

The differentiated impact of role models and social fear of failure over the
entrepreneurial activities of rural youths

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Abstract

This paper examines the impact that certain socio-cultural variables have on entrepreneurial activities by rural youths in Spain. To do this so, the results of the Adult Population Survey from the Spanish Global Entrepreneurship Monitor for the year 2009 have been used in a logit model that controls for territorial and aging sources of heterogeneity. The results indicate that youths are more likely to become entrepreneurs and that the presence of entrepreneurial examples and a social stigma of failure affect the probability to engage in entrepreneurship. In addition, rural youths are less entrepreneurial than urban youths and this is partly explained by the lack of entrepreneurial examples in rural areas. These findings give support to the view that support policies in rural areas must first accommodate to improve the attractiveness of rural areas in order to effectively promote entrepreneurship among youths in these territories.

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1. Introduction

Entrepreneurship is increasingly recognised as a fundamental component of economic growth, employment generation, innovation as well as socio-economic development (OECD 2003). On a worldwide scale, the Global Entrepreneurship Monitor (GEM) has been demonstrating since 1999 that there is a strong correlation between business start-up and economic growth (Bosma *et al.* 2010). Different studies show that the social and economic contribution of business start-ups is potentially greater in rural areas (Vaillant and Lafuente 2007; OECD 2009b). According to Bryden and Hart (2005) rural entrepreneurship helps diversify the economic network and thus avoid mono-production dependence, and supply a greater range of services that improve the quality of living in these areas. Likewise, entrepreneurship is a good way to generate opportunities for professional development, social and economic integration, and to maintain the rural population and attract new residents to these territories (Akgün *et al.* 2010).

As a result, the European Union and the OECD consider business start-up as a top priority, and policy recommendations encompass entrepreneurship as an instrument for the economic and social revitalisation of rural areas (European Commission 2003 and 2008; OECD 2003 and 2006). The OECD (2003) points out that the most important barriers to entrepreneurship in rural areas relate to socio-cultural factors as the lack of positive examples of entrepreneurs (role models) and the presence of a social stigma of business failure. In line with these arguments, the European Commission (2004)

highlights role models and the fear of failure as factors that should be taken into account to understand the development of entrepreneurial activities within territories. Evidence is starting to show that rural areas lag behind in entrepreneurial terms not just because of factors related with physical (infrastructure and location) or economic disadvantages, but also because of the inadequate socio-cultural characteristics of their informal institutional framework, which limits effective business activity (Fornahl 2003; Vaillant and Lafuente 2007). It is the factors of the socio-cultural setting that structure the actions of (potential) entrepreneurs, and that affects their motivation or willingness to take on certain opportunities (OECD 2003).

The heterogeneous impact of these socio-cultural factors over entrepreneurial activities across territories (urban and rural areas) has been corroborated by recent empirical research (Lafuente *et al.* 2007; Driga *et al.* 2009). Territorial differences are not the only source of heterogeneity when it comes to explain entrepreneurial activities, and evidence also shows that these factors do not have a homogeneous impact on all population segments. In this sense, studies have mainly evaluated the distinctive effect of these factors over entrepreneurial activities carried out by men and women (see, *e.g.*, Carter *et al.* 2001; Delmar and Holmquist 2004; Driga *et al.* 2009), and by native and immigrants (see, *e.g.*, Levie 2007; Mancilla *et al.* 2010).

However, in this paper we focus on young people, a population segment that has recently received increased attention by scholars and policy makers (Levesque and Minnitti 2006; Rojas and Siga 2009; Thomas 2009; European Commission 2012; O'Higgins 2012). The study of young people and their entrepreneurial activities gains relevance in the context of the current economic downturn. The European Union is

witnessing an economic crisis that is affecting all population segments, and it is especially undermining youths. For 2011 around 20 per cent of youths residing in the European Union are jobless (European Commission 2012). Figures are especially dire for Spain where youth unemployment rose from 21 per cent in 2005 to a staggering 46 per cent in 2011 (The Economist 2012). Spain is not only the country with the highest youth inactivity rates of the European Union (O'Higgins 2012), but was also estimated in 2009 to be one of the countries with the highest proportion of business start-ups by young people (GEM-Spain 2010).

The systematic rise of youth unemployment rates together with the lack of job opportunities for young people, especially in rural areas, has led many administrations to value the social and economic costs of youth inactivity. In this sense, business creation has emerged as a valid medium to channel the human capital of youths back into the economy. As such, North and Smallbone (2006) find that the positive repercussions that entrepreneurship has over rural development is amplified when these entrepreneurial activities are carried out by young people residing in these areas. The authors also highlight that although business start-ups promoted by rural youths potentially make greater local economic and social contributions, current rural entrepreneurship support policies in most OECD countries do not emphasise the youth.

