

# **Entrepreneur: Do social capital and culture matter?**

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## **Abstract**

This paper analyzes the effect of the individual perceptions of social capital and culture in entrepreneurial aspirations before and after the economic crisis in Western Europe. Following the approach of the Theory of Planned Behavior (Ajzen, 1991), we advance the analysis of the effect of the perception of subjective norms in the entrepreneurial intentions. We studied the Total Early-Stage Entrepreneurial Activity (TEA) of twelve countries in 2006 and 2010. The results reveal that the perception of having social networks is significant for the TEA, and it increases after the economic crisis. However, the cultural factors do not have a significant impact, except the one related with the perception of social equality. The results obtained through the double perspective of this analysis (individual's social capital vs cultural factor of individualistic perspective) offers a certain dilemma when we try to understand the entrepreneurial intention through the individual's perception of subjective norms, following the Ajzen's model. The more individualist is a person, the lower the weight of its social capital. However, the more a person has access to social networks, the greater his entrepreneurial intention will be. This result opens future lines of research focused on understanding the value of the individual's social capital for different countries and groups of entrepreneurs.

Keywords: individual's social capital; Total Early-Stage Entrepreneurial Activity, human capital; entrepreneurial culture; country effect.

JEL codes: L26, L29

## **Introduction**

The literature on determinants of entrepreneurship has been addressed from different approaches stemming from the fields of psychology, sociology or economics. The most relevant factors that have an impact on the entrepreneurial attitude have also been analyzed from a micro approach considering individual factors (McClelland 1961; Collins et al. 1964; Carsrud and Johnson 1989), and social factors (Neira et al. 2013).

According to Koellinger and Thurik (2012), the entrepreneurial activity is positively affected by the national unemployment cycle, meaning that in Western Europe, countries such as Spain, France or Italy, could somehow mitigate their high unemployment rates by increasing their entrepreneurial activity.

However, there is a lack of studies that relates entrepreneurial intention and social environment. Following the Theory of Planned Behavior (Ajzen, 1991) as conceptual framework, we assume that subjective norm, that is the perceived social pressure to perform or not to perform a behavior, has influence on the entrepreneurial intention of individuals. Given that the individual's perceptions of social environment change along the time, there is still some space unexplored regarded with the analysis of the different TEA among countries in different periods of time (Freytag and Thurik 2010; Audretsch 2009).

Thus, we studied two of the element of the subjective norm: (1) the individual's social capital (Granovetter 1985; Davidsson and Honig 2003; Van der Gaag and Snijders 2004; Fuentes et al. 2010; Nieto and González-Álvarez 2014) and (2) the perception of cultural factors (Thurik and Dejardin 2011a; Sang et al. 2009; Mueller and Thomas 2000; Hayton et al. 2002; McGrath and MacMillan 1992; Shane 1994; Davidsson and Wiklund 1997). The final goal of the paper is to understand the effect of the perception of the individual's social capital and culture in the entrepreneurial aspirations before and after the economic crisis in Western Europe.

As specific research hypothesis, we propose: (1) The closeness of previous entrepreneurs will increase the entrepreneurial intention, (2) the fear of failure, proxy of the cultural dimension of uncertainty avoidance, will reduce the entrepreneurial intention, (3) the consideration of starting a new business as desirable career choice in a country will increase the entrepreneurial intention, (4) the social concerns about equality conditions in a country will reduce the entrepreneurial intention, (5) the social status and respect obtained by the successful entrepreneurs will increase the entrepreneurial intention and (6) the media relevance of entrepreneurs will increase the entrepreneurial intention of people in a country.

Due to the significant changes produced during the financial crisis of 2008 in Western Europe countries, we analyzed the previous hypotheses in two years: 2006 and 2010, using data provided by the Global Entrepreneurship Monitor (GEM).

The paper is structured as follows: We present in section II the main outcomes of previous research on determinants of entrepreneurship and the conceptual framework used in this analysis. In section III we explain the methodological approach used in the paper and the main results. Finally, in section IV we submit the conclusions of the analysis, and provide new insights.

