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A mio Nonno Francesco,  
uno dei migliori imprenditori  
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## **Introduction**

In the last years, several authors have developed their research focusing on the topic of nascent entrepreneurship (Zwan, Thurik, Verheul, Hessels, 2016; Gartner & Shaver, 2012). From their analysis, a clear definition concerning nascent entrepreneurs has emerged. The authors define nascent entrepreneurs as individuals who are at the beginning of their activity (Reynolds, 2009) and potential founders of a new venture (Mueller, 2006); nascent entrepreneurs are still in the process of organizing their businesses and activities (Kim, Aldrich, & Keister, 2006; Reynolds & White, 1997) but are not still involved in the full entrepreneurship cycle (Reynolds and Miller, 1992; Reynolds, 2000; Wagner, 2004).

Despite the consensus of “who the nascent entrepreneur is”, the multi-disciplinary approach used in the literature (Gartner & Shaver, 2012) makes navigation difficult in the multitude of disciplines who embrace the topic. For this reason, in order to explore and acquire a prior understanding of the topic, the first paper of this research conducted an empirical study for exploring and systematizing the literature of nascent entrepreneurship. As a first step, this research utilized Co-citation approach to deeply discover the overview of the structure of the field. Furthermore, this method has shown the “invisible links” that connects the most important scholars of the subject and the conjunctions among their findings. A map of 59 articles divided in 4 clusters represents the overview of the hard core of nascent entrepreneurship. Each cluster was labelled according to their thematic area: *Exogenous and Institutional factors, Processes and Activities, Cognitions antecedents and Human and social capital drivers*. Analysing the groups, this research discovered that several authors have studied Nascent Entrepreneurship considering macro-factors (i.e. political and culture factors

and norms and administrative procedures). Furthermore, difference among gender is a recurring theme in some groups of the map. Despite this difference, few connections were found between macro or institutional factors and gender. This triggered the idea to develop the project considering the conjunction between gender and institutional factors in nascent entrepreneurship research.

The second and third papers have used the institutional theory for understanding the decisions of the nascent entrepreneurs according to their gender. In the studies, two specific external factors were identified that could affect nascent entrepreneurship decision according to their gender: *culture* and *regulatory support of nascent women entrepreneurship*. The two variables together take in consideration the three institutional pillars: regulatory (support of nascent women entrepreneurship), normative and cognitive (culture) (Scott, 2007).

The main goal of the second paper was to discover the effects of entrepreneurial culture and support of women entrepreneurship through women's as well as men's decisions and the correlation between the two factors. We have supposed that the higher the entrepreneurial culture is; the higher is the probability to be nascent entrepreneurs. In our opinion, entrepreneurial culture should affect both men and women. On the other hand, we have supposed that the specific factors of supporting women entrepreneurs should affect only women's decisions. A sample of data from the Global Entrepreneurship Monitor (GEM) composed by 239.326 people from 90 countries around the world was used for the research. Logistic regression was used to analyze the data. The paper helps to cover the gap in nascent entrepreneurship and gender literature. Specifically, the paper contributes to understand the different effects of institutions for men and women entrepreneurs.

The third article deepens the research by considering one of the most important factors for entrepreneurs to launch and grow ventures: financing (Brush et al., 2009). Several researches have already shown discrepancy between men and women in financing their business



(Eddleston Ladge, Mitteness & Balachandra, 2016; Verheul & Thurik, 2001). However, there is no research in the extant literature that reviewed how institutional factors affect the gender's gap in financing. Thus, the third paper has covered this existing gap. We have supposed that the two institutional variables (*culture* and *supporting women entrepreneurship*) could reduce or boost the gender's financing gap. The data from GEM and World Value Survey was used to test the idea. The sample was composed of 40,595 nascent entrepreneurs owning and managing a new business in 106 countries. The data was analysed using hierarchical linear modelling. The paper helps to highlight the differences between traditionalist and modern culture contributing towards the development of the literature of nascent entrepreneurship and institutional theory. Furthermore, the paper helps to develop knowledge about nascent entrepreneurship and gender analysing details that would be considered useful by both policy makers and scholars.

Together, these three papers, represents an important contribution for nascent entrepreneurship research. The three papers contribute with different perspectives to discover some details of the role of gender in nascent entrepreneurship research. Furthermore, they provide a comprehensive and coherent understanding of institutional effects on nascent entrepreneurship and gender.

## **Chapter1: Mapping Nascent Entrepreneurship Research using the Co-Citation Method**

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### **Abstract**

Over the last decade, the field of nascent entrepreneurship has been characterized by an increase of divergent perspectives. Yet little empirical research has focused on analysing these perspectives. Using the co-citation method, we address this issue by analysing articles published on the dataset ISI Thompson Web of Knowledge between 1992 and 2014. Four specific groups have been identified. These results provide an empirical evidence of the fragmentation of the topic. Furthermore, the paper contributes to understand links and boundaries existing in the literature. Moreover, scholars can use it as a useful tool to address their future researches.

### **Keywords**

Nascent Entrepreneur; Co-Citation; Entrepreneurship; Review.

## **1 Introduction**

Every year millions of people take the decision to become entrepreneurs (Reynolds, Bosma, Autio, Hunt, De Bono, Servais, Lopez-Garcia, Chin, 2005) and the growth of the phenomenon is steady (Bosma & Levie, 2009).

A growing contingent of new terms, on whose lexical, semantic and substantial borders are not always sufficiently defined, emerges in the practitioner landscape. Words like “start-ups”, “accelerators”, “incubators” and so on, that just few years ago did not exist, were unknown or less frequently used, are now common in everyday life and in the media communication.

Despite the flourishing of this new lexicon, it is crucial to remember that scholars have addressed the issues of creation of enterprise for many years. Particularly authors individualized a common construct to identify entrepreneurs at the beginning of their activity: *nascent entrepreneur* (NE) (Reynolds, 2009; Wagner, 2004).

Nascent entrepreneurs are individuals engaged in creating a new firm (Dimov, 2010; McGee, Peterson, Mueller, & Sequeira, 2009; Reynolds, 2009; Wagner, 2007), and the potential founders of a new venture (Mueller, 2006), they take steps to found a new business but have not yet succeeded in making the transition to new business ownership (Carter, Gartner, & Reynolds, 1996). NE is “someone who initiates serious activities that are intended to culminate in a viable business start up” (Koellinger, 2008, pp. 22).

NEs are people engaged in a process as it appears in the definition of Reynolds & White (1997): “Nascent entrepreneurs are people still in the process of organizing and assembling the resource they need for a new business” (Kim, Aldrich, & Keister, 2006; Reynolds & White, 1997). They are not necessarily involved in the full process of creation, called also entrepreneurship cycle, but just in the specific phase of gestation (period from conception to birth) (Aldrich & Martinez, 2001; Kessler & Frank, 2009; Reynolds and Miller, 1992; Wagner, 2007). They are different from people engaged in new firm (after the firm birth), young firms -firms that have survived the start-up phase- (Ács & Varga, 2005; Ramos-rodríguez, Martínez-fierro, Medina-garrido, & Ruiz-navarro, 2015) and from people that have just the intention to start a business; necessary but not a sufficient condition to consider an individual as a nascent entrepreneur (Thompson, 2009).

Nascent entrepreneurship research is enhanced by multi-disciplinary research approaches and treated by the scholars using a variety of disciplinary lenses (Gartner & Shaver, 2012). The subject embraces disciplines as: economics, history, organization theory, psychology,

public policy, social psychology, sociology and strategy (Gartner, 2006; Gartner & Shaver, 2012).

There has been little research which has explored and systematized the literature of nascent entrepreneurship. Davidsson (2006) recognized five groups of nascent entrepreneurship: *person factor leading to nascent entrepreneur status*, *the discovery process*, *the exploitation process*, *some particular themes* (i.e. teams, gender, ethnicity and growth expectation) and the *macro level of NE* (i.e. aggregate level). Davidsson and Gordon (2012) identified three areas of nascent entrepreneurship: *characteristics of nascent entrepreneurs* (person); *antecedents and characteristics of the new venture creation process* (process), and *explaining new venture creation process outcomes* (Outcomes). In both the cases the contributions are limited to papers that used specific datasets: *Global entrepreneurship monitor* (GEM) and *Panel study of entrepreneurial dynamics* (PSED). These studies represent an important step towards understanding the literature of nascent entrepreneurship but, considering the increase of publications and the qualitative approach of previous studies, further research is necessary.

This study can supplement previous literature review using a different approach. First, it can be considered a useful tool to reveal the different schools of thought within the field of Nascent Entrepreneurs.

Second, it helps to generate an overview of the structure and development of the field. With this research, we want to show the “invisible links” that connect the major authors of the subject emphasizing conjunctions among scholars and their findings. Furthermore, we expect to shed additional light on this multidisciplinary topic. These contributions can also address future’s research scholars.

To advance this line of research, in the current study we analyzed the literature using a complementary and quantitative approach to previous qualitative approach: the co-citation method (Nerur, Rasheed, & Natarajan, 2008; Ramos-Rodríguez & Ruíz-Navarro, 2004).

Co-citation analysis is a useful method to identify central articles and relationships between them (Zitt & Bassecoulard, 1994; Di Guardo & Harrigan, 2012). The method is based on the assumption that more two articles are cited together, the stronger is the relationship between them (Crane, 1972).

This method has the advantage of quantificability and objectivity and avoids some of the subjective potential biased (Nerur et al., 2008; Ramos-Rodríguez & Ruíz-Navarro, 2004). It provides an appropriate tool for studying the intellectual structure of the topic (Nerur et al., 2008; Ramos-Rodríguez & Ruíz-Navarro, 2004). It is considered an effective method to identify the isolated areas of the topic, how the research is developing and where the research can be directed to better advanced the field (Aldrick & Backer, 1997; Bull & Willard, 1993; Busenitz, Plummer, Klotz, Shahzad, & Rhoads, 2014; Landstrom et al., 2012).

The effectiveness of this method is also evident in the widely topic of entrepreneurship research (Busenitz et al., 2014; Cornelius et al., 2006), although it has never been used in the more specific literature of nascent entrepreneurship.

Our aims are: to delineate the intellectual structure of research about nascent entrepreneurship and the subfields that constitute it; to identify any relationships between these sub-fields; to identify authors who play a pivotal role in bridging two or more conceptual domains of research; to visualize the gaps existing in the literature.

This paper makes some important contributions. We offer a quantitative-based perspective reflecting on the current trends in the field of nascent entrepreneurship. We offer new developments to facilitate aspiring authors to better their position in their researches in

the entrepreneurship landscape and consequently improve the impact of their work (Busenitz et al., 2014).

The rest of the article is organized as follows. After the introduction, the second section presents a synthesis of the literature review of Nascent Entrepreneurs. The third section illustrates the methodology. The fourth section shows results. The last sections are devoted to discussion, limitations and conclusion.

## **2 Literature review**

The theme of venture creation has been a hot widely discussed topic (Davidsson & Gordon, 2012). Despite the fact that authors started to describe this topic before the 1940's it is only with Gartner (1985) that the first framework was established (Aidin, 2015). Gartner (1985) described the multidimensional phenomenon of new venture creation using four dimensions: individual, organization, environment and process (Gartner, 1985). He defined new venture creation following the Strategic Planning Institute (1978, p. 1-2) definition:

*“1. an independent entity 2. a new profit center within a company which has other established businesses, or 3. a joint venture which satisfies the following criteria: Its founders must acquire expertise in products, process, market and/or technology. Results are expected beyond the year in which the investment is made. It is considered a new market entrant by its competitors. It is regarded as a new source of supply by its potential customers” (Gartner, 1985, pp, 698).”*

After Gartner many others authors have tried to define “creation of a business”. This period of life has been defined by Veciana (1988) “gestation” or “creation” period.

However, it is only at the beginning of the 1990's that authors starting to use several different synonymous to define it. The preorganization (Katz and Gartner 1988; Hansen 1990), the organization in-vitro (Hansen and Wortman 1989), pre-launch (McMullan and Long 1990), and start-up (Van de Ven, Angle, and Poole 1989; Vesper, 1990) are

just a few of the used synonymous. Moreover, in 1992 the term “nascent entrepreneur” appeared for the first time in the research literature (Davidsson, 2006). The term was created by Paul Reynolds. The scholar is considered “*the main driving force behind the major, empirical research programs in the nascent entrepreneurship area*” (Davidsson, 2006).

Reynolds defines nascent entrepreneurs as: “individuals who were identified as taking steps to found a new business but who had not yet succeeded in making the transition to new business ownership”. Three activity profiles for nascent entrepreneurs have been identified (Carter, Gartner, & Reynolds, 1996): started a business (nascent entrepreneurs who were able to start a business were more aggressive in making their businesses real), gave up (these entrepreneurs discovered that their initial idea for their businesses would not lead to success) and others who kept on trying (those who are not putting enough effort into the start-up process in order to find out whether they should start the business or give up).

Despite the construct, some ambiguities have emerged in distinguish nascent entrepreneurship. For example, in Sharma and Chrisman (1999) a clear distinction between nascent entrepreneurship and corporate entrepreneurship does not emerge (Sharma and Chrisman, 1999).

However, according to Wagner (2004) and Davidsson (2006) two different labels can be used to call individuals in a start-up process. The individuals that come from an adult population and begin on their own to create a new venture are labelled as nascent entrepreneurs. Otherwise, individuals that are working for existing firms and starting to work on the creation of a new business are labelled nascent intrapreneurs (Davidsson, 2006; Wagner, 2004).

The concept of nascent entrepreneurship has also been adopted by the Global entrepreneurship monitor project (GEM), to empirically describe and objectively measure the gestation phase (Bosma et al., 2012).

Davidsson (2006) recognized five groups of nascent entrepreneurship: *person factor leading to nascent entrepreneur status, the discovery process, the exploitation process, some particular themes* (i.e. teams, gender, ethnicity and growth expectation) and the *macro level of NE* (i.e. aggregate level). After five years, Davidsson and Gordon(2012) have classified the literature of nascent entrepreneurship in three areas: characteristics of nascent entrepreneurs, venture creation process and outcome (Davidsson & Gordon, 2012).

From these previous works emerges how the term Nascent Entrepreneurs has become deeply rooted. Authors give a clear definition of which Nascent entrepreneur is. However, it is not still clear how the literature labelled with this construct is distributed. In fact, only few authors describe this specific topic. Furthermore, the multidisciplinary of the topic emerges from their works. This requires us to use a different approach to improve the previous research. This approach is explained in a deeply way in the next section.

### **3 Method**

The proliferation of online databases with citation data and software for specific analysis have allowed the rapid development of the bibliometric methods (Zupic & Čater, 2015). In this article, we use Co-citation analysis approach. The method of co-citation has been used in various fields as strategic management (Nerur, Rasheed, & Natarajan, 2008), entrepreneurship (Gartner, Davidsson, & Zahra, 2006) and innovation (Fagerberg, Fosaas & Sapprasert, 2012)and it has dominated the mapping scientific literature over the last decades (Vogel & Güttel, 2012).

Co-citation is a similarity of the relationship between two cited publications used in the literature for identifying central articles (Di Guardo & Harrigan, 2012; Loi, Castriotta, & Di Guardo, 2016, Zitt & Bassecoulard, 1994) and relationships between them. More two articles are cited together, the stronger is the relationship between them (Crane, 1972) and the more likely they will be affiliated to the same school of thought (Braam et al., 1991; Small, 1973;



Small and Griffith, 1974; White and McCain, 1998, Loi et al., 2016). These relations reveal the logic that authors followed to organize the produced knowledge and provide the mental models that guide analysis of the topic (Loi et al., 2016). Furthermore, the co-citation method allows creating a representation of the research's area portioning elements into different groups (Zupic & Čater, 2015) producing a spatial representation similar to geographic maps (Medina and van Leeuwen, 2012; Small, 1999). The map is a visualization of the network structure in which the network nodes represent units of analysis and network ties represent similarity connection (Zupic & Čater, 2015). Through the map we are able to visualize the theoretical core of the discipline (Loi et al., 2016). Several different types of maps can be constructed; the most common are maps based on documents (Zupic & Čater, 2015).