Young people currently represent a population segment that has the potential and susceptibility to become entrepreneurial, and in a rural context young people are especially determinant in the development of these areas. A question arises from the above: Are there differences in the case of rural youths regarding the differentiated impact of certain social traits variables on entrepreneurial activity? From this research

question comes the study's main objective: to determine the differentiated impact of certain socio-cultural variables, entrepreneurial examples and the social stigma of failure, on the entrepreneurial activity of rural youths in Spain.

This study is structured as follows. Section two presents the theoretical framework and the construction of the hypothesis. Section three shows the data and methodology. Empirical findings are presented in section four and section five displays the final conclusions and implications.

2. Theoretical framework and hypotheses

2.1 Young entrepreneurs

In recent decades, several aspects have inspired young people on a worldwide scale to set up their own businesses. First, the increasing human capital of young people has presented them with a wider range of alternatives and a better capacity for the identification and exploitation of business opportunities (Haynie *et al.* 2009). Moreover, young people today are generally better trained in comparison with previous generations, which has made them capable of assuming and creating their own businesses (Honjo 2004). At the same time, the high youth unemployment rates in recent years have become a determinant factor in the entrepreneurship of young people. Entrepreneurship is becoming an increasingly socially accepted and utilised solution for overcoming the lack of work, which allows young adults to develop professionally and contributes to their economic independence (Blanchflower and Meyer 1994).

The idea of proposing entrepreneurship as an instrument to help the economy make efficient use of the human resource of young people is clearly reflected in the different

action plans that such organisations as UNESCO, UNICEF, the World Bank (Nafukho 1998). For several years the European Commission (2003) and the OECD (2003) have been recommending programmes to develop an entrepreneurial spirit with the younger population. In similar fashion, academia has in recent decades been increasingly interested with the issue of young people and business start-ups (Walstad and Kourilsk 1998; Fairlie 2002; Honjo 2004; Fairlie 2005; Levesque and Minnitti 2006; Parker 2006; Aidis and Van Praag 2007; Rojas and Siga 2009; Thomas 2009).

Turning now to the academic discussions that some studies have presented with regard to young entrepreneurs, we can start by saying that most academics agree in defining a young entrepreneur as an individual under the age of 30 that has created or is the process of creating a business (Scherer *et al.* 1989; Bonnett and Furnhan 1991; Blanchflower and Meyer 1994; Schiller and Crewson 1997; Walstad and Kourilsk 1998; Honjo 2004; Levesque and Minnitti 2006; Rojas and Siga 2009; Thomas 2009). One discussion that has been emphasised in the literature is the comparison between youth entrepreneurial activity with that of the rest of the population. A tendency is highlighted here that claims that young people are more likely to be entrepreneurs (Bonnett and Furnham 1991; Honjo 2004; Levesque and Minniti 2006).

Bonnett and Furnham (1991) claim that people with a greater internal locus of control tend to develop entrepreneurial attitudes more easily. By 'locus of control' these authors are referring to the extent to which an individual perceives the success and/or failure of their behaviour as being dependent on themselves (internal locus of control) or their surroundings (external locus of control). In their study, Bonnett and Furnham (1991) also indicate that young people, unlike older individuals, have a greater internal locus of

control. In similar fashion, Honjo (2004) proposes that the capacity for learning and change that young people possess when it comes to accepting business challenges is much greater than it is in older persons. Moreover, as individuals get older they find the idea of starting a new business less desirable because their aversion to risk increases with the years (Levesque and Minniti 2006). In other words, for Levesque and Minniti (2006) there is a greater propensity among young individuals to take risks which therefore make them more likely to become entrepreneurs. On the other hand, some studies are highlighting a growing trend toward entrepreneurial activity on the part of retired individuals (Singh and Verma 2001; Singh and De Noble 2003). However, no significant evidence of this phenomenon has been detected by the GEM-Spain observatory over the last decade.

Another argument refers to the lower opportunity costs of youths when it comes to creating a business (Amit *et al.* 1995), in that if a young person fails in their attempt to be an entrepreneur, they are young enough to easily return to normal employment, as opposed to older individuals, who find this more difficult. On the basis of these proposals, the following hypothesis is formulated:

H1: The probability to engage in entrepreneurial activities is greater among youths.

Another academic discussion regarding the issue of young entrepreneurs is related with whether all youths are equally entrepreneurial or whether, due to certain factors, some young individuals are more inclined towards entrepreneurship than others. Several studies in recent years have indicated that the territory, the place where people reside, is a crucial factor in the existence of differences between young people when it comes to being entrepreneurs (Aitken 2006; North and Smallbone 2006). More specifically,

researchers have proposed that young urban individuals are more likely to be entrepreneurs than rural ones (Stathopoulou *et al.* 2004; Fuller-Love *et al.* 2006; Akgün *et al.* 2010).