### **Social capital and culture: Lessons learned**

Recently researchers and practitioners have increased their interest in understanding the relationship between innovation, entrepreneurship and economic development. Business ecosystems let innovation through mix strategies of collaboration and competition (Zahra and Nambisan 2012). However, different values, skills, priorities, and attitudes differentiate an entrepreneurial society from others. The entrepreneurial society exists where entrepreneurship is the base for economic growth, job creation, and competitiveness (Audretsch 2009). This culture perception is a relevant factor that can explain the economic performance of America compared with Europe and Asia in the 1990s, although due to the complexity of this issue, there is a lack of ambitious studies that offer a full understanding of this approach.

Using a multidisciplinary perspective, Alvarez and Urbano (2011) and Neira et al. (2013) identified three different research approaches: the economic approach, in which entrepreneurship arises in response to economic issues (Audretsch and Thurik 2001; Wennekers and Thurik 2009; Audretsch and Keilbach 2004; Parker 2004); the psychological approach, that studies the impact of the individual's factors on the entrepreneurial activity and the survival of new firms (McClelland 1961; Collins et al. 1964; Carsrud and Johnson 1989; Kato and Honjo 2015); and the sociological or institutional approach, that explores the role of the socio-cultural environment as a determinant of the decision to start up a new business (Shapero and Sokol 1982; Aldrich and Zimmer 1986; Berger 1991; Busenitz et al. 2000).

However, most studies are focused on the analysis of how higher levels of relevant human capital, as indicated by education, experience and perceptions of one's own skills, increase the individuals' propensity to engage in venture start-up processes (Davidsson 2006), and most of them forget the analysis of the effect of social capital and culture in the entrepreneurial intention of an individual.

The Theory of Planned Behavior (Ajzen, 1991) identifies three determinants of intention of executing a behavior: (1) attitudes toward the behavior, which refers to the positive or negative evaluation of the behavior; (2) subjective norms, which refers to the perceived social pressure to perform a behavior and (3) perceived behavioral control, which represents the perceived ease or difficulty of performing the behavior. In this analysis we focus on identifying the determinants of entrepreneurial intention regarded with subjective norm, considering two elements: individual's social capital and cultural factors (Figure 1).

Insert Figure 1. Subjective norm and entrepreneurial intention. Adapted from Ajzen (1991)

### *Individual's social capital*

The individual's social capital has been defined as *the collection of resources owned by the members of an individual's personal social network, which may become available to the individual as a result of the history of these relationships* (Van der Gaag and Snijders 2004, p.200).

The study of the influence of social capital on entrepreneurship has increased in recent years. The works of the French sociologist Bourdieu (1986), those of Coleman (1988) in the sociology of education and, in particular, the work of Putnam et al. (1993) in the field of political sciences have opened a new line of research. However, there is still a lack of studies focused on analyzing how social capital -originating from personal networks- interacts with the entrepreneur's human capital to generate knowledge for new venture development (Santarelli and Tran 2013).

The first contributions related to social capital and entrepreneurship are those of Helliwell and Putnam (1995) and Knack and Keefer (1997). Throughout the last decade the economic literature began to consider social capital as one of the production functions, and new instruments have been developed in order to measure this factor. Table 1 summarizes the proxy indicators of the individual's social capital that have been used in previous studies.

Insert **Table 1** here

Grootaert and Van Bastelaer (2001) point out that the measure of social capital should be addressed using the following proxy indicators: membership in local associations and networks. These proxies provide good measures of

trust and adherence to norms, an indicator of collective action. Likewise, Van Oorschot and Arts (2004) classify social capital indicators into three categories: 1) social networks: relations within and between families and friends (informal sociability); involvement in community and organizational life (e.g. volunteering); public engagement (e.g. voting), 2) social norms: shared civic values, norms and habits of cooperation, and 3) social trust: overall trust in social institutions and in other people.

According to this approach, Quillian (2006) assesses three types of measures traditionally used in empirical studies. The first group aims to measure social relationships by assessing the number and properties of relationships among individuals. Thus, according to this author, social capital can be measured by the intensity of contact and the frequency of interaction, as well as the consequences of using a social network. The second group of measures considers the individuals' beliefs about their relationships with others, by assessing attitudes, expectations and trust as parameters to be measured. Finally, the third group considers the social ties of individuals, by assessing the membership in certain voluntary organizations as an indirect measure.

In our study, we emphasize the importance of the individual's social capital in obtaining the resources needed for the early stages of the process of creating a new company (Aldrich 2012; Davidsson and Honig 2003; Lechner et al. 2006). Participation in social networks emerges as a critical factor in the decision for becoming an entrepreneur and the subsequent result of action undertaken (Jack and Anderson 2002; Aldrich and Fiol 1994). More specifically, Aldrich and Zimmer (1986) contrast how participation in social networks is a key factor for entrepreneurs.