The documents constitute our unit of analysis. For selection it we decided to follow the approach used by several authors and to consider only articles approved by the critical review (Acedo, Barroso and Galan, 2006; Ramos-Rodríguez & Ruíz-Navarro, 2004). These articles can be considered the “certificate knowledge” and the most influential contributions of the topic (Ramos-Rodríguez & Ruíz-Navarro, 2004). We decide to not consider books, doctoral thesis or scientific congress documents (Acedo, Barroso and Galan, 2006; Cobo, López-Herrera and Herrera-Viedma, 2011; Glanzel, 2001) because our goal is to identify, to map and to find the ties in the hard core of nascent entrepreneurship literature.

Another advantage of using co-citation method emerges comparing it with the qualitative literature review. In fact, using qualitative review become difficult when the literature of the topic is too wide (Zupic & Čater, 2015); if the volume of scientific research increased, co-citation can help to take track of relevant literature in the field (Zupic & Čater, 2015). Furthermore, it can provides additional information that the traditional methods shall not provide (Zupic & Čater, 2015) and it can ensure a more objective and rigorous analysis in the evaluation of the literature (Zupic & Čater, 2015).

### **3.2 Data and selection of the unit of analysis**

We followed the McCain (1990) and Zupic & Cater (2015) prescriptions: selection of the unit of analysis, filtering the unity of analysis, generation of a raw citation matrix, multidimensional scaling, clustering, interpretation and validation.

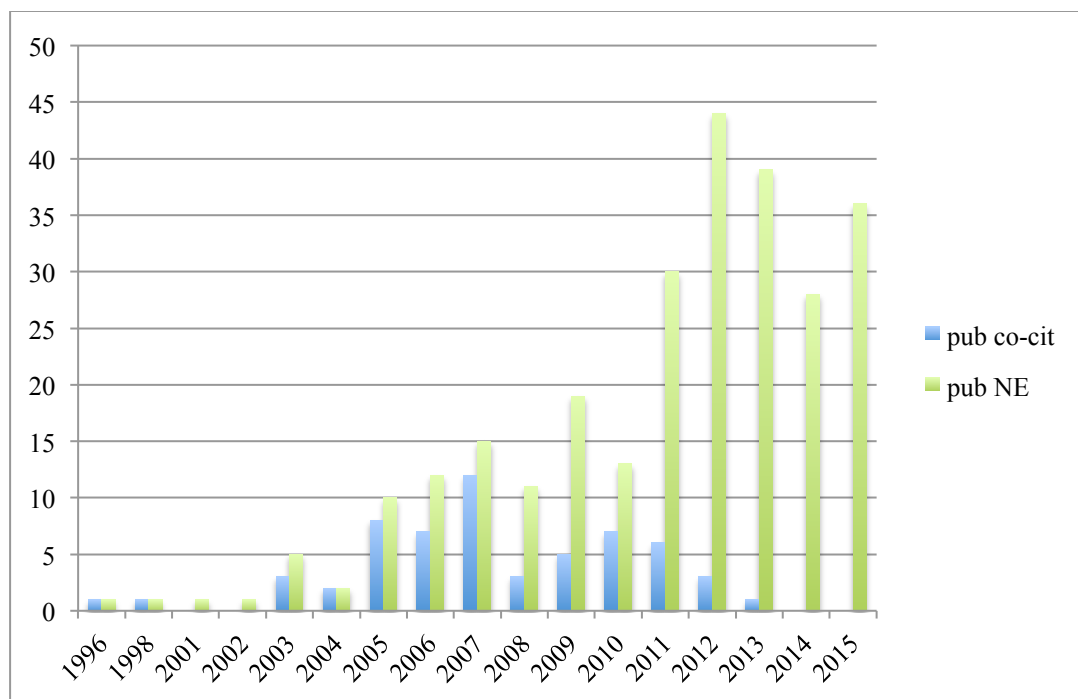
The articles have been selected using Thomson-ISI online database (Armstrong and Wilkinson, 2007). We could have used others database as: Scopus or Google Scholar. However, we believe that Thomson-ISI is the dataset that fit well with our research for the following reasons: first of all, this database considers journals covered by the Social Science Citation Index (SSCI), this allows only journals with an official impact factor to be included in our sample. In fact, the Social Science Citation Index is generally recognised by academics as containing the publications with the greatest impact throughout all the social science fields (Ramos-rodríguez, Martínez-fierro, Medina-garrido, & Ruiz-navarro, 2015). Second, Thomson - ISI is most used database to conduct co-citation analysis in entrepreneurship (Busenitz et al., 2014; Meyer et al., 2014; Schildt et al., 2006; Cornelius et al., 2006; Loi et al., 2016). We are conscious that different database may influence the results of the analysis (Loi et al., 2016). However, Thomson - ISI has directly focused on the hard core of the topic allowing us to have more rigour coherence on the data selection process (Levine-Clark and Gil, 2009; Loi et al., 2016).

We extracted research articles and reviews in English (Cuccurullo, Aria, & Sarto, 2016; Loi et al., 2016) published in a Timespan of 25 years; from 1991 to 2015. The time-frame 15-25 years is considered appropriate for investigating in the field (Busenitz, Plummer, Klotz, Shahzad, & Rhoads, 2014; Cuccurullo et al., 2016; Di Guardo & Harrigan, 2012; Loi et al., 2016; Meyer et al., 2014; Ramos-Rodríguez & Ruiz-Navarro, 2004). This time-frame was selected in order to give the possibility of selecting a time-span that balances recent and more dated publications (Chen, 2006; Pilkington and Meredith, 2009; Small, 1973; White and

McCain, 1998); a longer time period might overestimate the presence of older articles and a shorter time period doesn't allow to have sufficient citations to perform a co-citation analysis (Rowland, 1999; White and Griffith, 1981; Loi et al., 2016). The rising of research about the topic, as can be seen in the Graph 1, it drives us to considerer this time-frame.

Graph 1 indicates that nascent entrepreneurship was a really small area of research in the 1990s decade. It continued to be small until the second half of 2000s. Since then, the pace of growth has increased dramatically. It reaches its highest number of published papers in the year 2012. Despite a slowdown in growth in the last years, there is a great number of authors still publishing in nascent entrepreneurship.

**Graph 1:** Articles for year



Selecting the paper that must be included in the analysis is a challenging task and represents a crucial decision (Zupic & Čater, 2015). The first step is selecting keywords. Because not all journals publish keywords, the search should include article titles and abstracts (Zupic & Čater, 2015). To select the papers we decided to use the construct “nascent entrepreneurship” for several reasons. We are conscious that many terms are used in the

literature as synonymous (Carter et al., 1996) however most of them are common terms that refer to different concepts (Ronda-Pupo & Guerras-Martin, 2012). For example, the word “start-up” could be too general for our research. This make create problems in the process of selection. Furthermore, in the scholar community there is the possibility that authors, influenced by peers, use terms that well-suit to their school of thoughts (Ronda-Pupo & Guerras-Martin, 2012). “Nascent entrepreneur” is a consolidated construct with a clear definition (Reynolds, 2009; Wagner, 2007) that could represent a specific scholar community.

Several books and papers have already used this specific construct. For example, the literature review based on nascent entrepreneurship of Davidsson and Gordon (2012) or the book of Wagner (2004) “Nascent entrepreneurs”. For these reasons we decided to limit our sample to only those publications which contain the combination term “nascent entrepr\*” in either the title, keywords or abstract fields of the Web of Science database. Hence, authors who seek to contribute to nascent entrepreneurs research at the highest level of development are likely to refer to the term “nascent entrepr\*” in at least one of these fields. The use of one key-word for analysis is often used in bibliometric literature (Kovács et al., 2015; Shiau, Dwivedi, & Tsai, 2015). In this way, we still avoid going outside the limit of the topic area that we proposed to analyse ensuring that no ‘false positives’ are captured (Kovács et al., 2015).

Following the literature (Appio, Martini, Massa, & Testa, 2016; Minniti, 2016; Perianes-Rodriguez, Waltman, & van Eck, 2016; Waltman, van Eck, & Noyons, 2010), we use the computer techniques described by Waltman and Van Elk (2016) to map the intellectual structure of the discipline. The computer software VOSviewer has been used to develop bibliographic mappings in a variety of studies (Appio et al., 2016; Kovács et al., 2015; Mamtora et al. 2014; Rafols et al. 2012; Wuehrer and Smejkal 2013). The closeness of document points on such maps are algorithmically related to their similarity as perceived by

citers (Appio et al., 2016; Perianes-Rodriguez et al., 2016; Small, 1973; Waltman et al., 2010).

We obtained a preliminary set of 268 articles. We filter the citation both to limit the analysed set to a manageable size but also to ensure that only cited publications containing enough citation data for the analysis are cited (Zupic & Čater, 2015). We reduced to the most cited articles (Acedo et al., 2006). We considered all the articles with 40 or more citations (Di Guardo & Harrigan, 2012). The number of citations is reduced to 30 if the articles are published after 2005 and 20 if the articles are published after 2010, coherent with other bibliometric studies carried out with similar time horizons (Acedo et al., 2006; Culnan, 1986; Rowlands, 1999). The decision to decrease the number of citations for younger paper is due to the fact that the older a document, the longer the period of citations' accumulation; more recent publications have had less time to leave their marks (Vogel & Güttel, 2012). This allows reducing the biased method. Using this first filter the sample contained 68 articles. In the second stage, the associations between articles can be represented by a frequency matrix of co-occurrences where we took into account the numbers of times the references were cited together- or not (Gregoire et al, 2006; Loi et al., 2016; Small, 1973). Zero in a cell means that the articles have never been cited together. All the articles with more than 66% of zeros have been eliminated (Rowlands, 1999) to reduce the probability of including an extraneous school of thought. The sample size was reduced from 68 to 59.

#### **4 Results**

This section contains the results of the co-citation analysis. As we have explained in the section on methodology, 59 articles have been selected. The complete list of articles is reported in Table 1.

**Table 1**

<b>Authors</b>	<b>Year</b>	<b>Journal s</b>	<b>Title</b>
Arenius and Minniti	2005	Sbe	Perceptual variables and nascent entrepreneurship
Bergmann and Sternberg	2007	Sbe	The changing face of entrepreneurship in Germany
Block and Koellinger	2009	Kyklos	I Can't Get No Satisfaction-Necessity Entrepreneurship and Procedural Utility
Bosma and Schutjens	2011	Aors	Understanding regional variation in entrepreneurial activity and entrepreneurial attitude in Europe
Brush et al.	2008	Jobv	Properties of emerging organizations: An empirical test
Caliendo et al.	2009	Sbe	Risk attitudes of nascent entrepreneurs-new evidence from an experimentally validated survey
Carter et al.	1996	Jobv	Exploring start-up event sequences
Carter et al.	2003	Jobv	The career reasons of nascent entrepreneurs
Cassar	2006	Jobv	Entrepreneur opportunity costs and intended venture growth
Cassar	2007	E&Rd	Money, money, money? A longitudinal investigation of entrepreneur career reasons, growth preferences and achieved growth
Cassar	2010	Smj	Are Individuals Entering Self-Employment Overly Optimistic? An Empirical Test Of Plans And Projections On Nascent Entrepreneur Expectations
Chlosta et al.	2012	Sbe	Parental role models and the decision to become self-employed: The moderating effect of personality
Davidsson and Honig	2003	Jobv	The role of social and human capital among nascent entrepreneurs
De Clercq and Arenius	2006	Isbj	The role of knowledge in business start-up activity
DeTienne et al.	2007	Et&P	The role of gender in opportunity identification
Dimov	2010	Joms	Nascent Entrepreneurs and Venture Emergence: Opportunity Confidence, Human Capital, and Early Planning
Dimov	2011	Et&P	Grappling With the Unbearable Elusiveness of Entrepreneurial Opportunities
Edelman et al.	2010	Josbm	Start-up Motivations and Growth Intentions of Minority Nascent Entrepreneurs
Edelman and Yli-Renko	2010	Et&P	The Impact of Environment and Entrepreneurial Perceptions on Venture-Creation Efforts: Bridging the Discovery and Creation Views of Entrepreneurship
Fitzsimmons and Douglas	2011	Jobv	Interaction between feasibility and desirability in the formation of entrepreneurial intentions
Grilo and Thurik	2008	I&Cc	Determinants of entrepreneurial engagement levels in Europe and the US
Honig and Karlsson	2004	Jom	Institutional forces and the written business plan
Kim et al.	2006	Sbe	Access (not) denied: The impact of financial, human, and cultural capital on entrepreneurial entry in the United States
Koellinger	2008	Sbe	Why are some entrepreneurs more innovative than others?
Koellinger et al.	2007	Joep	I think I can, I think I can: Overconfidence and entrepreneurial behavior
Korunka et al.	2003	Et&P	The entrepreneurial personality in the context of resources, environment, and the startup process - A configurational approach
Levie and Autio	2011	Joms	Regulatory Burden, Rule of Law, and Entry of Strategic Entrepreneurs: An International Panel Study
Liao and Gartner	2006	Sbe	The effects of pre-venture plan timing and perceived environmental uncertainty on the persistence of emerging firms
Liao and Welsch	2005	Josbm	Roles of social capital in venture creation: Key dimensions and research implications
Lichtenstein et al.	2006	Jobv	Measuring emergence in the dynamics of new venture creation

Lichtenstein et al.	2007	Jobv	Complexity dynamics of nascent entrepreneurship
Linan et al.	2011	Ie&Mj	Factors affecting entrepreneurial intention levels: a role for education
McGee et al.	2009	Et&P	Entrepreneurial Self-Efficacy: Refining the Measure
Minniti and Nardone	2007	Sbe	Being in someone else's shoes: the role of gender in nascent entrepreneurship
Mueller	2006	Sbe	Entrepreneurship in the region: Breeding ground for nascent entrepreneurs?
Newbert	2005	Josbm	New firm formation: A dynamic capability perspective
Parker	2011	Jobv	Intrapreneurship or entrepreneurship?
Parker and Belghitar	2006	Sbe	What happens to nascent entrepreneurs? An econometric analysis of the PSED
Reynolds et al.	2004	Sbe	The prevalence of nascent entrepreneurs in the United States: Evidence from the panel study of entrepreneurial dynamics
Rotefoss and Kolvereid	2005	E&Rd	Aspiring, nascent and fledgling entrepreneurs: an investigation of the business start-up process
Samuelsson and Davidsson	2009	Sbe	Does venture opportunity variation matter? Investigating systematic process differences between innovative and imitative new ventures
Santarell and Vivarelli	2007	I&Cc	Entrepreneurship and the process of firms' entry, survival and growth
Schjoedt and Shaver	2007	Et&P	Deciding on an entrepreneurial career: A test of the pull and push hypotheses using the panel study of entrepreneurial dynamics data
Shinnar et al.	2012	Et&P	Entrepreneurial Perceptions and Intentions: The Role of Gender and Culture
Sorensen	2007	Asq	Bureaucracy and entrepreneurship: Workplace effects on entrepreneurial entry
Stenholm et al.	2013	Jobv	Exploring country-level institutional arrangements on the rate and type of entrepreneurial activity
Stephan and Uhlaner	2010	Joib	Performance-based vs socially supportive culture: A cross-national study of descriptive norms and entrepreneurship
Thompson, Edmund R.	2009	Et&P	Individual Entrepreneurial Intent: Construct Clarification and Development of an Internationally Reliable Metric
Townsend et al.	2010	Jobv	To start or not to start: Outcome and ability expectations in the decision to start a new venture
Uhlaner and Thurik	2007	Joee	Postmaterialism influencing total entrepreneurial activity across nations
van Gelderen et al.	2005	Sbe	Success and risk factors in the pre-startup phase
van Stel et al.	2005	Sbe	The effect of entrepreneurial activity on national economic growth
van Stel et al.	2007	Sbe	The effect of business regulations on nascent and young business entrepreneurship
Verheul et al.	2012	Joep	Explaining preferences and actual involvement in self-employment: Gender and the entrepreneurial personality
Wagner	2007	Sbe	What a difference a Y makes-female and male nascent entrepreneurs in Germany
Wennberg et al.	2010	Jobv	Reconceptualizing entrepreneurial exit: Divergent exit routes and their drivers
Wennekers et al.	2005	Sbe	Nascent entrepreneurship and the level of economic development
Westhead et al.	2005	Josbm	Decisions, actions, and performance: Do novice, serial, and portfolio entrepreneurs differ?
Westhead and Wright	1998	Jobv	Novice, portfolio, and serial founders: Are they different?