Classical and contemporary economic thinking has consistently portrayed urban agglomerations as the preferred setting for conducting business. It has been argued that urban centres offer a greater division of labour (Smith 1776), a larger ('pooled') labour market supply (Marshall 1920), a greater provision of non-traded inputs (Marshall 1920), an easier and cheaper access to markets (Hoover, 1948), a greater availability of complimentary services (Myrdal 1957), better infrastructures (Jacobs 1969), and greater volumes of demand (Krugman 1981; 1991). Wagner and Sternberg (2004) found that entrepreneurial activity in territories with high population density and high growth rates of population show higher rates of nascent entrepreneurs.

In rural territories, as mentioned earlier, there are greater socio-cultural barriers to entrepreneurial activity (Fornahl 2003). In many cases, youths rural may feel attracted to the city lifestyle and the better professional opportunities they might find there; therefore they leave their places of origin, settle in cities, and no longer consider the possibility of creating a business or developing their profession in a rural environment (Meccheria and Pelloni 2006). In a similar fashion, the embedded and relatively immobile character of most business activity make an entrepreneurial career unattractive for those rural youths who long for the city (Akgün *et al.* 2010). Given the aforesaid arguments, we hypothesise that:

H2: The greater probability of youths to engage in entrepreneurship is stronger in urban areas.

2.2 Role models

The OECD (2009a) and the European Commission (2003) recognise that the promotion of role models such as successful business people is one of the fundamental actions in its projects to stimulate an entrepreneurial spirit among youths. Over the years, research has shown that role models are an influential factor on entrepreneurship (Shapiro *et al.* 1978; Speizer 1981; Scherer *et al.* 1989; Gnyawali and Fogel 1994; Krueger and Brazeal 1994; Walstad and Kourilsky 1998; Gibson 2004; Lafuente *et al.* 2007; Lucas *et al.* 2009; Bosma *et al.* 2012).

According to Gnyawali and Fogel (1994), role models should be classified as a socio-economic factor that has an impact on the entrepreneurial process. The latter is one of the dimensions that, according to these authors conditions the environment for business start-ups. Meanwhile, other academics in the area of entrepreneurship have proposed that role models and community have an effect on the decision to set up a new business (Shapiro and Sokol 1982). Wood and Bandura (1989) argue that role models can be used to develop entrepreneurial skills in young people. In turn, Krueger and Brazeal (1994) argue that role models make it possible to increase the perception that setting up a business is a viable proposition. Other studies sustain that there is a positive relation between entrepreneurial role models and entrepreneurial activity (Vaillant and Lafuente 2007). Furthermore, role models are found to have a greater influence over the entrepreneurial activity of younger individuals than for the rest of the population (Murrell 2003; Lafuente and Vaillant 2008). This is because young adults are at a psychological stage in which they are more receptive to such stimuli than older individuals (Erikson 1985).

Meanwhile, depending on the territory where they live and on the manner in which youths socially relate, young people may be more or less influenced towards entrepreneurial activity by role models (North and Smallbone 2006). According to Maleki (1994) and the OECD (2003) rural youths are less influenced by entrepreneurial examples than young urban individuals. These authors discuss the importance of putting young rural people in contact with of entrepreneurial examples o in order to foster ambitions to partake in business initiatives. As a result of these arguments, this study proposes the following hypotheses:

H3a: The personal knowledge of entrepreneurial role models increases the likelihood of being involved in entrepreneurial activities.

H3b: The positive influence of role models over the entrepreneurial activity of rural youths is lower than for their urban counterparts.

2.3 Social fear of failure

From an academic perspective, it has been shown that the likelihood of an individual becoming an entrepreneur is lower in territories with high levels of social stigma of failure (Landier 2004). In other words, in cultures where there is greater tolerance and acceptance of business failure, people tend to be more entrepreneurial (Landier 2004). According to this author, entrepreneurs' fear of failure leads to social stigma or punishment due the inability to achieve the expected business success. Other academics have also found this factor to be influential on entrepreneurial activity (Brockhaus 1980; Herron and Sapienza 1992; Sitkin and Pablo 1992; Busenitz *et al.* 2000).