Considering the approach of the Social Network Theory (Granovetter 1985; Davidsson and Honig 2003), the social capital of potential entrepreneurs could predict who will start the process of creating a new company and who will proceed in order to complete it successfully, and this is related with the individual's human capital. Social networks' membership usually is considered a source of information of business opportunities, and it may provide entrepreneurs access to additional resources (funding or business experience). Moreover, experienced entrepreneurs often serve as reference models, playing a key role in motivating other entrepreneurs to create their own company. In this sense, and according to Arenius and Minitti (2005), individuals who know other people working as self-employers are more than twice as likely to become entrepreneurs.

Thus, we propose the hypothesis H1: *The closeness of previous entrepreneurs will increase the entrepreneurial intention*

The proxy that we use to measure the effect of the individual's social capital in their entrepreneurial aspirations (TEA) is the social network of the individual, that is, the knowledge of other entrepreneurs, according to the GEM's data.

### *Cultural factors*

Hofstede (1980, 2001) defined culture as the collective mental programming that distinguishes members of a group and compared it to the software of the mind, meaning that culture is considered to be the social basis of human behavior in a way that it can even influence the natural act of thinking (Hall 1976).

Thurik and Dejardin (2011a) state that whereas a number of individually relevant determinants of entrepreneurship have been widely explored (Grilo and Thurik 2008; Parker 2009), differences across countries remain unexplored. In other words, whereas inter-temporal differences can be due to economic effects -such as income per capita- and to technological developments, there are contemporary differences mainly of an institutional or cultural nature. So the individual's perceptions of cultural factors, as a subset of stable contextual factors, may play an important role in their entrepreneurial activity (Freitag and Thurik 2010; Audretsch 2009).

Thurik and Dejardin (2011a, 2011b) provide an analytical framework to investigate the relationship between culture and entrepreneurship and explain differences in the entrepreneurial activity rates: (1) *the aggregate psychological traits perspective*: the more people with entrepreneurial values in a country, the more individuals will display an entrepreneurial behavior (Davidsson 1995), so higher entrepreneurial activity is explained by the aggregate effects of individual characteristics; (2) *the post-materialism perspective*: a society that is more post-materialist is less likely to be entrepreneurial; (3) *the social legitimation or moral approval approach*: a higher entrepreneurial activity is found in societies where the entrepreneur is considered to have a high social status, the education system recognizes and supports entrepreneurship, and tax incentives encourage business start-ups (Etzioni 1987); and (4) *the dissatisfaction approach*: here, the explanation of different entrepreneurial activity across nations and regions is linked to differences in values and beliefs between potential entrepreneurs and the population as a whole. According to the previous literature review, Table 2 summarizes the proxy indicators of culture used in previous studies. In this sense, the dimensions of uncertainty avoidance and risk aversion have increased their relevance as cultural variables influencing the entrepreneurial motivation.

Insert **Table 2** here

Some cultures are more likely to be entrepreneurial when dimensions such as individualism (Hofstede 2001), which promotes corporate values, are predominant over collectivist cultures. Shane (1994) also highlights the dimensions of Hofstede (2001) which encourage the entrepreneurial features of power distance and masculinity.

In this sense, *uncertainty avoidance* is a cultural trait closely linked to attitudes of risk and, consequently, to the entrepreneurial propensity within a country. The higher uncertainty avoidance individuals display, the less entrepreneurial the society is. However, according to the aggregate psychological approach, this statement should lead to the opposite result expected from the dissatisfaction approach. Wennekers *et al.* (2007) consider that a personal trait (*risk aversion*) and its counterpart culture (*uncertainty avoidance*) may have a diverging impact on entrepreneurship. These authors have tested the direct and indirect effects of uncertainty avoidance on a panel dataset (1976-2004) for 21 OECD countries. Results tend to support the dissatisfaction explanation. They found a positive *direct* influence of uncertainty avoidance on business ownership rates, indicating that a climate of high uncertainty avoidance in existing firms and organizations may push entrepreneurs towards self-employment. Following this approach, only when institutions provide a favorable environment for productive entrepreneurship, there is a positive impact on economic growth (Sobel 2008).