Table 2 shows the list of the Journals where the most co-cited articles are published. Over 60% of the articles are published in 3 high rated journals: Small business economics, Journal of business venturing and Entrepreneurship: Theory and practice.

**Table 2**

Journal	Number articles	of %
Small Business Economics	17	28,80%
Journal Of Business Venturing	13	22,00%
Entrepreneurship Theory And Practice	8	13,60%
Journal Of Small Business Management	4	6,80%
Entrepreneurship And Regional Development	2	3,40%
Industrial And Corporate Change	2	3,40%
Journal Of Economic Psychology	2	3,40%
Journal Of Management Studies	2	3,40%
Administrative Science Quarterly	1	1,70%
Annals Of Regional Science	1	1,70%
International Entrepreneurship And Management Journal	1	1,70%
International Small Business Journal	1	1,70%
Journal Of Evolutionary Economics	1	1,70%
Journal Of International Business Studies	1	1,70%
Journal Of Management	1	1,70%
Kyklos	1	1,70%
Strategic Management Journal	1	1,70%

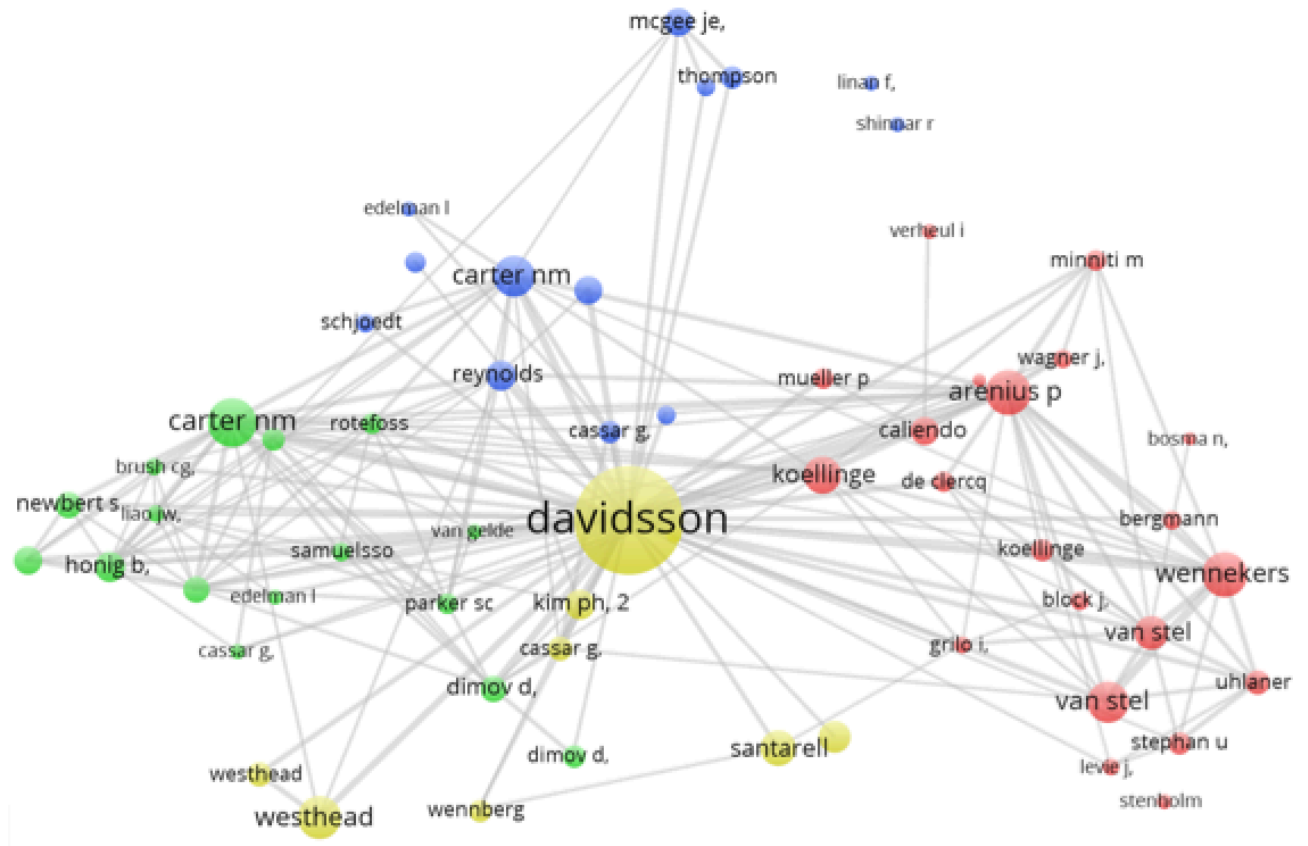
Forty-two percent of the 59 articles are from US area. In the EU area, Germany is in the lead with 15.6 % of publications. Followed by England 12.2 % and Spain with 10.8 %.

For ease of interpretation, results can be graphed on a two-dimensional map to show co-citation links among articles.

The two-dimensional map of VOSviewer is useful to better define trends and gaps in the topic. Using cluster analysis we found four groups: (1) *Exogenous and Institutional factors*, (2) *Processes and Activities*, (3) *Cognitions antecedents* and (4) *Human and social capital drivers*.



Map 1



It is also interesting to take into consideration the distribution of journals in the clusters. As it is evident in Table 3, each group has a different predominance of a specific journal. For example, cluster 1 is predominated by *Small business economics* (ten publications); the *Journal of business venturing* gets the higher level of citations in cluster 2 and 4; instead, *Entrepreneurship: theory and practice* is the most cited in cluster 3 with seven publications. These first analyses give a preliminary idea of as each journal along with a specific orientation matched with a sub-group and/or a sub-topic.

**Table 4**

<b>Group 1</b>	<b>Journal</b>	<b>Group 2</b>	<b>Journal</b>	<b>Group 3</b>	<b>Journal</b>	<b>Group 4</b>	<b>Journal</b>
Arenius And Minniti	Sbe	Brush Et Al.	Jobv	Carter Et Al.	Jobv	Cassar	Jobv
Caliendo Et Al.	Sbe	Carter Et Al.	Jobv	Cassar	E&Rd	Davidsson And Honig	Jobv
Chlosta Et Al.	Sbe	Cassar	Smj	Detienne Et Al.	Et&P	Kim Et Al.	Sbe
De Clercq And Arenius	Isbj	Dimov	Joms	Edelman And Yli-Renko	Et&P	Parker	Jobv
Koellinger Et Al.	Joep	Dimov	Et&P	Fitzsimmons And Douglas	Jobv	Santarell And Vivarelli	I&Cc
Minniti And Nardone	Sbe	Edelman Et Al.	Josbm	Korunka Et Al.	Et&P	Sorensen	Asq
Mueller	Sbe	Honig And Karlsson	Jom	Liao And Gartner	Sbe	Wennberg Et Al.	Jobv
Verheul Et Al.	Joep	Liao And Welsch	Josbm	Linan Et Al.	Ie&Mj	Westhead Et Al	Josbm
Bergmann And Sternberg	Sbe	Lichtenstein Et Al.	Jobv	Mcgee Et Al.	Et&P	Westhead And Wright	Jobv
Block And Koellinger	Kyklos	Lichtenstein Et Al.	Jobv	Reynolds Et Al.	Sbe		
Bosma And Schutjens	Aors	Newbert	Josbm	Schjoedt And Shaver	Et&P		
Grilo And Thurik	I&Cc	Parker And Belghitar	Sbe	Shinnar Et Al.	Et&P		
Koellinger	Sbe	Rotefoss And Kolvereid	E&Rd	Thompson, Edmund R.	Et&P		
Levie And Autio	Joms	Samuelsson And Davidsson	Sbe				
Stenholm Et Al.	Jobv	Townsend Et Al.	Jobv				
Stephan And Uhlaner	Joib	Van Gelderen Et Al.	Sbe				
Uhlaner And Thurik	Joee						
Van Stel Et Al.	Sbe						
Van Stel Et Al.	Sbe						
Wennekers Et Al.	Sbe						

**Cluster 1** *Exogenous and Institutional factors*

The most commonly research subfield in nascent entrepreneurship is *Exogenous and Institutional factors* (Cluster 1) with 21 articles (35.59 % of total articles) published from 2005 through to 2013.

This cluster, which represents the youngest cluster of the map, is the most homogeneous cluster in terms of journals, more than 50 % of the articles are published in *Small Business Economics*. Furthermore, it is the cluster with the highest number of average citations. Cluster 1 is presented as a polycentric group where the study of nascent entrepreneurship is addressed in two different ways. On the top of the group authors pay attention to the exogenous factors and all the personal characteristics that push an individual to take the decision to become an entrepreneur. In specific way, the attention is focused on two factors: role models and external knowledge (networking) (Bosma & Schutjens, 2011; Chlosta, Patzelt, Klein, & Dormann, 2012; De Clerq & Arenius, 2006; Mueller, 2006).

In the lower part of the cluster the approach of the authors changes. In this area scholars study entrepreneurship considering external factors, institutional contexts and regional or national characteristics. Authors are interested in understanding the effects that countries and political actions may have on the development of entrepreneurship. More precisely, regulations (van Stel, Storey, & Thurik, 2007), culture and norms (Stenholm, Acs, & Wuebker, 2013; Stephan & Uhlaner, 2010) and administrative procedures (van Stel et al., 2007).

In this clusters authors often use the quantitative method of *logistic regression*. This method helps scholars to compare nascent entrepreneurs and non-entrepreneurs or necessity entrepreneurs and opportunity entrepreneurs.

The papers of this cluster reveal several factors that affect the decision of an individual to become an entrepreneur. Some individual characteristics as gender age and education can influence the entrepreneurial propensities of the individuals (Arenius & Minniti, 2005);

knowledge based factors have also a strong impact on the decision to become an entrepreneur (De Clerq & Arenius, 2006). Furthermore, parental role models and less risk aversion increase the probability of a person to become an entrepreneur (Chlosta et al., 2012; Caliendo et al., 2009). Moreover, the decision of become entrepreneur is also affected by institution and external environment. Negative correlation is shown between GDP of countries and nascent entrepreneurship activity (Bergmann & Sternberg, 2007); the level of rates of early stage entrepreneurship is higher in urban regions (Bosma & Schutjens, 2011) and regulations of the country have a significant effect on the entrepreneurial entry (Levie & Autio, 2011).

### **Cluster 2** *Processes and Activities*

In this cluster authors describe the *processes and activities* in which nascent entrepreneurs are involved. It is the second most researched subfield in the field of nascent entrepreneurship with 16 articles (27.11 % of total articles).

It is the longest-running cluster, the oldest publication dates back to 1996. Despite this, the vast majority of articles were published in 2010. The cluster presents a large proportion of heterogeneous journals. The 16 articles are characterized by quantitative approaches and longitudinal studies.

The scholars in these papers point their attention towards the activities in which nascent entrepreneurs are involved (Carter et al., 1996, Lichtenstein et al. 2007; Lichtenstein et al. 2006), how these activities are organized (Brush et al., 2008; Newbert, 2005), planning (Honig and Karlsson, 2004) and when the activities take place (timing) (Liao & Gartner, 2006; Townsend et al., 2010; Brush et al., 2008; Carter et al., 1996; Parker & Belghitar, 2006). Some authors point out differences between entrepreneurs due to the persistence in continuing the business (Liao & Gartner, 2006; Carter and al., 1996; Van Gelderen et al. 2005; Rotefoss and Kolvereid, 2005).

From the cluster emerges an extreme variability and complexity of this specific phase with little consensus between the authors about the implementation of the gestation phase of the process. For example, Rotefoss and Kolvereid (2005) find that entrepreneurial experience is an important factor for predicting the outcome of the business start-up process. However, Dimov (2010) find that entrepreneurial experience have only indirect effects in entrepreneurial emergence. Liao et al. (2006) find that nascent entrepreneurs that complete a business plan are more likely to persist in the process of the emergence. However, no evidence it is found in terms of profitability for nascent entrepreneurs that produce business plan during a two years initial periods (Honig & Karlsson, 2004). Some authors of the cluster discover that a common set of gestation activities exist (Brush et al., 2008; Carter et al., 1996 ; Newbert, 2005) and entrepreneurs that organize slowly (Brush et al., 2008) or in specific sequence (Newbert, 2005) have higher probability of success.

### **Cluster 3** *Cognitions antecedents*

Cluster 3 is made up by 13 articles. This group has the lowest number of citations. The first article was published in 2003 and the last one in 2012. The group is heterogeneous in terms of publishing journals.

This cluster has largely focused on issues related to the cognitive and psychological characteristics of the individuals. Some papers contribute to discover the factors and perceptions that determine the personal decision to become an entrepreneur (Detienne, 2007; Carter, 2003; Cassar, 2007). Others contribute to the literature of entrepreneurial intentions linking it with self-efficacy, education and perception barriers. Most of the authors use a quantitative approach. Several authors try to understand the reasons that push nascent entrepreneurs to follow this career. According to Schjoedt et al. (2007) it is not the low job satisfaction that push individual to become nascent entrepreneurs. From the cluster emerges that financial reasons are more important for nascent men than for women (Carter et al.,

2003), nascent entrepreneurs rated choices reasons concerning roles and recognitions lower than non entrepreneurs (Carter et al., 2003). Financial reasons are also the key determinant that explain preference in key growth (Cassar, 2007). Furthermore, differences in motivations are found between black and white entrepreneurs both in starting and intentions to growth (Edelman et al., 2010).

#### **Cluster 4** *Human and social capital drivers*

Cluster 4 with only 9 articles is the smallest in numbers but the most heterogeneous in terms of journals' publications. It is composed by the oldest articles. In the last years the cluster has been characterized by a higher growth of citations.

The cluster contributes to the understanding of human capital aspects (Davidsson & Honig, 2003; Kim, Aldrich, & Keister, 2006; Parker, 2011; Wennberg, Wiklund, DeTienne, & Cardon, 2010; Westhead & Wright, 1998), social capitals (Davidsson & Honig, 2003; Kim et al., 2006) and financial capitals (Cassar, 2006; Kim et al., 2006) that may influence the emergent phase of the entrepreneurial process.

## **5 Discussion**

In the paper it is presented the intellectual structure of nascent entrepreneurship research resulting from a co-citation analysis covering the period 1991- 2015.

In his paper, Gartner (1985) highlights how most of the past research has been unidimensional, focusing on a single aspect of new venture creation: differences between entrepreneurs and non-entrepreneurs (decision to be or not an entrepreneur). Gartner surmount this aspect showing a multidimensional and more complex phenomenon. Our results empirically confirm the existence of the multidimensional aspect. However, we find some differences between Gartner's framework and our research. We discover that research that focuses on differences between entrepreneurs and non-entrepreneurs is mainly in the same cluster (Cluster 1). In this cluster authors pay attention to various factors: individual and

personal characteristics, macro-factors, political and culture factors and norms and administrative procedures. This means that scholars that study decision to be or not an entrepreneur often follow the same school of thought that links them despite they are studying different characteristics. However, the different approach of the scholars emerges from the top to the bottom of Cluster 1. On the top, the factors are more connected to psychological and cognitive aspects. In this area, authors focus their attention on external role models (Wagner, 2007), external knowledge and networking (Bosma & Schutjens, 2011; Chlosta, Patzelt, Klein, & Dormann, 2012; De Clerq & Arenius, 2006). Whereas on the bottom, the approach of the papers changes. In this area, the research is made following a macroeconomic level. Authors are interested in understanding the effects of political actions on the development of nascent entrepreneurship as: regulations and new firm formations (van Stel, Storey, & Thurik, 2007), administrative procedures (van Stel, Carree, & Thurik, 2005), culture and norms supporting NEs (Stephan & Uhlaner, 2010) and regulators and roles affecting the nascent entrepreneurship rate (Stenholm, Acs, & Wuebker, 2013). In some papers of the bottom of this cluster we find specific characteristics in line with the Gartner's perspective of environment: "outside set of conditions to which the organization must adapt" (Gartner, 1985 pp. 700).

In Block & Koellinger (2008) and Grilo & Thurik (2008) emerge the financial factors, this topic acts as a bridge between cluster 1 and cluster 4.