From the political point of view, the European Union has also considered the importance of the negative influence of the social fear of failure on entrepreneurs, and has included it as one of the problems that should be solved by its Action Plan: The European Agenda for Entrepreneurship (European Commission 2004). However, it has been shown that the impact of this social stigma on entrepreneurs depends upon several factors. One of these is the individual's life cycle depending on their age. People of different ages tend to assume the fear of failure in a different way (Levesque and Minniti 2006). For these authors, of the different segments of the population, youths are less likely to find this as an obstacle to creating a business. One of the reasons that explains this is that youths face less opportunity costs in their entrepreneurial process (Amit *et al.* 1995), mainly they have less to lose than older individuals when trying to set up a business (career, reputation, accumulated, wealth, etc.). Also, young people tend to be less swayed by the perception of risk (Simon *et al.* 2000) because they have less work experience than older people (Blanchflower and Meyer 1994). And as they are less aware of the risks they are taking, their perception of the social stigma of failure is lower (Simon *et al.* 2000).

Similarly, and as commented earlier, the territory is another aspect that studies have shown to have an impact on social fear of failure (Landier 2004). This factor has a different influence in different countries, regions and areas (Saxenian 1994; Wagner 2007; Driga *et al.* 2009). Vaillant and Lafuente (2007) find that in Spain individuals in regions with high levels of social fear of failure are relatively less likely to become entrepreneurs. They comment that the relatively tight social context found in certain rural areas increase the social consequences of entrepreneurial failure. In such a context it is likely that rural youths may be relatively more negatively influenced by the

perception of a social stigma to entrepreneurial failure than is the case for youths living in urban areas. In accordance with these perspectives, the following hypotheses can be inferred:

H4a: The perception of fear of failure reduces the likelihood of being involved in entrepreneurial activities.

H4b: The negative impact from the perception of fear of failure over the entrepreneurial activities of rural youths is greater than for their urban counterparts.

3. Data and Method

3.1 Data and definition of variables

The data used to carry out this research come from the adult population survey (APS) of the Spanish Global Entrepreneurship Monitor (GEM) for the year 2009. The GEM project began in 1998 as an international entrepreneurship observatory, and nowadays more than 70 countries analyse the phenomenon of entrepreneurship using this methodology (GEM 2010). A more detailed description of the GEM methodology is presented in Reynolds *et al.* (2005).

The information generated by the GEM has been used by a large number of researchers all around the world to study entrepreneurship and its determinants (see, *e.g.*, Wagner 2004; Wennekers *et al.* 2005; Lafuente *et al.* 2007; Vaillant and Lafuente 2007; Driga *et al.* 2009). For the case of Spain, the GEM possesses a random and representative population sample of 28,888 individuals aged between 18 and 64 years for the year 2009. Yet, in order to ensure the robustness of our results we dropped from the final sample all observations by those individuals that did not provide an answer to the questions of interest or whose answers were not valid ('don't know' answers).

Therefore the final size of the sample is of 24,695 individuals, of which 4,092 are people younger than 30 years.

With respect to the definition of young people, the criterion used in this research is age based. According to several international bodies, such as the United Nations, the OECD, the International Labour Organization and the World Bank, there is consensus when it comes to considering young people to be all people that are aged between 16 and 24 years. Meanwhile, the European Union and specifically the Spanish Government (INJUVE 2011) share the criterion that young people are those aged between 16 and 29 years.

In relation to business start-up, many academics have precisely characterised young entrepreneurs as those individuals that have created or want to create a business and are aged between 18 and 29 years (Scherer *et al.* 1989; Bonnett and Furnhan 1991; Blanchflower and Meyer 1994; Schiller and Crewson 1997; Walstad and Kourilsk 1998; Honjo 2004; Levesque and Minnitti 2006; Rojas and Siga 2009; Thomas 2009). So, and to ensure academic continuity and scientific rigour, this research adopts this criterion (which is shared by the European Union, Government of Spain and the aforesaid studies) in order to classify a person as young. Similarly, in relation to the method adopted to differentiate urban areas from rural ones, this study uses the criterion proposed by the law (Real Decreto) 752/2010 of the Government of Spain (BOE 2010). Said criterion indicates for each Autonomous Community a list of towns classified as rural.

Table 1 shows the descriptive statistics for the variables used in this study, making a distinction between rural and urban individuals, and also between young and non-young individuals in the different sub-samples analysed.

--- Insert Table 1 about here ---

For the purposes of this study, youth is proxied by a dummy variable taking the value of one if the individual is below 30 years old, and zero otherwise. Table 1 shows that on average adults in the final sample are 43 years old (Table 1). The dependent variable used in this research is that which the GEM calls nascent entrepreneurial activity (Reynolds *et al.* 2005). This dichotomous variable takes the value of one if, in the last 12 months, a person was actively involved in the process of creating his/her own business, and zero if the person is not entrepreneurially active. The entrepreneurial activity variable has previously been used in many studies, in particular those by Uusitalo (2001), Douglas and Shepard (2002), Wennekers *et al.* (2005), Lafuente *et al.* (2007), and Driga *et al.* (2009). With respect to the descriptive statistics presented in Table 1, it is observed that individuals involved in entrepreneurial activities represent 3.12 per cent of the whole sample (Table 1). The rural population makes up 32.23 per cent of the whole sample, and the entrepreneurs among them represent 2.95 per cent. Moreover, of the youth sub-sample 4.01 per cent are involved in entrepreneurial activities, a value that is significantly higher than the entrepreneurship rate for individuals above 30 years of age (2.95 per cent).