Finally, Estrin *et al.* (2013) also conclude that institutional deficiencies, in terms of protecting property rights, create unpredictability in the environment and constrain the entrepreneur's growth aspirations.

Although there are several contributions to this line of study, empirical research on the relations between culture and entrepreneurship is a relatively new approach. In order to address the existing gap in the literature, we propose a framework to analyze the effect of cultural factors on entrepreneurship, considering the following variables: (1) Fear of failure (*Fearfail*), (2) Entrepreneurship as a desirable career choice (*Nbgood*), (3) Concerns about social equality (*Equalinc*), (4) the entrepreneur's status (*Nbstatus*) and (5) the media influence (*Nbmedia*). According to this approach, we propose the hypotheses:

H2: *The fear of failure, proxy of the cultural dimension of uncertainty avoidance, will reduce the entrepreneurial intention*

H3: *The consideration of starting a new business as desirable career choice in a country will increase the entrepreneurial intention*

H4: *The social concerns about equality conditions will reduce the entrepreneurial intention in a country*

H5: *The social status and respect obtained by the successful entrepreneurs will increase the entrepreneurial intention*

H6: *The media relevance of entrepreneurs will increase the entrepreneurial intention of people in a country.*

Due to the big changes in the entrepreneurial context of Western Europe countries during the financial economic crisis, we analyze data to test the hypothesis (H1-H6) in two years: 2006 and 2010.

### **Results: Comparison before and after the financial crisis**

In order to understand whether the economic crisis of 2008 influenced the perception of the importance of social capital and culture for entrepreneurship, we used data from the Global Entrepreneurship Monitor (GEM) project (2006 and 2010 surveys) for Western Europe.

The Global Entrepreneurship Monitor (GEM) is the world's foremost study regarding entrepreneurship. From 1999 the GEM collects information about the whole process of entrepreneurship and the entrepreneurial behavior and attitudes of individuals in several countries. In this paper the data come from the Adult Population Survey (APS) which tracks the entrepreneurial attitudes, activity and aspirations of individuals. The survey is conducted among a minimum of 2000 adults in each country.

The GEM divides the countries that take part in the study in two groups. First, it classifies economies in three levels (factor-driven, efficiency-driven, and innovation-driven) based on the World Forums Global Competitiveness Report. Second, the GEM considers geographic factors, grouping countries into six geographic regions - SubSaharan Africa, the Middle East and North Africa- South Asia, Latin America and the Caribbean, Eastern Europe, Asia-Pacific and the United States and Western Europe (Kelley et al. 2010). Using the second classification, we selected Western Europe in order to carry out our empirical work. The countries included in that group were Greece, the Netherlands, Belgium, France, Spain, Italy, Sweden, Norway, Germany, Ireland, Iceland and Finland. We excluded Portugal and Switzerland because they had no data in 2006, Denmark because it has no data for cultural variables, and the United Kingdom as it is overrepresented in the GEM 2006.

Data were harmonized previously to ensure the comparativeness of the variables in the models analyzed. The countries were selected due to their similarities in the innovation perspective and the existence of knowledge-intensive firms based on a growing service industry.



The analysis was designed to identify the effect of individual social capital and the perception of culture in the Total Early-Stage Entrepreneurial Activity (TEA), considering country, individual characteristics and perception as control variables (Table 3). The analysis was developed for 2006 and 2010, that is, before and after the economic crisis of 2008 in Western Europe. The relevance of the TEA as a dependent variable is due to its role as the GEM's most well-known index. The TEA represents the percentage of the population aged between 18-64 who are either a nascent entrepreneur<sup>1</sup> or owner-manager<sup>2</sup> of a new business.

As explanatory variables, we selected the individual's social capital, the perception of the existence of social networks –which may help to start a business (*social network*) and cultural factors –those related to the consideration of entrepreneurship in society- as proxy variables for the individual social capital. As regards cultural factors the variables selected were: (1) Fear of failure (which may prevent an individual from starting a new business) (*Fearfail*), (2) entrepreneurship as a desirable career choice (the perception of starting a new business as a desirable career choice) (*Nbgood*), (3) concerns about social equality in society (in terms of the standards of living) (*Equallinc*), (4) the entrepreneur's status (the status and respect that the successful entrepreneur has in society) (*Nbstatus*) and (5) the media influence (the relevance given by the media to the stories of successful entrepreneurs) (*Nbmedia*).