Cluster 4 is presented as a polycentric cluster. In this area of the map authors focus their attention on the human, social and financial capital. This is in line with the results of Davidsson (2006). However, Davidsson (2006) identifies "human, social and financial capital" as a sub-group of *person factors leading to nascent entrepreneurship*. We find that this area has a main position in the topic of nascent entrepreneurship. This is also more evident looking for the central position of Davidsson & Honig (2003). In this cluster, the aim

of some authors is to understand how these factors affecting the “entrepreneurs entry” (Kim, Aldrich, & Keister, 2006). Others authors (Wennberg, Wiklund, DeTienne, & Cardon, 2010) try to understand how these factors affecting the way out of entrepreneurs and others study how the factors are drivers that make entrepreneurs novice, portfolio and serial founders (Westhead, Ucbasaran, & Wright, 2005; Westhead & Wright, 1998). The theme of human capital is expressed by Parker & Belghitar (2006) which acts as a bridge between cluster 2 and cluster 4.

Cluster 2 is mainly focused on the venture creation process. In the past, several authors focused their attention in this topic (Davidsson, 2006; Davidsson & Gordon, 2012; Gartner, 1985). Some authors in this cluster try to discover the actions undertaken by individuals to start their venture. This goal is in line with the process perspective described by Gartner (1985). In the cluster, Samuelsson & Davidsson (2009) and Dimov (2011; 2010) highlights why opportunities and creation of ideas are not only a single event but they must be considered as a continuing evolution and for this reason they must be studied as a process. From these papers emerges the longitudinal perspective highlighted in the literature reviews of Davidsson (2006) and Davidsson & Gordon (2012). Furthermore, Edelman & Yli-Renko (2010) consider both discovery and creation opportunities in order to understand the role of these factors in the venture creation process. On the left side, the attention of the authors is more focused on the organization and planning. Authors try to measure and time activities in order to clarify the process of the activities (Honig & Karlsson, 2004; Liao & Gartner, 2006; Newbert, 2005). This specific topic is labelled by Davidsson (2006) *Process characteristics and outcomes*. Carter et al. (1996) consider the process in order to study the different personalities of nascent entrepreneurs, distinguish between people who succeed, those who are still trying or those who give up. This paper acts as a bridge between cluster 2 and cluster 3. Cluster 3 is focused on all the exogenous cognitive and psychological factors that push the



individual to become an entrepreneur or that create in the individual the intention to become. Some authors highlight that the perception of the individuals may affect their decisions (Fitzsimmons & Douglas, 2011; Liñán, Urbano, & Guerrero, 2011; McGee, Peterson, Mueller, & Sequeira, 2009; Shinnar, Giacomini, & Janssen, 2012; Thompson, 2009). Furthermore, some authors try to clarify the concepts of intention (Thompson, 2009) and self-efficacy (McGee et al., 2009). This specific cluster take also in consideration the specific subjects of *motivations & perceptions* already labelled by Davidsson (2006).

An area of Davidsson's (2006) literature review is devoted to other topics: gender, teams and ethnicity. Our research show several articles related to gender (Minniti & Nardone, 2007; Shinnar et al., 2012; Verheul et al., 2012; Wagner, 2007) and ethnicity (Edelman et al., 2010; Shinnar et al., 2012). Furthermore, from our research several results that led to new insight about characteristics of business founders emerge. Despite this, we don't find any article related to the topic "team". This result may be explained by the fact that authors in nascent entrepreneurship research are mainly focus on personal characteristics (Davidsson and Gordon, 2012). We can suppose that researches of "Venture creation teams" have been labelled using other constructs. This result leads us to regard "teams" as a different school of thought to nascent entrepreneurship.

## **6 Limits**

Some methodological limitations should be pointed out in order to make the right suggestions for future studies. Firstly, the data used in this analysis was retrieved from one single database: Thompson – ISI. This dataset considers journals with an official impact factor. However, future analysis can implement the study using broader sources of citation data and other reputed datasets (i.e. Scopus, Google Scholar).

Secondly, we used journals covered by the Social Science Citation Index (SSCI). We consider these journals the hard core of the topic. However, future research can implement

this study considering book chapters, conference papers or others sources to have a wide overview of the field.

Finally, this study focuses on a unique period from 1990 to 2015. The first publication of nascent entrepreneurship topic is dated 1992. This means that our research consider the full period where the construct of nascent entrepreneur were used. Future research could implement this research using a different method or dividing the time-span in sub-groups.

## **7 Conclusion**

The aim of our research was to investigate the intellectual structure of the literature in order to empirically clarify the interactions of the researches in the multidimensional phenomenon of nascent entrepreneurship. Thanks to this study we discover the structure of the topic and the subfields that constitute it, showing an overview of the hard core of the literature of nascent entrepreneurship. Using a more objective and scientific method, this research identifies the authors that play the major role in this line of research, their articles and the relationship and connection between them. On the one hand, some results confirm the literature review already conducted with traditional methods. For example, we confirm some previous results about the multidimensional approach of the study or the distinction between personal factors and process (already existing in Gartner, 1985; Davidsson et al., 2006;2012). On the other hand, it provides significant new elements. Different schools of thought emerge from this study. Furthermore, the paper helps to identify authors that play a pivotal role in bridging two or more sub-areas of research. In fact we find some researches that are in a border between two clusters. These researches are the “invisible links” that connect the sub-topics of nascent entrepreneurship. Moreover, this research can help future scholars to discover the isolated areas of the topic, the developing of the literature and where the future researches can be directed.

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## **Chapter 2: Supporting Women and Entrepreneurial Culture: Two Different Effects in Nascent Entrepreneurship.**

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### **Abstract**

In this paper we try to discover the effects of institutions on entrepreneurs' decisions and how the decisions to become entrepreneurs occurs according to the gender. We consider two types of institutions: entrepreneurial culture, (representing the normative and cognitive aspects of institutions), and the support for women entrepreneurs (representing the regulatory aspect of institutions). We recognise that entrepreneurial culture could have a generic effect influencing both men and women. On the other hand, supporting women entrepreneurs have positive effects on women's decisions but negative effects on men's decisions. Furthermore, we find that both the factors have a generally positive effect and they could help to cover the gap between men and women. For this study, we use data from the Global Entrepreneurship Monitor database (GEM). The dataset is composed by 239.326 adults (18-65 years old) from more than 90 countries. Contributions and implications are discussed.

### **Keywords**

Nascent Entrepreneur; Women Entrepreneur; External Factors; Entrepreneurial Culture; GEM

### **1 Introduction**

In the past, scholars have highlighted how institutions might constrain or empower certain types of behaviour (Hofstede, 1980; Welter, 2011). Normative, cognitive and regulative aspects could affect people's decision for starting a business (Hechavarria & Reynolds, 2009). Several scholars have studied these effects (Baughn, Chua, & Neupert, 2006; Hechavarria & Reynolds, 2009; Hofstede & McCrae, 2004). However, it should be pointed out that different



kinds of institutions could affect people's decision in a different way (Welter, 2010). Furthermore, several scholars discover that these factors affect in a different way men and women (Verheul et al. 2005). Despite this, the literature that compares male and female entrepreneurship is mainly based on micro level studies and it focuses on distinctive characteristics of personality such as: motivations, personality traits and experience (Verheul et al. 2005). A few studies have investigated the influence of macro-level factors on female entrepreneurship (Kovalainen et al., 2002; Minniti et al., 2005; Reynolds et al., 2002; Verheul et al., 2005). Environment, cultural values and beliefs of societies have often been studied without considering the different effects that these factors might have in nascent entrepreneurship according to the gender (Figueroa-Armijos & Johnson, 2016; Mueller & Thomas, 2000). Societies are different depending on culture (Shane 1993; Tiessen 1997; Davidsson & Wiklund 1997; Uhlaner & Thurik 2007) and among some of them, the stereotypical beliefs of differences between men and women is more entrenched (Correll & Ridgeway, 2003; Conway, Pizzamiglio, Mount, 1996; Shane, 1993; Shapero & Sokol, 1982; Thornton, Ribeiro, Urbano 2011; Wagner & Berger, 1997; William & Best, 1990).

The institutions embedded in society may indeed affect women and men aspiration and inclination towards a particular job or profession (Cejka & Eagly 1999; Fagenson and Marcus 1991; Gupta, Turban, Wasti, Sikdar, 2009; Minniti, 2010; Mueller & Dato-on 2013; Scherer, Brodzinski, Wiebe, 1990). The number of nascent women entrepreneurs could increase, if women get equal opportunities and are more encouraged to become entrepreneurs (Carrasco, 2014; Minniti & Nardone, 2007).

But how institutions affect the probability of people to become entrepreneurs according to their gender? What is the effect of supporting women entrepreneurs on men population? And may institutions reducing the gaps between men and women entrepreneurs?

In this study, we try to find the answers for these questions considering a more complete

view of the institutional factors.

First of all, we study how people's probability to start a business is affected by the level of entrepreneurial culture of the country. Second, we use two different datasets for discovering the effects of entrepreneurial culture in men and women populations. Third, we study how the effect of the culture can widen or reduce the gender gap on starting a business.

Furthermore, we study how the level of support in women entrepreneurship affects, in general, the probability to be an entrepreneur. Moreover, we try to understand how the level of support for women entrepreneurs affects the probability of men and women to start a new business.

Finally, we try to discover how the support for women entrepreneurs could help to cover the gender's gap on starting a business.

The study helps to cover the gap existing in female entrepreneurship literature and opens up additional research opportunities in order to explore the role of women in nascent entrepreneurship. Furthermore, the research theoretically contributes on advancing knowledge of the institutional factors that affect female and male entrepreneurship. The paper helps to highlight the differences between societies that support cultural entrepreneurship and societies that support women entrepreneurship. Furthermore, this paper contributes to discover how gender is not only differently affected by individual or personal factors but also by specific external factors.

## **2 Literature review**

### **2.1 Institutional theory**

The idea that individuals and organizations being affected (and are affected) by their social context is not new. Both entrepreneurship practitioners and public policy-makers have shown a growing interest in the contextual factors in which entrepreneurial activities take

place. Scholars have often used institutional theory for studying external factors and social context.

Institutional theory is one of the most used theories in entrepreneurship research for studying the role of social, political and economic system and how these systems affects the entrepreneurial activities (Baughn et al., 2006). This theory is concerned with regulatory, social and cultural influences (Bruton et al., 2010). These forces are summarized by Scott (2007) in three pillars: regulatory, normative and cognitive (Scott, 2007).

The regulatory pillar considers government legislation and industrial agreement and standards; the normative pillar represents models of organizational and individual behaviour based on obligatory dimensions of social, professional, and organizational interaction; and the cognitive pillar represents models of individual behaviour based on subjectivity and constructed rules that limit appropriate beliefs and actions (Bruton et al., 2010). The main intention of the regulatory pillar is to incentivize or to sanction organizations and individuals (Brutom et al., 2010). For example, governments often promote entrepreneurial activities through the simplification of procedures or through special programs for supporting entrepreneurial activity. This support is often used to overpass the barriers and prejudice existing between minorities and communities (Verheul et al., 2005). The government's support for women entrepreneurs is a clear example of this.

The other two institutional pillars, normative and cognitive pillars, are perceived as "objective and external to the actors" (Bruton et al., 2010 pp.11). Both normative and cognitive structures are often transmitted by culture (Bruton et al., 2010).

From previous literature emerges that several external factors may affect the decision to become entrepreneur (Thornton et al., 2011). Some of these factors affect generically the behaviour of all the people, for example, the general normative support for entrepreneurship activity (Bruton et al., 2010); others might affect only specific categories of entrepreneurs, a

clear example is the specific programs organized by the government in support to specific categories of entrepreneurs (Verheul et al., 2005).

### *2.1.1 Entrepreneurial culture*

Scholars have long pointed out the importance of socio-cultural factors while taking the decision to create new businesses by arguing that entrepreneurship is embedded in a social context (Aldrich & Zimmer, 1986; Thornton et al., 2011): “Considering that entrepreneurship is a social phenomenon, entrepreneurial variations and development are better understood by considering the social environment in which the firm is created (Berger, 1991; Shapero & Sokol, 1982; Steyaert, 2007; Thornton et al., 2011)”.

From a cultural anthropological perspective, culture is seen as a collective mental knowledge developed by a group of people exposed to a similar context (Geertz, 1973; Reckwitz, 2000; Schatzki & Natter, 1996). This collective mental knowledge relates to the way societies organize knowledge and social behaviour (Kroeber & Kluckhohn, 1952) into a fairly consistent set of cognitive orientations that reflect "a broad tendency to prefer certain states of affairs over others" (Hofstede, 1980, p. 19; Mitchell, Smith, Seawright, Morse, 2000).

Much of the research in entrepreneurship that considers cultural variables has followed Hofstede's (1980, 2001) seminal work showing how culture is manifested in various forms, and how cultural values at individual or societal level are influenced by national culture (Thornton et al., 2011). According to Hofstede's cultural differences across societies, these forms can be reduced to four quantifiable dimensions: uncertainty avoidance, individualism, masculinity and power distance (Thornton et al., 2011).

These environmentally relevant patterns of behaviour lead to the formation of different cultural values in different societies, some of which influence the decision to create new

businesses. Thus, culture, as distinct from political, social, technological or economic context, is relevant for economic behaviour and entrepreneurship (Shane, 1993; Shapero & Sokol, 1982; Thornton et al., 2011).

The effects of such cultural complexity are being explored by, economists, sociologists who tried to show how culture provides justifications for individuals' actions (Berger, 1991; Carsrud & Johnson, 1989).

The environmental drivers of entrepreneurship, especially the social and cultural factors, have been the focus of the Organisation for Economic Co-operation and Development (OECD) and the European Union (EU) who are interested to find how these factors influence the individual career choice to be an entrepreneur and create a new business (European Commission, 2004, 2006; OECD, 1998, 2000; Thornton et al., 2011).

In the last years studying cultural factors in entrepreneurship has become easier for scholars; thanks to the development of the *Global Entrepreneurship Monitor* (GEM) (Alvarez, Urbano, Amòros, 2014). This project provides internationally comparable data on entrepreneurial activity (Reynolds, Hay, Camp, 1999, Reynolds et al. 2005) using empirical data to assess the level of entrepreneurial activity across countries. The project has identified several variables related to socio-cultural environment that are useful to determine the decision to start a business (Alvarez et al., 2014). Some of these variables help to discover the level of entrepreneurial culture of the countries. A country is considered more entrepreneurial when people are supported and encouraged to take entrepreneurial risks, to be more creative and innovative and when self-sufficient, autonomy and personal initiatives are emphasized (GEM Report). These characteristics might affect people's decisions for starting a business.

H1: Entrepreneurial culture affects people's decisions for starting a business.

Furthermore, entrepreneurial culture might affect both men and women's decisions (Bruton et al., 2010). This encourages us to suppose that a higher level of entrepreneurial culture push both men and women to create more business.

H2: A higher entrepreneurial culture positively affects men's decision to start a business.

H3: A higher entrepreneurial culture positively affects women's decision to start a business.

However, the culture of society could reinforce certain personal characteristics or behaviours and penalizing others (Díaz-García & Jiménez-Moreno, 2010). Usually, masculine traits and characteristics are privileged over the feminine ones (Díaz-García & Jiménez-Moreno, 2010). Considering that a higher entrepreneurial culture emphasizes characteristics that are considered masculine (i.e. propensity to risk) (Ahl, 2006), we suppose that men of these societies are more pushed to create business than women. Consequently, entrepreneurial culture could widen the gap between men and women's decisions.

H4: Entrepreneurial culture widens gender gap's decision for starting a business.

### *2.1.2 Support for women entrepreneurs*

The literature of female entrepreneurship was underdeveloped before 1980 (Espiritu-Olmos & Sastre-Castillo X Moore, 1999). The lack of interest for the topic was also due to the fact that the entrepreneurship topic have had masculine connotations (Ahl, 2006).

However, in the last years, there has been an increase in publications (Verheul & Thurik, 2001) and scholars have started to study the differences of gender in order to discover the several reasons that make male population more inclined to be an entrepreneur (Baron et al., 2001).