To test this study's hypotheses, we selected a series of independent, and also dichotomous, variables that are related with social traits commonly identified in the

literature. The first independent variable of interest relates to entrepreneurial role models. Role models have been used by many academics as an explanatory factor when it comes to analysing business start-ups (Krueger and Brazeal 1994; Walstad and Kourilsky 1998; Gibson 2004; Lafuente *et al.* 2007; Vaillant and Lafuente 2007; Lucas *et al.* 2009). This variable takes the value of one for those who personally know an entrepreneur who has created a business over the last two years, and zero otherwise. In the final sample 29.24 per cent of respondents report the knowledge of a recent entrepreneur, and the proportion of youths who know a recent entrepreneur (39.54 per cent) is significantly higher than the proportion shown by non-youths (27.20 per cent) (Table 1). A greater proportion of the rural population reports the personal knowledge of a role model (31.34 per cent), being this rate greatest in the case of rural youths (41.63 per cent) (Table 1).

The social fear of failure is another factor proposed in several studies as a constraining factor of business start-ups (Busenitz *et al.* 2000; Van Praag and Cramer 2001; Landier 2004; Wagner 2007; Lafuente *et al.* 2007; Vaillant and Lafuente 2007). For the purposes of this study, this variable takes the value of one if the person states that the social fear of failure is an impediment to creating a business. Table 1 shows that the youths perceive significantly less fear of failure (52.03 per cent) than the rest of the adult population (53.62 per cent).

Finally, three control variables are considered in the empirical analysis. First, we introduce gender. This variable has been used, among others, by Driga *et al.* (2009), and Verheul *et al.* (2012) in the study of the gender gap in entrepreneurial activities. The second control variable relates to educational attainment. To create the education

variable we considered three categories (dummy variables): 1) primary education, 2) secondary education and 3) higher education (post-secondary education). These variables take the value of one to indicate the corresponding level of education.

The last control variable used in this paper is the self-confidence in one's own entrepreneurial knowledge and skills. This factor was added to the model as a control variable because it can impact entrepreneurial activities (Van Praag and Cramer 2001; Lafuente *et al.* 2007; McGee *et al.* 2009) through its potential relation to both role model and the fear of entrepreneurial failure. This variable takes the value of one when the person declares that he/she has faith in their entrepreneurial skills, and is assigned the value of zero otherwise.

3.2 Modelling entrepreneurial activity in the presence of different sources of heterogeneity

To determine the differential impact that the selected socio-cultural factors have over nascent entrepreneurial activities by youths and non-youths we perform a logistic regression analysis (Greene 2003). In our logit model, the probability of engaging in nascent entrepreneurial activity ($\Pr(Y_i = 1) = \hat{p}_i$) is modelled as a function of the aforementioned set of independent variables (X_i) where \hat{p}_i is expressed as $\hat{p}_i = e^{X_i\beta_j} / 1 + e^{X_i\beta_j}$, and parameters (β_j) are estimated by maximum likelihood method.

It should be noted that the proposed logit model combines different sources of individual-specific heterogeneity. These sources of variation, in particular the differential effects in the selected socio-cultural factors between individuals are

correlated with other relevant attributes that may affect the likelihood to be involved in entrepreneurial activities (see correlation matrix in appendix A1). Omitting these attributes from the estimation could lead to biased estimates of the probability to engage in entrepreneurial activities. An example based on the framework presented in Section 2 can illustrate this problem. In the presence of entrepreneurial role-models, territories are assumed to enjoy a better entrepreneurial climate, yielding to an increase in the probability of entrepreneurship. Rural areas are recognised as less densely populated than urban areas in terms of both people and established businesses (Lafuente *et al.* 2010), and this could limit the potential exposure to recent entrepreneurial examples. However, geographic and physical tightness make social networks in rural areas more active, and this could increase the probability to know an entrepreneurial role-model who can serve as example to several individuals in the same or other relatively close rural areas (Table 1 shows that the proportion of role-models in rural communities is greater). In this case the specific influence of the latter role-model would be greater compared to the case of an urban role-model, and this cross-sectional variation in the exposure to role-models would yield to an apparently greater positive effect of the personal knowledge of role-models over entrepreneurship in rural areas.