Finally, countries, individual characteristics (*Gender, Age, Education, Occupation and Income level*), the individual's perceptions regarding the existence of opportunities to start a business (*Opportunity*) and their possession of skills or experience to undertake an entrepreneurial activity (*Skills*), were used as control variables.

Insert **Table 3** here

We used a bivariate analysis (Table 4) to compare the TEA in 2006 and 2010. We also used the non-parametric Wilcoxon-Mann-Whitney test in order to measure the possible changes in these years. As a robustness measure we use a two sample t-test of proportion.

Insert **Table 4** here

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<sup>1</sup> People actively involved in setting up a business that they will own or co-own, has not paid salaries, wages or any other payments to the owners for over three months

<sup>2</sup> People who are currently owners-managers of a new business, i.e., owning and managing a running business that has paid salaries, wages, or any other payments to the owners for over three months, but not more than 42 months

The results of the t-test confirm that there is a statistical significant difference between the distribution of the TEA in 2006 and 2010. In order to assess the effect of the explanatory variables on the TEA in these years, we estimated a binary logistic regression (Table 5).

Models were estimated separately, then we used the Wald test to compare the effects of every coefficient with two regression models. The null hypothesis was that coefficients are equal in the two years analyzed, so if we reject this hypothesis, we can conclude that there was a statistically significant difference between a coefficient in 2006 and 2010.

Insert **Table 5** here

#### *Individual's social capital*

We found that having other entrepreneurs close was important for potential entrepreneurs, especially after the economic crisis. So hypothesis H1, *The closeness of previous entrepreneurs will increase the entrepreneurial intention of people in a country* is confirmed. The fact of knowing entrepreneurs (social networks as a measure of the individual's social capital) is positively and significantly related with the Early-Stage Entrepreneurship in both years. Besides, it is especially relevant after the economic crisis (2010). This outcome confirms previous results from other studies using different surveys (Aldrich and Zimmer 1986; Aldrich and Fiol 1994; Jack and Anderson 2002; Arenius and Minniti 2005). In this sense, individuals perceive that knowing previous entrepreneurs motivates them to create their own company, particularly during the economic crisis.

#### *Cultural factors*

Regarding the effect of cultural factors, the only significant variable is the concern about social equality in society, which changes the effect in the entrepreneurial intention. So only hypothesis H4, *The social concerns about equality conditions will reduce the entrepreneurial intention in a country*, is confirmed.

Regarded with the two years of study, in 2006 potential and nascent entrepreneurs preferred that everyone had a similar standard of life. However, after the economic crisis, in average, those who wanted to create a new business did not consider the social equality a desirable cultural value. Thus, the results of the effect of variables related to the characteristics and perceptions of individuals are similar to other studies (Carsrud and Johnson 1989; Arenius and Minniti 2005; Neira et al. 2013).

#### *Control variables*

Being a woman is significantly related to a decrease in the entrepreneurial motivation during the economic crisis. Regarding age, individuals over 55 years are much less likely to be involved in an entrepreneurial project after the crisis, meaning a lack of opportunities for self-employment in countries with high unemployment rates such as Spain, France or Italy. People with different times of occupation showed a negative and significant effect in the TEA, compared with their reference category (full or part time).

Unlike 2006, in 2010 highly educated individuals showed more interest in starting their own company. However, the richest (upper income levels) were less prone to assume the risk of being involved in new business projects. The perception of opportunities and having the right skills to run a business showed a significant and positive effect in the TEA. Besides, as expected, fear of failure is negatively related to the entrepreneurial activity.

Finally, the results show, in average, an increase of entrepreneurial activity in Western Europe as a consequence of the economic crisis (2010), when compared to 2006.

## **Conclusions**

This paper explores the social and cultural determinants of the entrepreneurial intention based on the GEM survey in Western Europe, in 2006 and 2010, following the approach of the Theory of Planned Behavior (Ajzen, 1991).