Authors have found several variables that influence female entrepreneurship (Verheul et al., 2005). Despite this, relatively few studies have investigated female entrepreneurship at the macro level (Ahl, 2006; Hughes et al., 2012). Furthermore, these studies do not mention the differences in determinants of female and male entrepreneurial activities (Verheul et al., 2005) and little considered the role of contextual embeddedness of female entrepreneurship (Yousafzai Saeed, Muffatto, 2015; Welter & Smallbone, 2011). However, some evidence shows how the environment and the national culture is a factor useful to understand the “gender gap” existing in entrepreneurial activities (Mueller, Rosenbusch, Bausch, 2013).

Mueller (2013) has shown how the gap between men and women in the prevalence of entrepreneurial traits varies across cultures and countries (Mueller et al., 2013). In fact, the society gender role system may prescribe behaviours that are stereotypically male or female (Baughn et al., 2006).

GEM researchers more recently report a pattern of gender gaps in venture creation and ownership activity that confirms Mueller’s earlier findings. With few exceptions (i.e. Japan, Thailand, Peru, and Brazil), the GEM researchers found that across the 41 countries surveyed, men are more likely to be involved in entrepreneurial activity than women (Mueller et al., 2013).

Some studies attribute these national and regional differences towards contextual factors such as culture (Davidsson & Wiklund 1997; Tiessen, 1997; Shane 1993; Uhlaner & Thurik 2007), economic development (Carree et al. 2002; Wennekers, Wennekers, Thurik, Reynolds, 2005), and institutional support for entrepreneurial activities (Busenitz, Gomez, Spencer, 2000; Freytag and Thurik 2007).

It is thought that the cultural condition channels women away from entrepreneurial activity (e.g., Birley 1989; Scherer, Brodzinski, & Wiebe 1990; Langowitz & Minniti, 2007)

From most of these studies emerge the fact that men usually have an advantage that is

often denied to women (Correll & Ridgeway, 2003).

Several countries show a strong attachment to the beliefs on the difference between men and women (Correll & Ridgeway, 2003; Conway, Pizzamiglio & Mount, 1996; Wagner & Berger, 1997; William & Best, 1990). In many societies, for example, women are often expected to be inferior to men in their general competence and also in specific skills (Foschi, Lai, Sigerson, 1994). These beliefs have generated a deep gap between men and women (Goltz, Buche, Pathak, 2015). In fact women are often stereotyped, undervalued and underutilized (Gallo & Iezzi, 2011). The stereotypical characteristics attributed to men and women in a society may indeed affect one's aspiration and inclination toward a particular job or profession depending on whether the work is perceived as "masculine" or "feminine" in nature (Cejka & Eagly 1999; Gupta et al. 2009; Fagenson & Marcus 1991; Minniti, 2010; Mueller & Dato-on; 2013; Scherer et al. 1990). In fact, many societies continue to define women primarily through roles associated with family and household responsibilities (Baughn et al., 2006; Welter et al., 2003).

A recent study found that institutionalized discrimination against women, such as restrictions on freedom of movement away from home, was negatively associated with women's entrepreneurship (Estrin & Mickiewicz, 2011; Goltz et al., 2015). In a business context, women are usually less favourably evaluated than men in term of competence and leadership (Berger, Wagner, Zelditch, 1985; Foschi, 1989); female founders are perceived as less capable (Bigelow, Lundmark, McLean Parks, Wuebker, 2014) and less expert than men even when they possess comparable levels of expertise (Bigelow et al., 2014). Furthermore, these beliefs have created barriers for women's work careers (Brooks, Huang, Kearney, Murray, 2014). In fact, women have more problems securing finance through the regular channels because usually their business profile is less favourable for investors (Verheul & Thurik, 2001). Financial barriers are even more pronounced for women than they are for men



(Coleman 2000; Fay and Williams 1993; Roper & Scott, 2009; Welsh, Kaciak, Minialai 2017).

Moreover, as research shows, women have more difficulties on convincing (potential) investors (Brush, 1992; Carter & Cannon, 1992; Carter, 2000; Hisrich & Brush, 1986; Schwartz, 1976). In fact, investors prefer pitches presented by male entrepreneurs compared to pitches made by female entrepreneurs, even when the content of the pitch is the same (Brooks et al., 2014). Furthermore, licensing officers are more positively disposed to spinoffs when the inventions are made by males (Shane, Dolmans, Jankowski, Reymen, & Romme, 2012).

Other researchers attributes the gap towards the persistence of sex-role stereotypes across a wide range of cultures and societies—including the perception that business ownership is a traditionally male occupation (Williams and Best, 1982; Wood & Eagly, 2002).

However, considering that, the cultural environment has a fundamental effect in entrepreneurship decision making (Minniti & Nardone, 2007), stereotypes affect the behaviour of the members of different groups (Koenig & Eagly, 2014; Schneider, 2004), and women are more sensitive to the local environment than men (Minniti & Nardone, 2007). We expect that, the institutional support for women entrepreneurs could help to create a less hostile environment, with less stereotypes related to women entrepreneurship, with higher good opportunities for women (Yousafzai et al., 2015). Consequently, we aspect that supporting women entrepreneurs might positively affect the women's decisions to become entrepreneurs.

H5: The probability to be a nascent women entrepreneur is higher in institutions that support women entrepreneurship.

However, literature that studies gender gaps has shown how several factors have a different relative impact on female and male entrepreneurship (Verheul et al., 2005). In this specific case, supporting women entrepreneurship encouraged only women to participate in new venture activities (Baughn et al., 2006). In societies that support women entrepreneurs, the role of entrepreneur is not characterised by traits stereotypically associated with males (Ahl, 2002; Baughn et al., 2006; Marlow, 2002). On one hand, the non-existence of stereotypes may encourage women. On the other hand, the non-existence of stereotypes may discourage men from attempting to find new ventures.

H6: The probability to be a nascent men entrepreneur is lower in institutions that support women entrepreneurship.

Women entrepreneurs may contribute to the development with multiple effects due to their greater concern for household welfare, their greater propensity to employ other women (Marques, 2015) and their complementarity to overall entrepreneurship (Baughn et al., 2006; Marques, 2015; Minniti & Naud, 2010;). Consequently, those policies that promote women entrepreneurship could be beneficial for development, as well as fostering women's participation (Baughn et al., 2006; Estrin & Mickiewicz, 2011; Marques, 2017; Shane, 2009). For example, a favourable cultural environment that encourages the economic activity of women is associated with an increased level of entrepreneurial interest (Pathak, Goltz, Buche, 2013).

H7: Supporting nascent women entrepreneurship affects positively the general probability to be a nascent entrepreneur and consequently it reduces gender's gap decision for starting a business.

### **3 Method**

#### **3.1 Sample**

The sample used for the analysis is collected from 90 countries around the world through the period of time between 2005 and 2015 and it is composed by 123,669 women and 115,657 men. The data derives from the Global Entrepreneurship Monitor (GEM), a project started in 1999 between the collaboration of researchers at Babson college (USA) and London Business School (UK) (Stel, Carree, & Thurik, 2005) with the goal to provide internationally comparable data on entrepreneurial activity (Álvarez, Urbano, & Amorós, 2014). GEM is now considered the largest database to study the prevalence, determinants, and consequences of entrepreneurial activity (Koellinger, 2008). Furthermore, it is considered an appropriate dataset to measure the differences in the level of entrepreneurial activity between countries (Bosma, 2012). The countries of the dataset are fairly representative of the world so this representativeness enables generalization to the world (Schott & Sedaghat, 2014). In this specific dataset is considered the adult population with an age between 18 and 65 years old.

#### **3.2 Variables**

##### *Dependent variable*

The dependent variable is a dichotomous variable and helps to distinguish people in the process of starting a business (NEs) to people not engaged in this kind of activity. The process is selected through three questions:

- 1) *Over the past 12 months have you done anything to help start a new business, such as looking for equipment or a location, organizing a start-up team, working on a business plan, beginning to save money, or any other activity that would help launch a business? (Yes, no, don't know, refuse).*

2) *Will you personally own all, part, or none of this business? (All, part, none, don't know, refuse).*

3) *Has the new business paid any salaries, wages, or payments in kind, including your own, for more than three months? (Yes, no, don't know, refuse).*

If an individual answers “yes” to question 1, “all” or “part” to question 2 and “no” to question 3 is considered a nascent entrepreneurs.

#### *Independent variable*

The explanatory variable measured the level of support for women in each country. The respondents, in this case national experts, answered to each question with a scale going from 1 to 5.

The mean of the five specific questions represent the “index of women supports for the country”. The questions are the following:

1) *In your country, there are sufficient social services available so that women can continue to work even after they start a family.*

2) *In your country, starting a new business is a socially acceptable career option for women.*

3) *In your country, women are encouraged to become self-employed or start a new business.*

4) *In your country, men and women get equally exposed to good opportunities to start a new business.*

- 5) *In your country, men and women are equally able to start a new business.*

The variable culture is used in GEM dataset to highlight the level of openness of cultural and social norms of each country. The respondents answered to each question with a scale going from 1 to 5. The mean of the five questions represent the “index of entrepreneurial culture for the country”. The questions are the following:

- 1) *The national culture is highly supportive of individual success achieved through own personal efforts.*
- 2) *The national culture encourages entrepreneurial risk-taking.*
- 3) *The national culture encourages creativity and innovativeness.*
- 4) *The national culture emphasizes the responsibility that the individual (rather than the collective) has in managing his or her own life.*
- 5) *The national culture emphasizes self-sufficiency, autonomy, and personal initiative.*

#### *Others variables*

The variable *gender* is also considered in this analysis. Gender is categorized as a dummy variable. Value 1 is given if the nascent entrepreneur is man otherwise 0, when it is woman.

The age of nascent entrepreneurs is included in the model and it is measured in years. This will account for the tendency of younger people to be more active in creating a business than older people (Minniti & Nardone, 2007). The level of education is also considered as a control variable (Arenius & Minniti, 2005). In fact, the probability to run a business changes depending on the level of education (Minniti & Nardone, 2007). The level of education is measured in years. In addition, the model contains some others variables relating to role

models, - knowing someone personally who started a business in the past two years-, opportunities – in the next six months there will be good opportunities to starting a business in the living area of the interviewed-, skill – the interviewed believes to have the knowledge, skill and experience required to start a business- and fear of failure. According to previous researchers, these variables could affect the rate of nascent entrepreneurs (Arenius & Minniti, 2005; Minniti & Nardone, 2007).

### 3.3 Logit Model

The logistic regression is a regression model where the dependent variable is categorical (McCullagh, 1980). In our specific case the dependent variable is a binary variable that can take the value “1” if the individual is considered a nascent entrepreneur and “0” otherwise. This method fit well with the purpose of the specific paper and with the criteria used by GEM dataset to measure the creation of business ideas.

The process of the model is characterized by the formula:

$$Y_i^* = X_i\beta + \varepsilon.$$

where  $Y^*$  is the unobserved dependent variable,  $x$  is the vector of independent variables,  $\beta$  is the vector of regression coefficients that should be estimated and  $\varepsilon$  is the error term (Greene, 2012).

Considering that we cannot observe directly  $y^*$  we can observe the category of response:

$$Y_i = 1 \text{ if } Y_i^* > 0$$

$$Y_i = 0 \text{ otherwise.}$$

### 3.4 Models

Considering the specificity of the independent variable “supporting women entrepreneurship”, we believe it is appropriate to run different models in order to understand the effects of the independent variable on gender.

In the first model, we consider the sample composed of 239,326 individuals. In this model, logistic regression is used to estimate how entrepreneurial culture affects the probability of people taking the decision to start a business. In the second model, we consider the sub-dataset of adult men; in this model, the logistic regression is used to estimate how entrepreneurial culture affects the probability of men taking the decision to start a business. The third model measures how entrepreneurial culture affects the probability of women taking the decision to start a business. In the third model, the sample is composed of 123,669 adult women. The fourth model considers the full dataset of 239,326 adults; in this model, the moderate effects of entrepreneurial culture on gender is measured.

Model 5, 6, 7 and 8 are used to better understand the effects of supporting women entrepreneurs on the decision of starting a business. In model 5, we consider the full dataset of 239,326 adults. The model measures how supporting women entrepreneurs affect people’s decision of starting a business. The model 6 considers the dataset composed by men.

In this model, we use the logistic regression to estimate how “supporting women entrepreneurship” affects the probability of men taking the decision to start a business. In the seventh model, we consider the sub-dataset of adult women. The model 7 measures how supporting women entrepreneurs affect women’s decision of starting a business. Finally, model 8 considers the full dataset; it measures the moderate effects of supporting women entrepreneurs on gender.

#### **4 Results**

Table 1 represents the descriptive statistics of the sample. From the data emerges that the number of adults who are engaged in running a business, which is 12%. The mean of level of

supporting women is 3,21, while the mean of level of entrepreneurial culture of the country is 2,81.

**Table 1:** Descriptive statistics and variable definitions

Variable	Definition	Mean	S.D.	Min	Max
TEA	dichotomous	0,12	0,35	0	1
Gender	dichotomous	0,4832	0,4997	0	1
Supporting women	from 1 to 5	3,21	0,3466	1	5
Culture	from 1 to 5	2,815	0,422	1	5

Table 2 shows the number of men and women engaged in running a business. The results of Table 2 displays that 42 % of NEs are women and 58 % of NEs are men. Despite there being more women than men in the sample, the probability to be nascent entrepreneurs is lower for women.

**Table 2:** Gender/ TEA

Gender	Not NE	%	NE	%	Tot.
Women	111.466	0,465	12203	0,05	123.669
Men	99128	0,415	16529	0,07	115657
Tot.	210.594	0,88	28732	0,12	239.326

Table 3 shows the list of all the countries in which the GEM survey has been made. Furthermore, the table shows for each country the mean level of the entrepreneurial culture, and the mean level of supporting women entrepreneurship. From the table emerges that the countries who support women entrepreneurship the most are Iceland (4,06), Finland (3,97) and Norway (3,94). At the end of the list in supporting women entrepreneurship there are: Hungary (2,51), Japan (2,27) and Iran (2,05).

United States (4,21) is the country with the higher entrepreneurial culture followed by Hong Kong (4,02) and Israel (3,97). Then, Bolivia (2,17), Portugal (2,16) and Slovakia (2,12) are at the bottom of the list for entrepreneurial culture of the countries.



**Table 3:** Culture and supporting women statistics for each countries.

Country	Culture	Supporting women
Australia	3,11	3,56
Serbia and M.	2,4	2,97
Tonga	2,72	3,27
United States	4,21	3,59
Algeria	3,12	3,38
Angola	2,88	3,05
Argentina	2,84	3,17
Austria	2,41	3,06
Bangladesh	3,2	2,74
Barbados	2,62	3,66
Belgium	2,41	3,27
Bolivia	2,17	2,88
Bosnia	2,19	2,72
Botswana	2,77	3,32
Brazil	2,6	2,98
Canada	3,27	3,64
Chile	2,65	3,14
China	3,23	3,63
Colombia	3,03	3,34
Costa Rica	2,86	3,27
Croatia	2,23	2,84
Czech Republic	2,21	2,99
Denmark	2,58	3,64
Dominican Rep.	3,07	3,41
Ecuador	2,65	3,19
Egypt	2,27	2,62
El Salvador	3,1	3,1
Emirates	3,37	3,36
Estonia	3,42	3,55
Ethiopia	2,96	3,06
Finland	2,71	3,97
France	2,23	3,28
Germany	2,76	3,04
Ghana	3,04	3,25
Greece	2,61	2,98
Guatemala	2,67	3,02
Hong Kong	4,02	3,89
Hungary	2,41	2,51
Iceland	3,88	4,06
India	3,04	2,84
Indonesia	3,15	3,61
Iran	2,35	2,05
Ireland	3,21	3,3
Israel	3,97	3,02
Italy	2,6	2,92
Jamaica	3,36	3,31
Japan	2,2	2,27
Jordan	2,4	3,03
Kazakhstan	3,8	3,87
Latvia	2,84	3,55

Lebanon	na	na
Lithuania	2,62	3,14
Macedonia	2,82	3,27
Malawi	2,42	3,17
Malaysia	3,1	3,63
Mexico	2,71	3,2
Montenegro	na	na
Morocco	na	na
Namibia	3,22	3,47
Netherlands	2,81	3,34
New Zealand	3,16	3,57
Nigeria	3,24	3,02
Norway	2,68	3,94
Palestine	2,89	2,99
Panama	2,87	3,59
Peru	2,88	3,14
Philippines	3,35	3,91
Poland	2,71	3,36
Portugal	2,16	3,14
Puerto Rico	2,45	3,31
Romania	2,39	3,5
Russia	2,65	3,25
Saudi Arabia	na	na
Singapore	3,08	3,58
Slovakia	2,12	2,95
Slovenia	2,23	3,47
South Africa	2,68	2,97
South Korea	3,14	2,84
Spain	2,58	3,1
Sweden	2,47	3,63
Switzerland	3,01	2,97
Syria	3,01	3,01
Taiwan	3,65	3,79
Thailand	3	3,81
Tunisia	2,73	3,55
Turkey	2,87	2,74
Uganda	3,2	3,3
United Kingdom	2,79	3,18
Uruguay	2,25	3,19
Vanuatu	na	na
Venezuela	2,6	3,34
Yemen	na	na
Zambia	2,62	2,99

Table 4 shows the correlation between supporting women entrepreneurship and entrepreneurial culture. The two variables are positively correlated (0,48). However, there is no strong correlation between the two variables. This also emerges when looking at the case of Israel. The country manifests a very high level of entrepreneurial culture but is at the bottom of the list when it comes to supporting women entrepreneurship.