We can try to control for such effects, however, there always remains a spurious correlation hazard. In this paper there are three sources of cross-sectional heterogeneity under analysis: 1) between youths and non-youths, 2) between individuals residing in rural and urban areas, and 3) between individuals exposed to the proposed socio-cultural factors and those who are not.

Each source of variation is prone to yield spurious conclusions about the probability to be involved in entrepreneurial activities in specifications where the variation of the effect of the analysed variables is only given by an individual criterion based on age. For example, the differences between youths and non-youths could easily be driven by individual-specific heterogeneity which can be largely captured by territorial effects according to our framework. The effect of the socio-cultural factors on their own potentially blurs into other shifts in the decision to become entrepreneurially active. Differences in the effect of the selected socio-cultural factors within youths and non-youths groups can result from unobserved differences in individual features that may be correlated with different tastes for an entrepreneurial career in rural and urban areas. Thus, combining these three sources of heterogeneity offers a more comprehensive modelling strategy.

For example, while there may be a number of reasons why youths are more likely to engage in entrepreneurship than non-youths, an analysis of the change in the probability of entrepreneurship across these groups given their location allows at holding other differences constant at their means. Similarly, when the comparison between rural youths and urban youths given the exposure to socio-cultural factors is in place, we can control for individual cross-sectional differences that may be correlated with territorial variables. This is the fundamental cornerstone of our modelling strategy.

To examine the differential influence that rurality and the selected socio-cultural factors have over youths and non-youths' probability of entrepreneurial activities, we carry out two applications of the same model. The first application, presented in equation (1),

takes into consideration the joint effect of being youth and rurality over nascent entrepreneurship.

Entrepreneurial

$$\text{Activity}_i = \beta_0 + \beta_1 \text{Control}_i + \beta_2 \text{Rural}_i + \beta_3 \text{Youth}_i + \beta_{23} \text{Rural}_i \times \text{Youth}_i + \beta_4 T_i + \varepsilon_i \quad (1)$$

In equation (1) ε_i is the logistic distributed error term for the *ith* cases. Control variables correspond to the entrepreneur's profile, namely, gender, educational attainment and self-confidence in one's own entrepreneurial skills. In our model specifications *T* refers to the variables related to the analysed socio-cultural factors, i.e., the personal knowledge of recent entrepreneurs (role models), and the fear to entrepreneurial failure.

The magnitude that the key independent variables have over entrepreneurship is determined by the marginal effect (γ_x). Yet, unlike linear models marginal effects apply only to the case of individual independent variables. In non-linear models the interaction effect, i.e., the change in both interacted variables with respect to the dependent variable does not equal to the marginal effect of changing just the interaction term. In addition, the interaction effect in non-linear models may have different signs for different values of the covariates. Thus, the parameter estimate of the interaction term in non-linear models does not necessarily indicate the sign of the interaction effect.

Thus, to correctly corroborate our framework and identify the factors that make young individuals more prone to nascent entrepreneurial activities we use the method proposed by Ai and Norton (2003). Through this procedure we obtain robust interaction effects for the variables of interest in which the change in the predicted probability to pursue nascent entrepreneurial activities results from the double discrete difference with respect

to the rural dummy variable (x_2) among youths (x_3), i.e., $\gamma_{23} = \frac{\Delta^2 F(X, \beta)}{\Delta x_2 \Delta x_3}$,

where $X = x_2, x_3$. The procedure developed by Ai and Norton (2003) also allows us to test whether the real magnitude of the interaction term is different from zero, $\gamma_x \neq 0$, even if the coefficient obtained from the logistic model is not statistically significant.

In terms of our hypotheses, we expect that $\gamma_3 > 0$ in equation (1), meaning that youths are more likely to pursue nascent entrepreneurial activities (**H1**). We also expect that $\gamma_{23} < 0$ indicating that rural youths are less involved in entrepreneurship (**H2**). Concerning our hypothesis **H3a** we expect $\gamma_4 > 0$ when T refers to the role-model variable, indicating that the probability to engage in entrepreneurship increases among people who personally know a recent entrepreneur. A negative sign in the parameter estimate related to the fear to failure variable ($\gamma_4 < 0$) indicates that the perception of fear of failure reduces the likelihood of being involved in entrepreneurial activities (**H4a**).