The results show the increase of relevance of the individual's social capital as a support for the entrepreneur during the economic crisis. The knowledge of previous entrepreneurs seems to be the starting point of future alliances or financial support, a way to face adverse environmental conditions. Thus, this analysis confirms the important role of social networks in the entrepreneurial process. In this sense, initiatives to promote the building of effective networks among entrepreneurs could positively affect both the potential and the early-stage entrepreneurial activity in a country. In this sense, the analysis of country differences in terms of the use of social capital as a tool in building alliances or attracting investors and customers becomes an emerging line of research. We also suggest the need of new databases that solve the limitation of the measure of social capital as a dichotomous variable, in order to improve the ability to explain the entrepreneurial intention of this variable.

Regarding with cultural factors, there is not a clear picture of a differential effect of culture before and after the economic crisis, except for a change in the concerns about social equality. The worsening of economic

conditions make entrepreneurs think about the value of the effort following a more individualistic approach. In order to build cultures more involved with the entrepreneurial activity, the cultural consideration of the entrepreneur's role as an important social agent appears to be a pending issue in the educational curriculum and in the media in Western Europe countries.

The main results obtained through the double perspective of this analysis (individual's social capital vs cultural factor of individualistic perspective) offers a certain dilemma when we try to explain the entrepreneurial intention through the individual's perception of subjective norms, following the Ajzen's model. The more individualist is a person, the lower the weight of its social capital. However, the more a person has access to social networks, the greater his entrepreneurial intention will be. Thus, the study of the contrary effect of both issues also emerges as a new research gap. This analysis adds new evidences of the gender barriers to entrepreneurship, and also shows how high unemployment rates influence the entrepreneurial motivation of the most educated individuals. This analysis also reinforces the importance of the education in entrepreneurial skills. From our point of view, the perception of the lack of skills of potential entrepreneurs can be addressed through learning programs aimed to increase the competences of these individuals. In this sense, some Western European countries have implemented these kind of programs in the last decade. However, the individual perception of the fear of failure is much more difficult to face from a Government perspective. New studies should be addressed to identify intermediate variables (psychological, financial, institutional), which are involved in the effect of the fear to the entrepreneurial activity.

Finally, although the country effect on entrepreneurship did not show significant results in our research, it is a promising line of research that can add new insights to this field in the future.

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Table 1. Proxy indicators for the individual's social capital

Author	Proxy
Grootaert and Van Bastelaer (2001)	<ul style="list-style-type: none"> <li>- Membership in local associations</li> <li>- Networks</li> </ul>
Van Oorschot and Arts (2004)	<ul style="list-style-type: none"> <li>- Social networks</li> <li>- Social norms</li> <li>- Social trust</li> </ul>
Quillian (2006)	<ul style="list-style-type: none"> <li>- Number, structure or properties of relationships</li> <li>- Attitudes, expectations and trust on relationships</li> <li>- Membership in voluntary organizations</li> </ul>

Table 2. *Proxy indicators for culture*

Author	Proxy
Mueller and Thomas (2000) McGrath and MacMillan (1992) Shane (1994) Davidsson and Wiklund (1997) Hayton <i>et al.</i> (2002)	<ul style="list-style-type: none"> <li>- Individualism</li> <li>- Masculinity/distance to power</li> <li>- Uncertainty avoidance</li> </ul>
Arenius and Minniti (2005)	<ul style="list-style-type: none"> <li>- Opportunity perception, Knowing other entrepreneurs, fear of failure</li> </ul>
Wennekers <i>et al.</i> (2007)	<ul style="list-style-type: none"> <li>- Risk aversion</li> <li>- Uncertainty avoidance</li> </ul>
Vaillant and Lafuente (2007)	<ul style="list-style-type: none"> <li>- Fear of failure</li> </ul>
Estrin <i>et al.</i> (2013)	<ul style="list-style-type: none"> <li>- Institutional protection of property rights</li> </ul>
Noguera <i>et al.</i> (2013)	<ul style="list-style-type: none"> <li>- Fear of ailure, perceive capabilities, perceived opportunities</li> </ul>
Blume (2015)	<ul style="list-style-type: none"> <li>- “Entrepreneurship as a desirable career choice</li> <li>- Entrepreneur’s status</li> </ul>

