a capable executive and more. *Journal Business Venturing*, (1): 129-140.
- Shah, P. P. (1998). Who are employees' social referents? Using a network perspective to determine referent others. *Academy of Management Journal*, 41: 249-268.
- Shane, S. and Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review*, 25: 217-226.
- Shane, S. and Stuart, T. (2002). Organizational endowments and the performance of university start-ups. *Management Science*, 48 (1): 154-170.
- Shane, S. (2003). *A general theory of entrepreneurship: The individual-opportunity nexus*. Cheltenham, UK: Edward Elgar.
- Shane, S. and Delmar, F. (2004). Planning for the Market: Business Planning before Marketing and the Continuation of Organizing Efforts. *Journal of Business Venturing*, 19: 767-785.
- Shaver, K. G. (2012). Entrepreneurial action: Conceptual foundations and research challenges. In: A. Corbett and J. A. Katz (Eds.) *Entrepreneurial action*. London: Emerald. 279-304.
- Shepherd, D. A. (2015). Party On! A call for entrepreneurship research that is more interactive, activity based, cognitively hot, compassionate, and prosocial. *Journal of Business Venturing*, forthcoming.
- Sluss, D. M. and Ashforth, B. E. (2008). How Relational and Organizational Identification Converge: Processes and Conditions. *Organization Science*, 19 (6): 807-823.
- Smith, J. A. (1998). Strategies for start-ups. *Long Range Planning*, 31: 857-872.
- Sparrowe, R. T., Liden, R. C., Wayne, S. J. and Kraimer, M. L. (2001). Social networks and the performance of individuals and groups. *Academy of Management Journal*, 44 (2): 316-325.
- Stam, E., Bosma, N., van Witteloostuijn, A., De Jong, J., Bogaert, S., Edwards, N. and Jaspers, F. (2012). *Ambitious Entrepreneurship: A Review of the Academic Literature and Directions for Public Policy* (1-162). Den Haag: Advisory Council for Science and Technology Policy.
- Stel, A., Carree, M. and Thurik, R. (2005). The effect of entrepreneurial activity on national economic growth. *Small Business Economics*, 24 (3): 311-321.

- Sternberg, R. and Wennekers, S. (2005). Determinants and Effects of New Business Creation Using Global Entrepreneurship Monitor Data, *Small Business Economics*, 24: 193-203.
- Sternberg, R. (2009). Regional Dimensions of Entrepreneurship. *Foundations and Trends in Entrepreneurship*, 5: 211-340.
- Stinchcombe, A. L. (1965). *Social structures and organizations*. In: March, J.G (Ed.), Handbook of Organizations. Rand McNally, Chicago, pp. 142-193.
- Storey, D. J. (1994). *Understanding the Small Business Sector*. London: Routledge.
- Stuart, T. E. and Ding, W. W. (2006). When do scientists become entrepreneurs? The social structural antecedents of commercial activity in the academic life sciences. *American Journal of Sociology*, 112: 97-144.
- Studenmund, A. H. (1997). *Using Econometrics. A Practical Guide* (Addison-Wesley).
- Stuetzer, M., Obschonka, M., Brixy, U., Sternberg, R. and Cantner, U. (2014). Regional characteristics, opportunity perception and entrepreneurial activities. *Small Business Economics*, 42: 221-244.
- Ter Hofstede, F, Wedel, M. and Steenkamp, J. B. E. M. (2002). Identifying spatial segments in international markets. *Marketing Science*, 21 (2): 160-177.
- Tödting, F. and Wanzenböck, H. (2003). Regional differences in structural characteristics of start-ups. *Entrepreneurship and Regional Development*, 15: 351-370.
- Trettin, L. and Welter, F. (2011). Challenges for spatially oriented entrepreneurship research. *Entrepreneurship and Regional Development*, 23 (7-8): 575-602.
- Tsai, W. (2001). Knowledge transfer in intraorganizational networks: Effects of network position and absorptive capacity on business unit innovation and performance. *Academy of Management Journal*, 44 (5): 996-1004.
- Ucbasaran, D., Westhead, P. and Wright, M. (2008). Opportunity Identification and Pursuit: Does an Entrepreneur's Human Capital Matter? *Small Business Economics*, 30: 153-173.
- Unger, J. M. Rauch, A., Frese, M. and Rosenbusch, N. (2011). Human capital and entrepreneurial success: A meta-analytical review. *Journal of Business Venturing*, 26: 341-358.
- van Praag, C. M. and Versloot, P. H. (2007). What is the value of entrepreneurship? A review of recent research. *Small Business Economics*, 29: 351-382.
- Venkataraman, S. (1997). *The distinctive domain of entrepreneurship research*. In: J. Katz & R. Brockhaus (Eds.), *Advances in entrepreneurship, firm emergence and growth* (Vol. 3, pp. 119–138). Greenwich, CT: JAI Press.

- Verheul, I. and Thurik, R. (2001). Start-up Capital: Does Gender Matter? *Small Business Economics*, 16: 329-345.
- Wagner, J. and Sternberg, R. (2004). Start-up activities, individual characteristics, and the regional milieu: lessons for entrepreneurship support policies from German micro data. *The Annals of Regional Science*, 38: 219-240.
- Wennekers, S. and Thurik, R. (1999). Linking entrepreneurship and economic growth. *Small Business Economics*, 13 (1): 27-55.
- Wennekers, S., van Stel, A., Thrurik, R. and Reynolds, P. (2005). Nascent entrepreneurship and the level of economic development. *Small Business Economics*, 24(3): 293-309.
- Wiklund, J. and Shepherd, D. (2003). Aspiring for, and Achieving Growth: The Moderating Role of Resources and Opportunities. *Journal of Management Studies*, 40: 1919-1941.
- Wiklund, J., Davidsson, P. and Delmar, F. (2003). What Do They Think and Feel about Growth? An Expectancy-Value Approach to Small Business Managers' Attitudes Toward Growth. *Entrepreneurship Theory and Practice*, 27: 247-270.
- Wiltbank, R., Dew, N., Read, S. and Sarasvathy, S. (2006). What to do next? The case for non-predictive strategy. *Strategic Management Journal*, 27: 981-998.
- Wood, J. V. (1996). What is social comparison and how should we study it? *Personality and Social Psychology Bulletin*, 22: 520-537.
- Wright, M. and Stigliani, I. (2012). Entrepreneurship and Growth. *International Small Business Journal*, 31 (1): 3-22.
- Zimmerman, M. A. and Zeitz, G. J. (2002). Beyond survival: achieving new venture growth by building legitimacy. *Academy of Management Review*, 27: 414-431.