In the second application, equation (2), we test whether the impact of the selected socio-cultural factors over the probability of entrepreneurship in rural and urban individuals differs between youths and non-youths in our sample. To correctly do this so the formulation of the second model has the following form:

Entrepreneurial

$$\text{Activity}_i = \delta_0 + \delta_1 \text{Control}_i + \delta_2 \text{Rural}_i + \delta_3 \text{Youth}_i + \delta_4 T_i + \delta_{23} \text{Rural}_i \times \text{Youth}_i + \delta_{24} \text{Rural}_i \times T_i + \delta_{34} \text{Youth}_i \times T_i + \delta_{234} \text{Rural}_i \times \text{Youth}_i \times T_i + \varepsilon_i \quad (2)$$

In equation (2) second level interaction terms control for changes in the probability of entrepreneurship among rural and urban youths (δ_{23}), and for changes in the impact of the selected socio-cultural factors across territories (δ_{24}) and among youths and non-

youths (δ_{34}). The triple interaction term (δ_{234}) captures the effect over entrepreneurial activities of the analysed socio-cultural factors (relative to those who are not exposed) in rural (relative to urban) youths (relative to non-youths). As in equation (1), the hypotheses are tested based on the magnitude and significance of the marginal effects, and cross differences are estimated à la Ai and Norton (2003). The triple interaction effect is a third difference and it can be derived analogously, as it represents the change

in the second difference, $\gamma_{23} = \frac{\Delta^2 F(X, \delta)}{\Delta x_2 \Delta x_3}$, when δ_4 changes from zero to one, holding

the rest of variables constant at their means, that is $\gamma_{234} = \frac{\Delta^3 F(X, \delta)}{\Delta x_2 \Delta x_3 \Delta x_4}$. A detailed

description of the derivation of third differences is offered by Cornelissen and Sonderhof (2009).

When the socio-cultural factor analysed is the personal knowledge of a role model, a negative result in the triple interaction term ($\gamma_{234} < 0$) indicates that the positive influence of role models over entrepreneurial activities is weaker among rural youths than among their urban counterparts (**H3b**). A greater negative impact of the variable related to fear to failure among rural youths would confirm our hypothesis **H4b**.

4. Results

Table 2 below presents the results from the logit model which attempts to determine whether the potential differentiated impact of role-models and fear of failure over nascent entrepreneurial activity could explain entrepreneurial differences across rural and urban youths. Rather than reporting coefficients, Table 2 reports the estimated

change in the probability of engaging in entrepreneurial activities. The complete set of logit estimates are presented in the appendix (Table A2).

The first column of Table 2 presents the model that considers all independent variables individually, while column two introduces an interaction term to test whether rural youths are less likely to be involved in entrepreneurial activities. Similar to Honjo (2004) and Levesque and Minniti (2006), empirical findings in columns one and two are consistent with our first hypothesis (**H1**) as they indicate that the probability of entrepreneurship is greater among youths. More specifically, the result in specification one shows that, holding the rest of variables constant at their means, the probability of nascent entrepreneurship rises 0.31 percentage points for individuals below 30 years, compared to the probability of people above this age threshold. The second hypothesis suggests that the greater probability of youths to becoming entrepreneurially active is stronger in urban areas. From the results of column two in Table 2, it can be observed that the territorial source of heterogeneity (γ_{23}) does not help explain differences in the entrepreneurial activity rates of youths and non-youths residing in rural areas. Yet, the coefficient for youths in this specification suggests that, controlling for territorial variations youths residing in urban areas are more likely to engage in entrepreneurship.¹ Thus, from this result the second hypothesis **H2** is confirmed.

The results from estimations one and two of Table 2 support hypothesis **H3a**, as they consistently confirm that that the personal knowledge of recent entrepreneurs (role models) has a positive impact over the probability of entrepreneurship. In particular, results in specification two indicate that the probability to engage in entrepreneurial activities among people who know a role model rises 1.21 percentage points, relative to

the probability of those individuals who are not exposed to entrepreneurial role models. Concerning the findings for the variable related to the social fear to failure, the negative results of the first difference are in accordance with out hypothesis **H4a** that the perception of fear of failure reduces the likelihood of being involved in entrepreneurial activities. In this case from column two it can be seen that among individual who perceive a social fear to failure, the probability of entrepreneurship falls by 0.92 percentage points, relative to the probability of individuals who do not perceive a social fear to failure.

--- Insert Table 2 about here ---

So far results have only controlled for changes in the probability of engaging in entrepreneurship among youths residing in rural or urban areas. Yet, rural and urban youths are not only exposed to a different economic setting, but also to different incentives when it comes to engage in entrepreneurship, and territorial differences in the probability of entrepreneurship of youths and non-youths can become visible if such effects, in part captured by the selected socio-cultural factors, are accounted for. This implies the inclusion of interaction terms in our model estimation, and results are presented in specifications three and four of Table 2.