Table 3: Variables Description

<b>DEPENDENT VARIABLE</b>		
<b>Total Early-Stage Entrepreneurial Activity:</b> Percentage of the population aged 18-64 who are either a nascent entrepreneur or owner-manager of a new business		No (0), Yes (1)
<b>EXPLANATORY VARIABLES</b>		
<b>Individual Social Capital</b>		
Social network	<i>“Do you know someone personally who started a business in the past 2 years?”</i>	No (0), Yes (1)
<b>Cultural Factors</b>		
Fearfail	<i>“Would fear of failure prevent you from starting a business?”</i>	No (0), Yes (1)
Nbgoodc	<i>“In your country, most people consider starting a new business a desirable career choice”</i>	No (0), Yes (1)
Equalinc	<i>“In your country, most people would prefer that everyone had a similar standard of living”</i>	No (0), Yes (1)
Nbstatus	<i>“In your country, those successful at starting a new business have a high level of status and respect”</i>	No (0), Yes (1)
Nbmedia	<i>“In your country, you will often see stories in the public media about successful new businesses”</i>	No (0), Yes (1)
<b>CONTROL VARIABLES</b>		
<b>Individual Characteristics</b>		
Gender	Male (1), Female (2)	
Age	18-24 (1), 25-34 (2), 35-44 (3), 45-54 (4), 55-64 (5), 65+ (6)	
Education	None (0), Some secondary (1), Secondary (2), Post-secondary (3), Grad Exp (4)	
Occupation	Full: full or part time (1), Part time only (2), Retired, disabled (3), Homemaker (4), Student (5), Not working, other (6), Self-employed (7)	
Income level	Lowest 33% tile (0), Middle 33% tile (1), Upper 33% tile (2)	
<b>Perception</b>		
Opportunity	<i>“In the next six months, will there be good opportunities to start a business in the area where you live?”</i>	No (0), Yes (1)
Skills	<i>“Do you have the knowledge, skills and experience required to start a new business?”</i>	No (0), Yes (1)

Table 4: Bivariate analysis of TEA in 2006 and 2010

	2006	2010
<b>TEA</b>		
No	94.02%	95.56%
Yes	5.98%	4.44%
Two sample t test of proportions	11.8404***	
Wilcoxon-Mann-Whitney test z	11.84***	

Table 5: Logistic regression with interactions

Variables Involved in Total early-stage Entrepreneurial Activity (TEA)	2006	2010	Wald test ( $\chi^2$ statistics)
<b>INDIVIDUAL SOCIAL CAPITAL</b>			
Social network			
Yes	0,262***(3,38)	0,652***(10,79)	10.6955***
<b>CULTURE FACTORS</b>			
Fear of failure			
Yes	-0,586***(-6,89)	-0,497***(-7,59)	0.4597
Equal standard of living			
Yes	0,101(1,29)	-0,116(-1,95)	3.2526*
Nbgood			
Yes	-0,0675(-0,82)	-0,0461(-0,75)	0.0302
Nbstatus			
Yes	-0,0921(-1,15)	-0,00251(-0,04)	0.5115
Nbmedia			
Yes	-0,131(-1,69)	0,00773(0,13)	1.3243
<b>CONTROL VARIABLES</b>			
Gender			
Female	0,0769(0,97)	-0,175**(-2,75)	3.9577**
Age			
25-34	0,202(1,42)	-0,0474(-0,42)	1.0732
35-44	-0,0568(-0,39)	-0,0808(-0,70)	0.0100
45-54	-0,210(-1,38)	-0,339**(-2,82)	0.2752
Over 55	-0,351*(-1,96)	-0,768***(-5,28)	2.3764
Type of work			
Part time only	-0,0139(-0,07)	-0,611***(-5,37)	4.4503**
Retired, disabled	-1,471***(-4,58)	-1,897***(-6,30)	1.0689
Homemaker	-2,651***(-5,81)	-1,583***(-5,89)	3.3422*
Student	-1,946***(-5,88)	-1,221***(-6,39)	2.8004*
Not working, other	-1,346***(-6,29)	-1,008***(-7,91)	1.6039
Education level			
Secondary degree	-0,00642(-0,06)	0,0672(0,71)	0.1799
Post-secondary	-0,0416(-0,26)	0,213*(2,51)	1.3667
Graduate experience	-0,148(-1,43)	0,250(1,65)	3.2646*
Income level			