**Table 4:** Correlations between culture and supporting women.

	Supporting women	Culture
Supporting women	1	0,48
Culture	0,48	1

To test the Hypotheses, we use logistic regression. The parameter estimates are shown in Table 5 and 6. Model 1 shows that entrepreneurial culture has a, in general, positive effect on people’s decisions on starting a business. Model 2 and 3 studies the effects of entrepreneurial culture on men’s (Model 2) and women’s (Model 3) decisions. From the analysis emerges that entrepreneurial culture positively affects both men and women’s decisions. In Model 4, we estimate how entrepreneurial culture affects gender’s gap decisions on starting a venture. Contrary to expectations, the results show that entrepreneurial culture reduces the gap between men and women. In Model 5, we estimate how “supporting women entrepreneurship” affects, in general, the probability to be a nascent entrepreneur. From Model 5 emerges that supporting women entrepreneurship positively affects the probability of individuals to be NEs.

The sub-set of men’s population is used in Model 6. This model shows that supporting women entrepreneurship negatively affects men’s decisions to be nascent entrepreneurs. Model 7 shows that in a country where support women entrepreneurship is higher, women have more probability to be engaged in running a business. However, “supporting women”

could affect men and women in a different way. The goal of Model 8 is to measure how the support for women entrepreneurs helps to reduce the gender's gap in starting a business. The result of Model 8 confirms the Hypothesis: supporting women reduce the gap between men and women on starting a business. These results are discussed in more detail in the discussion section.

**Table 5**

Logistic regression model	Model 1 (full dataset)			Model 2 (men dataset)			Model 3 (women dataset)			Model 4 (full dataset)		
	Estimate	S.E.		Estimate	S.E.		Estimate	S.E.		Estimate	S.E.	
Intercept	-2,708	0,043	***	-2,359	0,059	***	-3,105	0,063	***	-3,730	0,091	***
Culture	0,233	0,015	***	0,177	0,020	***	0,301	0,022	***	0,248	0,028	***
Culture*Gender										-0,135	0,038	***
Gender										0,530	0,111	***
Age										-0,012	0,001	***
Education										-0,017	0,001	***
Knowledge										0,651	0,016	***
Fear of failure										0,337	0,017	***
Opportunities										0,552	0,016	***
Skills										1,333	0,021	***

**Table 6**

Logistic regression model	Model 5 (full-dataset)			Model 6 (men -dataset)			Model 7 (women-dataset)			Model 8 (full dataset)		
	Estimate	S.E.		Estimate	S.E.		Estimate	S.E.		Estimate	S.E.	
Intercept	-2,232	0,061	***	-1,658	0,081	***	-3,049	0,095	***	-3,975	0,125	***
Supporting Women	0,057	0,019	**	-0,065	0,025	*	0,247	0,029	***	0,298	0,037	***
Gender*Supporting women										-0,373	0,047	***
Gender										1,348	0,155	***
Age										-0,012	0,001	***
Educatauion										-0,018	0,001	***
Knowledge										0,653	0,016	***
Fear of failure										0,338	0,0170	***
Opprtunities										0,56	0,0163	***
Skills										1,334	0,020	***

## 5 Discussion

Prior works in academic entrepreneurship have argued how institutions help people to create new business. However, in this paper we distinguish the general factor, of entrepreneurial culture of the society, and the specific regulatory factor of supporting women entrepreneurs by societies. This study provides evidence in support of these assertions. From

the analysis emerges that female have a higher probability to start a business in societies that support women entrepreneurship and in which this kind of career is generally accepted for women. In other words, less stereotypes and barriers allow women to follow the self-employment career.

In light of this, it would seem that a political action in favour of women entrepreneurship could be used to generate more ventures and consequently a higher growth. In fact, according to Verheul (2005), the increase of female entrepreneurs in societies is not only important because of the number, but also because women contribute to the diversity of entrepreneurship in economies.

Furthermore the results help to understand the behaviour of men when taking the decision of running a business depending on the level of supporting women entrepreneurship.

In the past, it has been shown in what way masculine societies have positive effects in creation of business (Lewis, 2006). From the analysis emerges that the probability of men to be nascent entrepreneur decrease when the societies are more open with female entrepreneurship. However, with our data, we are not able to find the reasons of these results. More analysis must be done to better understand how the behaviour of men is linked to the specific factor of supporting women entrepreneurship.

Furthermore, from the analysis emerges that societies supporting women entrepreneurship have in general a higher probability to create new business. This result helps to highlight the importance of supporting women entrepreneurship. In fact, the advantage is both to women than to the general society. Considering that, according to some economists the development and increase of entrepreneurship helps to the growth of the society (Romer & Lucas, 1993); we can suppose that a political action that helps to remove barriers about beliefs and stereotypes about women entrepreneurship might allow the development of a country.

However, more specifications must be done. In this paper, we distinguish between the

specific support to women entrepreneurs and the general support of entrepreneurial culture. We try to understand if there exists a strong difference between the two effects, or if this distinction is not so strong and the two effects are strongly correlated. From the analysis emerges a positive correlation between the two factors. However, the correlation is weak. This means that countries that are open to entrepreneurial culture are not necessarily open to women entrepreneurship.

In fact, countries such as the US or Israel have a very high entrepreneurial culture but the level of stereotypes about women entrepreneurs is still high. Otherwise, countries like Iceland and Finland who strongly support women entrepreneurship do not show a high level of entrepreneurial culture.

However, the general effects of entrepreneurial culture have positive effects in generation a business affecting men, women and the whole population in general. These results might push us to suppose that a political action, which seeks to promote entrepreneurial culture, could be beneficial for both men and women.

## **6 Limitations**

This paper has opened an interesting debate in an important topic, entrepreneurship and gender. The results show that the number of women entrepreneurs is higher when the country supports them. However, we must be cautious in the interpretation of results. In fact, from the analysis it does not emerge that political actions allows getting a higher growth. Future researches could help to implement this paper and to cover this gap; decisions to be a nascent entrepreneur depends on a constellation of factors from, human, social, financial, micro, macro. The goal of this paper was to highlight the influence of the institutional factors. However, we have to remember the importance of the effects of other factors on people decisions.

Finally, some authors highlight the importance of distinguishing the different kinds of

start-ups' depending on innovation (Colombelli, 2016). They believe that factors affect innovative or non-innovative business in a different way (Castaño, Méndez, Galindo, 2016). This distinction between the different kinds of innovation has not been made in this paper. However, future research could implement the analysis considering these factors.

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## Chapter 3: Gender Gap in Financing New Business

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### **Abstract**

In this study, we explore the institutional embeddedness and its effects on the gaps between genders and own, external and total financing. To do this, two particular aspects are considered: culture (traditional vs modern-secular) and regulatory support for women entrepreneurship.

We suppose that the factors could affect – widening or narrowing – the gaps between genders in financing. We test this idea, using a globally representative sample of 40,595 nascent entrepreneurs owning and managing a new business, in 106 countries, surveyed from 2005 to 2015. The data derive from two sources: the Global Entrepreneurship Monitor Project and the World Value Survey. The results confirm our assumptions. We discover that gender gap in financing differ in magnitude from country to country. Gender gap is widened by traditionality in culture and narrowed by modern or secular-rational culture. Furthermore, we universally reconfirm that men who are entrepreneurs use in general, a higher amount of own, external, and total financial capital than women. Contributions and implications are discussed.

**Keywords:** Nascent Entrepreneurship; Gender; Financing Entrepreneur; Institutions; GEM

### **1 Introduction**

Starting a business requires money, typically (Brush, de Bruin, & Welter, 2009). Part of the total money needed to start a business might be provided by the entrepreneur as own money, while the other part might be provided by other external sources (Marlow & Pattow, 2005).

Such financing varies among entrepreneurs (GEM Financial Report, 2016). Entrepreneurs' resources influence their own funding, and quality of ideas influences funding from investors. Theorizing about a perfect market, attribute such as gender would be considered functionally irrelevant, an imperfection, and it would be a market failure if financing were influenced by gender (Bruton, Ahlstrom, & Li, 2010). In reality, gender seems functionally irrelevant, in that no gender seems to be underperforming. But gender gaps are pervasive, in that women tend to provide less own financing and obtain less external financing, and thus start with less total funding (Eddleston, Ladge, Mitteness, & Balachandra, 2016; Verheul & Thurik, 2001).

To understand such market failure and gender gaps, it is important to theorize the eco-system that finances entrepreneurship. Gender gaps have been examined in numerous studies. A study in Canada indicated that male-owned businesses are significantly more likely to have longer business banking relationships than women-owned businesses (Riding & Swift, 1990). A study in the Netherlands revealed that female entrepreneurs start their business with a smaller amount of start-up capital (Verheul & Thurik, 2001). A study in Norway indicated that women usually obtain significantly less financial capital to develop their new businesses (Alsos, Isaksen, & Ljunggren, 2006). These studies within many countries indicate that gender gaps in financing are omnipresent (GEM Financial Report, 2016).

Explanations for gender gaps have been sought through several case studies. A program for supporting women start-ups in Tunisia presented how support services are inadequate for promoting female entrepreneurship (El Harbi, Anderson, Mansour, 2009). A case study in Lebanon highlighted how lack of credit could be the main obstacle that limits the ability of women entrepreneurs to develop their businesses (Abdo & Kerbage, 2012).

However, the typical study of gender differences has been conducted within a single country, and thereby the national eco-systemic conditions have been held constant. Holding

institutional context constant is advantageous for understanding variation in individual behaviour, but neglects the institutional conditions influencing the individual behaviour. Specifically, it ignores the institutions influencing the gender bias in financing, and the institutional context thus remains a sore unknown.

These considerations frame our research question,

*What is the institutional embeddedness of gendering of financing?*

Scholars examine how culture assigns different roles to men and women, often with a hierarchy granting men more resources and authority (Hechavarria & Reynolds, 2009). Specifically, traditional culture assigns men to bread-winning and property-ownership, and assigns women to home making (Hechavarria & Reynolds, 2009; Inglehart, 2006). Thereby, expectedly, traditionality creates gender differences in financing (Hechavarria & Reynolds, 2009; Inglehart, 2006). Conversely, case studies of support programs for women suggest that society's support for women entrepreneurship is an institution narrowing gender gaps (Baughn, Chua, Neupert, 2006).

This enables further specification of our research question,

*Are gender gaps in financing widened by traditionality in culture and narrowed by institutional support for women entrepreneurship?*

To answer these questions, a globally representative sample of 40,595 entrepreneurs owning and managing a new business in 106 different countries is used.

The paper has several goals. First of all, to reconfirm previous results concerning gender's financial gaps in own, external and total financing highlighting the universality of the phenomenon. Secondly, to discover how traditional culture and modern culture could enlarge or reduce the gender gaps in financing start-up activities. Finally, to show how the support of women entrepreneurs cover the gap between genders in financing new business.

The study makes several contributions to the literature concerning differences of gender in entrepreneurship and the institutional theory's effects. Specifically, the research theoretically contributes on advancing knowledge in the topic of gender and financing business analysing the moderating effects of institutions.

The following section provides an overview of the literature on entrepreneur financing. This is followed by the presentation of the hypotheses. Then, the methodology is explained and the results are shown. Finally, the findings are discussed.

## **2 Theoretical background and Hypotheses**

One of the most important factors for entrepreneurs to launch and grow ventures is money (Brush et al., 2009). Previous authors have shown the relevance of financial capital for starting a business (Alsos, Isaksen, & Ljunggren, 2006; Marlow & Patton, 2005) and have found that several sources of money could be used by nascent entrepreneurs (Alsos, Isaksen, & Ljunggren, 2006; Marlow & Patton, 2005). Scholars agree that nascent entrepreneurs use four main sources for financing their businesses: personal savings (often labelled own financing, it can includes contributions from family and friends), debt financing (normally through commercial bank), soft loan supported by central government and equity funding via venture capital and informal investment (Jarvis, 2000; Marlow & Pattow, 2005). Such financing sources (Marlow & Pattow, 2005) are categorized in GEM Project in two groups: personal savings (or own financing) and external financing (or other financing; that considered debt financing, soft loans supported by the government and equity funding via venture capital and informal investment) (GEM Financial Report, 2016). The sum of the two sources of capital is the total amount available by the entrepreneurs for starting their businesses.

Such financing varies according to the characteristics of the entrepreneurs and gender is considered one of these characteristics. Several authors have found differences on gender financing (Carter & Rosa, 1998; Verhuel & Thurik, 2001). From some studies, it emerges that women entrepreneurs are financing their businesses differently than men entrepreneurs (Arenius & Autio, 2006). These differences emerges both in external and own financing (Gartner, Frid, Alexander, 2012; Titman & Wessels, 1988).

## **2.1 External financing**

Authors have highlighted the existence of several barriers that could make the acquisition of external financial resources different between men and women entrepreneurs (Verheul & Thurik, 2001). Nascent women entrepreneurs have less access to the banking system (Alesina et al., 2012), they are often discriminated in obtaining equity via venture capital (Brush et al., 2001) and in general, they get less external financial capital for starting their business (Verheul & Thurik, 2001). The results from several studies in different countries show that women get less financial equity and credits than men. For example, a) Riding and Swift (1990) for Canada; b) Verheul and Thurik (2001) for the Netherlands; c) Alsos, Isaksen and Ljunggren (2006), and Alesina Lotti and Mistrulli (2013) for Italy. Also in Norway, the external amount obtained by women for financing their business is significantly less than the amount obtained by men (Alsos et al., 2006). In a study of U.S. firms from the Kauffman Firm Survey, a longitudinal survey of nearly 5000 new firms in the USA, Treichel and Scott (2006) found that women-owned firms have applied for significantly smaller loans than men, even controlling for other factors (Coleman & Robb, 2009). Despite in the last years, central governments from various countries have increased the amount of soft loan for women entrepreneurs (Agier & Szafarz, 2013), the Financial Report of the Global Entrepreneurship Monitor (2016) has still confirmed the existence of a financial gap between men and women.

The report shows that women use less external financing for starting a business in all the economics except Malaysia and Luxembourg.

This means that the discrepancy between men and women entrepreneurs still exist regarding the amount of the external financial collected for starting a new venture (Eddleston et al., 2016; Verheul & Thurik, 2001). For these reasons, we support the hypothesis that:

*H1a: Men entrepreneurs tend to require more external financing than women entrepreneurs for starting their businesses.*

## **2.2 Own financing**

The use of personal funds has been considered the most source of financing for nascent entrepreneurs in the early of the venture creation process (Frid, 2009). In fact, ninety-five per cent of entrepreneurs self-finance their businesses (GEM Financial Report, 2016). The gender's barriers in accessing to external financing often push women to use internal sources of financing (Bennet & Dann, 2000; Haynes & Haynes, 1999; Orser et al., 2006) or family founded (Alsos et al., 2006) rather than external sources of financing (Bennet & Dann, 2000; Haynes & Haynes, 1999; Orser et al., 2006). However, this does not mean that women have higher own capital than men. In fact, women on average, have lower income than men, and consequently are able to invest less of their own money into their businesses (Alsos et al., 2006; Carter & Kolvereid, 1997; Marlow, 2002; Marlow & Patton, 2005). Furthermore, empirical findings show that women-owned businesses have lower start-up capital (Arenius & Autio, 2006; Apilado and Millington, 1992; Rosa et al., 1994; Verheul and Thurik, 2001) and they have greater difficulty in accumulating sufficient personal assets than their male counterparts (Chapelle, 2012). These results are also confirmed in US where women run their businesses using significantly smaller amounts of equity (Coleman & Robb, 2009). So, on average, women entrepreneurs start their business with less personal capital (Arenius &

Autio, 2006; Apilado and Millington, 1992; Brana, 2011; Rosa et al., 1994; Verheul and Thurik, 2001).

*H1b: Men start their business with more own financing than women.*

Considering that men start their business with higher amount of own financing and external financing, it could be expected a general gap between men and women in the amount of total financial capital used for starting a business.

*H1c: Men, in general, start their business with more capital than women.*

### **2.3 Institutional effects**

It is known that the financial requirements for starting a business is different from country to country (GEM Financial Report, 2016) and it is also known that the contexts in which people move the first steps for running their activities could affect their decisions and the growth of the business (Santos, Marques, Ferreira, Gerry, & Ratten, 2017). In this line, institutional theory has played a main role in explaining how the changes happen (Ahlstrom & Bruton, 2002; Bruton, Ahlstrom, & Li, 2010).

This theory focus on rules, norms and beliefs that influences organizations and their members (Bruton, Ahlstrom, & Li, 2010; Scott, 2007). Authors that study this theory are interested to understand the role of social, political and economic system that surround firms and individuals and grant them legitimacy (Baughn et al., 2006; Scott, 1995). They identify three types of institutions: regulatory, normative and cognitive (Scott, 2007).

The regulatory pillar gives incentive and sanction to organizations and individuals from a government or other authoritative body that regulates individual and organizational action (Bruton et al., 2010; Scott, 2007). The normative pillar represents models of organizational and individual behaviour based on obligatory dimensions of social, professional and organizational interaction (Bruton et al., 2010; Scott, 2007). The cognitive pillar includes the scripts, schemes, and taken for granted elements that influence individuals in a particular



sociocultural context (Bruton et al., 2010; Scott, 2007). The normative and cognitive pillars draw on culture (Bruton et al., 2010) through the actions that organizations and individuals ought to take (normative) and the standards of behaviour of individual and organizations (cognitive) (Bruton et al., 2010). The regulatory pillar includes the laws, regulations and their enforcement (Bruton et al., 2010).

Each of these pillars could influence the gender bias and the legitimacy of individuals (Brush et al., 2009). For example, institutions could affect the division of labour for gender (Brush et al., 2009; Sen, 1990), the market (gendering the occupations) (Blau et al., 2002; Brush et al., 2009) and the access to finance, through cultural barriers (normative and cognitive pillars) or government policies for supporting diversity (regulatory pillar) (Brush et al., 2009; Carter et al., 2007; Drine & Grach, 2012).

### *2.3.1 Culture*

Over the years several scholars have studied culture under institutions (Scott, 1995; North, 1994) and several definitions and categorizations have emerged. Hofstede has been one of the most active in that respect. He presents four key dimensions to analyse national culture: individualism, power distance, masculinity and uncertainty avoidance (Hofstede, 1980; Hechavarria & Reynold, 2009; Verheul et al., 2001). An alternative approach to measure cultural differences has been developed by Schwartz (1992, 1994) (Hechavarria & Reynolds, 2009). Schwartz identified seven cultural levels that were summarized in three dimensions: embeddedness vs autonomy, hierarchy vs egalitarianism; and mastery vs harmony (Schwartz et al., 1999; Hechavarria & Reynolds et al., 2009).

In more recent years, a greatest success has been obtained by Ingelghard's constructs (Hechavarria & Reynolds, 2009; Ingelghard, 2006). Through the World Value Survey (WVS), Ingelghard has provided a comprehensive measurement of all major areas of human concern, from religion to politics to economic and social life. He identifies two dimensions of

culture useful to understand values and cultural changes in societies all over the world: traditional culture and secular-rational culture (Hechavarria & Reynolds, 2009; Inglehart, 2006). Traditional values are characterized in terms of the emphasis on religion, obedience, patriotism, the desire to make one's parents proud, non-justification of divorce, rejection of abortion and economic protectionism; secular values are characterized as the opposite (Hechavarria & Reynolds, 2009; Inglehart, 2006). We believe that gender differences in financing are highly influenced by the macro-level environment, specifically by the traditional culture. In this kind of culture, there is a stronger distinction between the role played by men and the role played by women (Cheraghi, Setti, Schøtt, 2014). In traditional culture, it is expected that men support their families and women take care of house and family (Cheraghi, Setti, Schøtt, 2014, Hattab, 2010, 2012). This generates a lower orientation of women to labour market and entrepreneurial activities (Cheraghi, Setti, Schøtt, 2014; Gillet, 2007). In institutions with traditional culture, there is still a conservative perception of women entrepreneurs (Cheraghi, Setti, Schøtt, 2014) because it is still considered unusual for women starting a business (Cheraghi, Setti, Schøtt, 2014). Hence these cultural barriers could affect the behaviours of entrepreneurs and their stakeholders. Furthermore, the stereotype of the "man entrepreneur" makes more difficult for women accessing to external financing. Therefore, we expect traditional culture widens the gap between gender and external financing.

*H2a: Traditional culture widens the gender's gap of the external amount of financing.*

Moreover, in a traditional culture women have lower access to labour market and consequently they have less saving and money for starting their business. For this reason, we suppose that, considering own financing, the traditional culture widens the gap between gender.

*H2b: Traditional culture widens the gender's gap of the own amount of financing.*

Considering that Hypotheses 2a and 2b support that in traditional culture wider gap exist between men and women entrepreneurs in external financing and own financing, it could be expected a wider gender gap also for the total amount of financial capital used for starting a business.

*H2c: Traditional culture widens the gender's gap of the total amount of financing.*

### *2.3.2 Regulatory support for women entrepreneurship*

The regulatory institutions can define and limit entrepreneurial opportunities setting the rules (Bruton et al., 2010). In a specific way, the government through the regulations can remove conditions that create barriers and market imperfections (Bruton et al., 2010). The literature shows differences between countries depending from regulatory institutions (Scott, 2007). Some societies have norms that facilitate entrepreneurship and their financing while others discourage it by making it difficult (Baumol et al., 2009; Bruton et al., 2010). This is also evident analysing the effects of rules on gender. These rules can be used by the government to promote women entrepreneurship through specific normative supports. These supports can be considered a part of the regulation system, they can affect the behaviour of women and they could reduce the gender differences (Baughn et al., 2006). For example, some developing countries are given to women more possibilities to finance their businesses thanks to microfinance programs (GEM Financial Report, 2016). In this line, supporting women entrepreneurs allows more access to external financing for women entrepreneurs. Consequently, we could support the hypothesis that supporting women entrepreneurs reduce the gender external financial gap.

*H3a: Support for women entrepreneurship reduces the gender gap in external financing between men and women.*

In some countries, as Finland and Norway, the regulations allow women business owners to have the same men's opportunities for financing their businesses (Arenius & Autio, 2006).

These countries are perceived as countries where the differences between men and women are small (Arenius & Autio, 2006; Alsos et al., 2006). Regulations in these countries could push women to become the principal actors of their business. They could be pushed to have high entrepreneurial aspirations (Meyer, Estrin, Bhaumik, & Peng, 2009), to register the family property with their name and to invest more of their own capital (Verheul & Thurik, 2001).

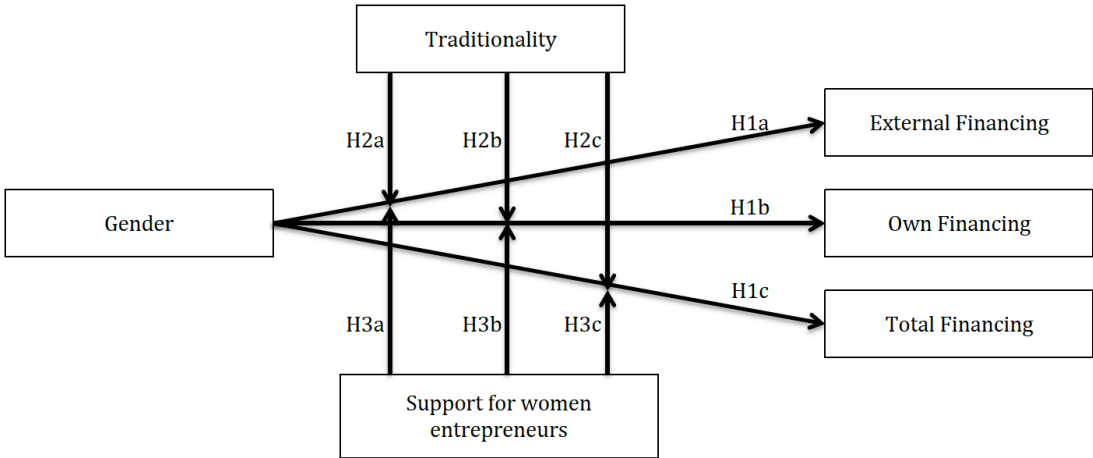
Consequently, in countries with high regulation for gender’s equality (Arenius & Autio, 2006), we expect to find less gender differences and consequently a narrowest gap in own financial capital between men and women entrepreneurs.

*H3b Support for women entrepreneurship reduces the gender gap in own financing between men and women.*

Considering that the hypotheses 3a and 3b support that supporting women entrepreneurship mitigates both gender’s gaps in external and own financing, it could be expected that supporting women entrepreneurship moderate the gender gap in total financing.

*H3c Support for women entrepreneurship reduces the gender gap in total financing between men and women.*

**Graph 1:** Hypotheses



### **3. Method**

#### *3.1 Sample*

We use a globally representative sample of 40,595 entrepreneurs owning and managing a new business, in 106 countries, surveyed from 2005 to 2015. The dataset is composed by women and men from 18 to 65 years old. Data are from two sources: Global Entrepreneurship Monitor (GEM) Project and World Value Survey.

The GEM is a collection of data started in 1999 between the collaboration of researchers at Babson college (USA) and London Business School (UK) (Stel, Carree, & Thurik, 2005). In these years, the GEM Project has provided internationally comparable data on entrepreneurial activity (Álvarez, Urbano, & Amorós, 2014) and it is considered the largest database to study the prevalence, determinants, and consequences of entrepreneurial activity (Koellinger, 2008). Furthermore, the dataset allows comparing different entrepreneurial activities between countries (Bosma, 2012) that are fairly representative of the entire world (Schott & Sedaghat, 2014).

The World Value Survey (WVS) is a global network of social scientists studying changing values and their impact on social and political life ([www.worldvaluessurvey.org](http://www.worldvaluessurvey.org)). The project started in 1981; it consists of nationally representative surveys conducted in almost 100 countries representing 90 per cent population of the world ([www.worldvaluessurvey.org](http://www.worldvaluessurvey.org)). The database is often used by scholars and policy makers to understand changes in beliefs, values and motivations of people throughout the world. These data are also used to understand the cultural factors and gender equality ([www.worldvaluessurvey.org](http://www.worldvaluessurvey.org)).

#### *3.2 Variables*

##### *Dependent variables*

In our research three dependent variables are used. The first is a numerical variable that measure all the external financing obtained by the respondent to run his business. The variable considers both loans and equity. External financing is measured by asking the entrepreneur:

*4) How much money, in total, will be required to start this new business? Please include both loans and equity/ownership investments.*

The second variable is numerical. It measures the amount of own money used by the respondent to run their business. Own financing is measured by asking the entrepreneur:

*5) How much of your own money, in total, do you expect to provide to this new business? Please include both loans and equity/ownership investments.*

The third variable measures the total amount of money needed by the responder for starting his business. This variable represents the sum of own and external financing.

#### *Independent variable*

The explanatory variable *traditionality in culture* measures the level of traditionality (or at the opposite modernity) of a country. This variable has been measured numerically in the World Value Survey and it is based on respondent responses to ten items ([www.worldvaluessurvey.org](http://www.worldvaluessurvey.org)).

The explanatory variable *support for women entrepreneurs* measures the level of institutional support for women entrepreneurship. In this case, the respondents are national experts that rate the truthfulness of several statements using a 1 to 5 scale. The questions are the following:

*6) In your country, there are sufficient social services available so that women can continue to work even after they start a family.*

*7) In your country, starting a new business is a socially acceptable career option for women.*

8) *In your country, women are encouraged to become self-employed or start a new business.*

9) *In your country, men and women get equally exposed to good opportunities to start a new business.*

10) *In your country, men and women are equally able to start a new business.*

The five responses are combined into an index of institutional support for women entrepreneurship in the country.

Gender is coded as a dummy variable with value 0 for males and 1 for females.

#### *Control variables*

In the paper several control variables are considered. Firstly, the variables *Age* and *Education* are included in the model. This because emerges from previous research that financial requirements often vary according to age and education (GEM Financial Report, 2016). For example, young people often have no credit history or assets to serve as collateral in order to secure loans from financial institutions. Furthermore, a negative relationship between educations and entrepreneurship rates among women was found (GEM Gender Report, 2017). The two variables are measured in years. Also the variable *Income* is considered in the model. This variable is measured as a numerical value. This is because income could influence the own financing of business. *Motive* is used as a control variable in the model for identifying the reason that has pushed the person to start the business. Two reasons are identified: opportunity or necessity. This is because, the amount of required finance changes according to the kind of entrepreneur. Opportunity-driven entrepreneurs need more funds to start their businesses (GEM Financial Report, 2016).

Finally, financing can vary for innovative and non-innovative entrepreneurs. For this reason, *Innovation* is considered as a control variable in the model.

### *3.3 Hierarchical linear modelling*

The two-level data are analysed by hierarchical linear modelling. The model is similar to linear regression but takes in consideration that the data are at two levels (Snijders & Bosker, 2012). This specific model is used to analyse the idea that an entrepreneur's financing depends on gender and is influenced by the normative and cognitive factors (culture) and regulatory factors (institutional support for women entrepreneurship). This involves a micro-level unit, the entrepreneur with gender and financing, and a macro-level unit, a country providing support.

The first model ascertains how amount of own financing, other financing and total financing is affected by gender. The second model measures the effects of institutions (traditional vs secular and support of women). In the second model, the interaction effect is used to explain how the gender effect depends on institutions.

#### 4. Results

Table 1 represents the descriptive statistics of the sample. From the data emerges that men invest higher amount of own financing, external financing and total financing.

**Table 1:** Financing, by gender

	Own financing	External financing	Total financing
Women	-.19	-.05	-.20
Men	.14	.04	.15
	24,379	23,795	40,595

Table 2 shows the correlation between financing and the individual characteristics used as control variables.

**Table 2:** Correlations between financing and individual characteristics.

	Own financing	External financing	Total financing
Age	.04	-.03	.03
Education	.09	.01	.11
Income	.14	.01	.14
Motive	.09	.01	.09
Innovation	.01	.01	.02



Table 3 shows the list of all the countries used in the analysis. The table shows for each country the mean level of supporting women entrepreneurship. From the table emerges that the institutions that more support women entrepreneurship are: Iceland (4,06), Finland (3,97) and Norway (3,94). On the other hand, the institutions that least support women entrepreneurship are: Hungary (2,51), Japan (2,27) and Iran (2,05).