Middle 33% tile	-0,0729(-0,77)	-0,302**(-3,29)	2.0245
Upper 33% tile	0,106(1,10)	-0,470***(-5,32)	12.2607***
Country (ref: United States)			
Greece	-1,216***(-4,88)	-0,619***(-3,37)	2.6805
Netherlands	-0,703**(-3,02)	-0,128(-0,83)	3.1721*
Belgium	-0,828*(-2,50)	-0,759**(-3,25)	0.0235
France	-2,994***(-10,30)	-0,0783(-0,46)	58.4443***
Spain	-2,136***(-13,05)	-0,477***(-4,00)	49.7225***
Italy	-0,563(-1,48)	-1,253***(-4,90)	1.7101
Sweden	-3,451***(-13,15)	-1,054***(-4,23)	36.1487***
Norway	-0,955***(-3,50)	0,00215(0,01)	7.3761***
Germany	-0,636**(-2,81)	-0,372*(-2,56)	0.6897
Ireland	-0,458*(-2,04)	-0,0267(-0,18)	1.9864
Iceland	-0,747**(-3,19)	0,155(1,00)	8.1081***
Finland	-1,854***(-7,53)	-0,174(-1,03)	27.4985***
PERCEPTION			
Opportunity			
Yes	0,440***(5,77)	0,514***(8,41)	0.3816
Skills			
Yes	1,831***(15,21)	2,006***(21,33)	0.9404
Constant	-1,793***(-7,26)	-3,473***(-17,23)	17.9848***
Observations	13637	26211	

Appendix A: Correlation matrix of TEA and the regression variables

YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2006														
1	1													
2	-0,0649	1												
3	-0,0451	-0,0046	1											
4	-0,125	0,1965	-0,0518	1										
5	0,0335	0,0027	-0,16	-0,1347	1									
6	0,0531	-0,0853	0,0147	-0,1657	0,2906	1								
7	0,1059	-0,1037	-0,1289	-0,0703	0,1118	0,105	1							
8	0,0963	-0,0681	-0,0221	-0,0549	0,0717	0,079	0,1528	1						
9	-0,11	0,0769	-0,0143	0,052	-0,0352	-0,0592	-0,0575	-0,0577	1					
10	0,2149	-0,1301	-0,0117	-0,1314	0,0738	0,1133	0,2282	0,1404	-0,1368	1				
11	0,0057	0,0415	0,0253	0,0292	-0,0785	-0,0427	0,0038	0,0309	0,0692	0,0243	1			
12	0,0014	0,0231	-0,0177	0,0311	-0,0855	-0,0299	0,0317	0,071	0,0514	0,0392	0,1341	1		
13	0,0055	-0,0091	0,0047	0,0378	-0,02	-0,0166	0,0166	0,091	0,0886	0,0131	0,1267	0,2018	1	
14	0,0282	-0,0191	0,0193	-0,0211	0,0146	0,0311	0,0772	0,1421	0,0105	0,0828	0,0797	0,1321	0,1728	1
2010														
N	13637													
1	1													
2	-0,0706	1												
3	-0,0455	-0,018	1											
4	-0,1054	0,1355	-0,1117	1										
5	0,0689	0,0044	-0,1296	-0,1694	1									
6	0,0297	-0,1017	-0,0001	-0,2721	0,2341	1								
7	0,1291	-0,094	-0,1271	-0,074	0,077	0,0804	1							
8	0,0994	-0,0748	-0,0486	-0,0615	0,0795	0,0651	0,1566	1						
9	-0,0852	0,0912	-0,0229	0,0357	-0,054	-0,0376	-0,0398	-0,1147	1					
10	0,1916	-0,1448	0,019	-0,1196	0,1297	0,1159	0,1762	0,0672	-0,1204	1				
11	-0,0331	0,0462	-0,002	0,0382	-0,0882	-0,0751	-0,0341	-0,027	0,0612	-0,0376	1			
12	-0,0048	-0,0222	-0,0275	0,0417	-0,0589	-0,0297	0,0153	0,06	0,004	0,0017	0,1313	1		
13	-0,003	0,01	-0,0254	0,0049	0,0206	-0,0407	-0,0043	0,0601	0,0462	-0,0338	0,0852	0,1592	1	
14	0,0208	-0,0169	0,0375	-0,0301	0,0213	-0,0242	0,0332	0,1016	-0,0113	0,0055	0,039	0,1177	0,1537	1
N	26211													

1 TEA, 2 Gender, 3 Age, 4 Type of work, 5 Level of education, 6 Income level, 7 Social network, 8 Opportunity, 9 Fear of fail, 10 Skills, 11 Equal, 12 Nbgood, 13 Nbstatus, 14 Nbmedia