**Table 3:** Supporting women: statistics for each countries.

Country	Supporting women
Australia	3,56
Serbia and M.	2,97
Tonga	3,27
United States	3,59
Algeria	3,38
Angola	3,05
Argentina	3,17
Austria	3,06
Bangladesh	2,74
Barbados	3,66
Belgium	3,27
Bolivia	2,88
Bosnia	2,72
Botswana	3,32
Brazil	2,98
Canada	3,64
Chile	3,14
China	3,63
Colombia	3,34
Costa Rica	3,27
Croatia	2,84
Czech Republic	2,99
Denmark	3,64
Dominican Rep.	3,41
Ecuador	3,19
Egypt	2,62
El Salvador	3,1
Emirates	3,36
Estonia	3,55
Ethiopia	3,06
Finland	3,97
France	3,28
Germany	3,04
Ghana	3,25

Greece	2,98
Guatemala	3,02
Hong Kong	3,89
Hungary	2,51
Iceland	4,06
India	2,84
Indonesia	3,61
Iran	2,05
Ireland	3,3
Israel	3,02
Italy	2,92
Jamaica	3,31
Japan	2,27
Jordan	3,03
Kazakhstan	3,87
Latvia	3,55
Lithuania	3,14
Macedonia	3,27
Malawi	3,17
Malaysia	3,63
Mexico	3,2
Namibia	3,47
Netherlands	3,34
New Zealand	3,57
Nigeria	3,02
Norway	3,94
Palestine	2,99
Panama	3,59
Peru	3,14
Philippines	3,91
Poland	3,36
Portugal	3,14
Puerto Rico	3,31
Romania	3,5
Russia	3,25
Singapore	3,58
Slovakia	2,95
Slovenia	3,47
South Africa	2,97
South Korea	2,84
Spain	3,1
Sweden	3,63
Switzerland	2,97
Syria	3,01
Taiwan	3,79
Thailand	3,81
Tunisia	3,55
Turkey	2,74
Uganda	3,3
United Kingdom	3,18

Uruguay	3,19
Venezuela	3,34
Zambia	2,99

To test the Hypotheses, the Hierarchical linear modelling is used.

The first model in Table 4 reconfirms the gender gap in finance. From the analysis emerges that men tend to require more external financing than women. This result confirms the Hypothesis 1a. Furthermore, the Hypothesis 1b supposes that men start their business with more own financing than women. The model confirms the hypothesis 1b. Moreover, the model analyses the effect of gender in the total financing used by entrepreneurs for starting their business. The hypothesis 1c confirms that men start their business with a higher amount of total financing than women. The model shows also the effects of the individual characteristics used as control variables. From the analysis emerges that age is positively correlated with own financing, but negatively correlated with external financing. Entrepreneurs with higher education start their business with more both own financing and external financing. Income, motive and innovation have only a positive effect in own financing and no effects in other financing.

**Table 4:** Financing affected by gender

	Own financing	External financing	Total financing
Gender: Female	-.29 ***	-.08 ***	-.31 ***
Age	.04 ***	-.02 *	.04 ***
Education	.10 ***	.03 **	.12 ***
Income	.10 ***	.00	.11 ***
Opportunity-motive	.12 ***	.00	.11 ***
Innovation	.02 *	.00	.02 ***
Intercept	.06 ***	.04 **	.07 ***
Country			
N entrepreneurs	17,332	16,989	
N countries	94	94	106

\* p<.05    \*\* p<.01    \*\*\* p<.001

The second model (Table 5) measures the effect of the interactions of the two institutional variables: culture (H2) and supporting for women entrepreneurs (H3).

The Hypothesis 2a supposes that traditional culture widens the gap between gender and external financing. From the model, no significant results emerges for H2a. The Hypothesis 2b supposes that traditional culture widens the gap between gender and own financing. The results confirm H2b; the gender gap in own financing is widest in traditional culture. Furthermore, the Hypothesis 2c, traditional culture widens the gender's gap of the total amount of financing, is confirmed.

The Hypotheses 3a, 3b and 3c posit that the gender gap in external (H3a), own (H3b) and total financing (H3c) is reduced by institutional support for women entrepreneurship. The results do not confirm these hypotheses.

**Table 5:** Financing affected by gender and institutions in society.

	Own financing		External financing		Total financing	
	main	interactions	main	interactions	main	inter-actions
Gender: Female	-.30 ***	-.30	-.08 ***	-0.08	-.31 ***	-.31
Age	.04 ***	.04 ***	-.02 *	-.02 *	.04 ***	.04 ***
Education	.10 ***	.10 ***	.03 **	.03 **	.12 ***	.12 ***
Income	.10 ***	.10 ***	.00	.00	.11 ***	.11 ***
Opportunity-motive	.12 ***	.11 ***	.00	.00	.11 ***	.11 ***
Innovation	.02 *	.02 *	.00	.00	.02 ***	.02 ***
Traditional culture	.01	.03	.00	-.01	.01	.03
Support for w.ent.	.01	.01	-.01	.01	.01	.02
Gender*Trad.culture		-.04 ***		.00		-.04 ***
Gender*Support f w		.00		-.01		.00
Intercept	.06 ***	.06 ***	.04 ***	.04 **	.07 ***	.08 ***
Country						
N	94	94	94	94	106	106

\* p<.05 \*\* p<.01 \*\*\* p<.001

## **5. Discussion**

Motivated by relatively few studies that relate financing and gender with institutions in the gestation phase of entrepreneurship, this study investigates how the amount of financing business vary according to the gender and how this gap could be wide or narrow depending on the kind of culture (traditional or modern) and the level of regulatory institutions in terms of supporting women entrepreneurs.

Previous studies have highlighted the existence of barriers that make more difficult for women the acquisitions of external financial resources for starting their business (Verheul & Thurik, 2001). Despite in the last years governments have made efforts for promoting women entrepreneurs; the gender gap in amount of external financing used for starting a business still exists. In fact, these analyses confirm that men entrepreneurs use, in general, higher amount of external financing than women entrepreneurs. Furthermore, previous research has also evidenced a gender gap in financing business using own capital. The gap still emerges in this study. Our results show that male entrepreneurs use, in general, higher amount of own capital. Consequently, the research proves the existence of a gap between men and women in the amount of total financing used for starting their businesses. Moreover, these gender gaps are pervasive and omnipresent, in that they exist in virtually every surveyed society.

The gender gaps, however, are not the same everywhere. Gender effects on financing differ in magnitude from country to country. The institutions can moderate these effects. In our knowledge, no other authors have measured how institutions affects – widening or narrowing – the gaps between gender in financing. One of the goals of this paper was to cover this gap considering culture (normative and cognitive institutions) and support for women entrepreneurs (regulatory institutions). From the analysis emerges that the gender gaps in financing are neither universal nor inherent, but are partly rooted in institutions that are

providing more or less support for women entrepreneurship, and thus amenable to change in society.

Specifically, the research shows that the gender effect is moderated by traditionality in culture, in that the gender effect is amplified by traditionality. In other words, the gender gap is widened by traditionality in culture and narrowed by modern or secular-rational culture. This is proven both for own financing and total financing.

Finally, in the paper is supposed that the gap existing between women and men in financing could mediate through the support of women's entrepreneurship. However, this assumption has not been proved in this research. For this reason, further investigations are needed to clarify the phenomenon. In particular, it is vital that future scientific research focus on the regulatory approach used by the various governments for promoting women entrepreneurship and their efficacy. In fact, the governments often support female entrepreneurs with small amount of financial capital (i.e. microcredit) and it is likely that these supports do not help to reduce the financial gaps.

The study makes theoretical, empirical and practical contributions. Theoretically the study goes beyond considering the gendering of financing as a market failure to instead considering a contextualization of gendering as embeddedness in institutions (Scott, 2014), sustained by a normative and cognitive pillar (traditionality in culture) and a regulatory pillar (support for women entrepreneurship). An empirical contribution is to assess the pervasiveness of gender gaps around the world. A practical contribution is to comparatively document the width of the gender gap in each surveyed country, which is relevant for national policy debates and for programs promoting inclusiveness and equality.

## **6. Limitations**

This research has some limitations that need to be acknowledged. One shortcoming pertains to the measurement of both dependent and explanatory variables. In fact, the

dependent variables of own financing, external financing and total financing could be separated in more groups. For example, bank financing, micro-financing, financing from relatives. Despite this, we have decided to follow this subdivision because is legitimated by the Global Entrepreneurship Monitor (GEM), one of the most used dataset in entrepreneurship research. Furthermore, in this paper the variable culture distinguishes two kinds of culture: traditional and modern. We are conscious that several others variables has been used over the years (i.e. Hofstede and Schwartz). However, we consider the used measurement more appropriate for the specific comparison between genders. We are also conscious that other external factors could affect the gaps. We expect that future research might develop this aspect increasing the knowledge of the topic.

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## **Chapter 4: Conclusion**

The explosion of publications and the multidisciplinary approach of the authors have made difficult to study the phenomenon of nascent entrepreneurship. These reasons pushed me to explore and systematize the literature of nascent entrepreneurship research. Through the quantitative method of Co-citation, chapter 1 helps the comprehension of the full topic of nascent entrepreneurship. Furthermore, chapter 1 paves the ways for identifying the gaps in literature and for developing the research questions. Through this study emerges a clear gap between institutions and gender in nascent entrepreneurship research. Despite several authors have studied the gender effects in nascent entrepreneurship, few scholars have considered the possibility to join gender with institutional factors. In this dissertation, I have tried to cover this gap formulating the following research question:

Do institutional factors affect in different way women and men entrepreneurial decisions?

In this regards, I have tried to frame the three institutional pillars (normative, cognitive and regulatory) through two variables: culture, which represents the normative and cognitive aspects and support for women entrepreneurs, which represents the regulatory aspect. Furthermore, in chapter 2 and chapter 3 different entrepreneurial decisions are considered.

Chapter two focused on people's decision of starting a business. I have tried to understand the topic through the following research questions: "How institutions affect the probability of people to become entrepreneurs according to their gender? What is the effect of supporting women entrepreneurs on men population? And may institutions reducing the gaps between men's and women's decisions?"

Chapter three explored the effects of institutional factors on financial decisions. More precisely, I have tried to answer to these questions: "What is the institutional embeddedness



of gendering of financing? And are gender gaps in financing widened by traditionality in culture and narrowed by institutional support for women entrepreneurship?”

GEM data, as a main source of sampling, together with World Value Surveys have been used in this research. The samples used in the second and third papers were fairly representative of nascent entrepreneurs in 90+ countries all over the world from 2005 to 2015. The data used in the first paper were from ISI-Thompson Web of Knowledge. The sample in the first paper considered the articles in English language published from 1991 to 2015.

Results of the papers are summarized and discussed in the following section:

### **Discussion and reflection on the papers**

#### *Paper 1: Mapping Nascent Entrepreneurship Research using the Co-Citation Method*

The first paper helps to supplement the previous literature review on nascent entrepreneurship using the quantitative approach of Co-Citation. The paper supports the comprehension of the phenomenon offering an overview of the structure and development of the field. Furthermore, the paper shows the “invisible links” that connects the major authors of the subject.

More specifically, the result is a map of 59 articles divided in four clusters. Cluster 1 represents the *Exogenous and Institutional Factors*. In this cluster, scholars pay attention to the exogenous factors and all the personal characteristics that push an individual to take the decision to become an entrepreneur. In the lower part of the cluster, the approach of the authors’ changes; in this area, scholars are interested in understanding external factors, institutional contexts and regional or national characteristics. Cluster 2 represents the *Processes and Activities* in which nascent entrepreneurs are involved. Scholars of this group try to understand how the activities for starting a business are organized and planned and how

these activities take place. Cluster 3 represents *Cognitions antecedents*. The cluster focuses on cognitive and psychological characteristics of the individuals. Cluster 4, *Human and Social Capital Drivers*, contributes to the understanding of human, social and financial capital that might influence the emergent phase of the entrepreneurial process.

The results of this research confirm the segmentation of the literature of nascent entrepreneurship elucidating the topic with a rigorous method. The article confirms the distances already highlighted by previous authors (Gartner, 1985; Davidsson et al., 2006; 2012) between personal factors and processes. Furthermore, this research helps to identify the bridges that connect the sub-areas of the research.

*Paper 2: Supporting Women and Entrepreneurial Culture: Two Different Effects in Nascent Entrepreneurship*

The second paper helps to understand the effects of institutions on people's decisions of starting a business and how these decisions occur according to the gender. In the paper, I have considered two institutional factors: entrepreneurial culture and support for women entrepreneurs.

The results of this paper show that entrepreneurial culture has a positive effect both for men and women's decisions. Contrary to expectations, the results show that entrepreneurial culture reduces the gap between men and women's decisions. Furthermore, supporting women entrepreneurs has a positive effect on women's decisions but has a negative effect on men's decisions. From the results also emerges that more a country support women entrepreneurs, lower is the gap between men and women.

These results push us to believe that less stereotypes and barriers allow women to follow the self-employment career. Furthermore, the paper shows the institutional effects from the two perspectives: men and women. The positive effect of entrepreneurial culture emerges in both the cases confirming that entrepreneurial culture has a general positive effect. Despite

supporting women entrepreneurs has a negative effect on men's decision, the results show that also supporting women entrepreneurs has a general positive effects. In light of this, it would seem that political actions that promote in general entrepreneurial culture or that specifically support women entrepreneurs could be used to generate more ventures and consequently a higher growth.

### *Paper 3: Gender Gap in Financing New Business*

The third paper explores the institutional factors of culture (traditionally vs modern/secular) and the support for women entrepreneurs and their effects on the gaps between genders and own, external and total financing.

The results of this study reveal the existence of the gender gap in finance. Men tend to require more own, external and, in general, more financial capital than women. The results of this study reveal that the gender gap in own financing is widest in traditional culture. Moreover, traditional culture widens the gender's gap of the total amount of financing. Contrary to the expectations, the results don't show any significant effect between the support for women entrepreneurs, the gender, and the financial decisions.

Previous studies have highlighted the existence of barriers that make more difficult for women concerning the acquisitions of external financial resources for starting their business (Verheul & Thurik, 2001). This research confirms that this gap is still existing in all the kinds of finance used for starting a business: own, external and total financing. Moreover, this research shows that gender gaps are not the same everywhere. Gender effects on financing differ in magnitude from country to country and the institutions acts moderating these effects.

### **Contributions**

#### **Theoretical contributions:**

The findings and discussion of these three papers create an overall contribution to the topic of nascent entrepreneurship research by adding new knowledge for understanding the field and the institutional effects on women and men entrepreneurs.

The first paper provides an empirical evidence of the fragmentation of the literature of nascent entrepreneurship. The paper contributes towards understanding the links and boundaries existing in the literature. The article supplements previous literature review, thanks to the quantitative and more objective approach. Moreover, this research reveals the school of thought within the field of Nascent Entrepreneurs showing a clear overview of the structure and development of the field.

The findings in Paper 2 specifically contribute to clarify some specific effects of institutional embeddedness. More in detail, the paper makes contribution to the literature concerning differences of gender in entrepreneurship and the institutional theory's effects. The paper reinforces the belief that the decisions of people for starting a business are often affected by external factors. These factors might moderate the gender gaps.

The Paper 3 investigates how the amount of financing a business vary according to the gender and how this gap could be wide or narrow depending on the institutional factors. The paper contributes to develop knowledge about financing in nascent entrepreneurship research. Furthermore, the paper helps to understand gender's differences in nascent entrepreneurship regarding all the kinds of financial capital (own, external and total financing). Finally, the paper contributes to discover the effects of the institutional factors in financing and gender entrepreneurship.

**Practical contributions:**

The three papers represent a useful tool both for scholars and policy makers.

The first paper could be used by scholars to address their future researches. In fact, the findings of this paper might facilitate aspiring authors to better their position in their research in the entrepreneurship landscape and consequently improve the impact of the work.

The second and third papers represent a relevant contribution useful for national policy debates and for programs promoting inclusiveness and equality. It could be possible that

political actions in favour of women entrepreneurship could help to cover the gender's entrepreneurship gaps. Furthermore, governments might evaluate some actions to promote entrepreneurial culture in order to increase the number of nascent entrepreneurs. Finally, it would be seen that political actions for promoting "modern values" could help in reducing the own financial gaps between men and women.

### **Limitations**

This research is not free of limitations.

Some limitations could depend on the methods and measurement. In the first paper, I have used data from the single database "Thompson-ISI. This dataset considered only journals with an official impact factor. Furthermore, the first research is limited to journals covered by Social Science Citation Index (SSCI). Measurement limitations also emerge in the second and third paper. For example, the dependent variables of own, external and total financing could be divided in more groups. Furthermore, the variable culture has been used by different authors in several distinction ways. However, I believe that the variables used in this dissertations fit well with the purpose of my research. Finally, I'm conscious that entrepreneurial decisions depend on a constellation of factors and it is important to be cautious in the interpretations of the results.

### **Final remarks**

From this research emerges that gender gaps still exist in entrepreneurship, both in starting a business and in amount of financing. However, institutions might act for moderating these gaps. The regulatory system of the government could promote women entrepreneurship helping to cover the gap in starting a business. Furthermore, the normative and cognitive institutions could act for narrowing the gap through a modern culture.