Model three presents the results for the third difference that considers changes in the probability of entrepreneurship as a result of variations in aging, territory, and in the impact of role models. Here, we observe that the probability of youths to become entrepreneur is 0.30 percentage points greater relative to the probability shown by people above 30 years old. Once more, results indicate that entrepreneurial activities are

positively related to the presence of entrepreneurial role models ($\gamma_4 = 0.0138$). However, the cross difference between rurality and role models indicates that among rural individuals, the positive effect of role models over the probability of entrepreneurship is 0.83 percentage points weaker, relative to the effect of role models over the probability of entrepreneurship among urban individuals. The triple interaction term is negative and statistically significant ($\gamma_{234} = -0.0158$). This means that the positive effect of role model over the probability of youths to engage in entrepreneurship is 1.58 percentage points weaker for those residing in rural areas, compared to the probability shown by urban youths.² These results confirm our hypothesis **H3b** that states that the positive influence of role models over the entrepreneurial activity of rural youths is lower than for their urban counterparts.

Finally, specification four shows the findings for the triple interaction term that considers the differential effect of the presence of social fear to failure over the probability of youths to become entrepreneur in rural and urban areas. Empirical findings again confirm that among individuals who perceive a social fear of failure the probability to become entrepreneur falls by 0.93 percentage points, relative to the probability of individuals who do not perceive this fear of failure ($\gamma_4 = -0.0093$). Controlling for territorial and aging heterogeneity, results for the third difference indicate that Spanish youths are not affected by their fear of failure any differently relative to the rest of the population, regardless of the place of residence (rural or urban area). Consequently, hypothesis **H4b** stating that the negative impact from the perception of fear of failure over the entrepreneurial activities of rural youths is greater than for their urban counterparts is not confirmed.

5. Conclusions and implications

Business start-up has become an alternative way for young people to satisfy their work and professional development needs (Blanchflower and Andrew 1998). At the same time, authors like Bonnett and Furnham (1991), Honjo (2004), Levesque and Minniti (2006), among others, indicate that young adults are more likely to become entrepreneurs. That is, the probability of entrepreneurship decreases with respect to age (Katz 1994; Vaillant and Lafuente 2007; Driga *et al.* 2009).

Using a sample from the Global Entrepreneurship Monitor's 2009 Spanish Adult Population Survey that includes 24,695 observations, of which 4,092 under the age of 30, a logit model was performed to test whether there is a differentiated impact of role models and the social stigma of failure on the entrepreneurial process of rural youths.

Based on the sample analysed it is found that the likelihood of being entrepreneurially active is significantly greater in the case of young adults as compared to the rest of the Spanish adult population. The above can partly be explained through an analysis of the socio-cultural variables applied to this study. On the one hand, it can be stated that the positive effect of role models on the likelihood of becoming an entrepreneur is greater among young Spanish individuals. On the other hand, the negative effect of the social stigma of failure on the likelihood of creating a business is lower among such young individuals.

From a territorial perspective, the urban youths tend to be more entrepreneurial than those that live in rural areas. And although the negative impact over entrepreneurial activity of the social stigma of failure is the same across rural and urban youths, the

impact of role models is significantly different among young people that live in rural and urban areas. More precisely, whereas rural youths less influenced by the positive impact of role models.

The implications from these results come from the fact that entrepreneurship is increasingly being used in Spain as an alternative form of work and professional development for young individuals. From an academic perspective, though it has been shown that certain factors of the environment have an influence on the entrepreneurial process, this study demonstrates that some of these factors, such as entrepreneurial role models and the social stigma of failure, influence in distinct ways depending on people's life cycles and the territories where they live. Therefore, the usual assumption of homogeneity in the influence of these factors across the population should be revised in future studies.

With respect to the generators of public policies, the implications arising from this research are related with the need for specifically designed policy and programmes that promote entrepreneurship amongst rural youths. Although rural youths are found to come in contact with entrepreneurial role models and many have entrepreneurs among their close social circles, they are relatively less stimulated than urban youths by these entrepreneurial examples to become entrepreneurs themselves. The exact reasons for this go beyond the scope of this study but recent analysis from the Global Entrepreneurship Monitor in Catalonia and Spain (Vaillant *et al.* 2011; Coduras *et al.* 2012) suggest that there may be socio-psychological factors behind these findings. Rural youths are socially expected to move to the city to further their studies and careers. The social perception in many rural communities is that professional and

personal success for young adults is determined upon whether they have managed to move and establish themselves within a metropolitan area. The reverse of that same coin would mean that youths who stay behind and become entrepreneurs are socially judged as less successful. A similar observation has been made by the OECD in rural areas of Sweden which was limiting the generational continuity of Smaland's strong entrepreneurial tradition (OECD 2012).

Despite having more access to entrepreneurial examples, rural youths were found to be ineffectively absorbing the entrepreneurial stimulus produced by roles models. It is likely that youths living in rural areas are not identifying with the rural entrepreneurs they know because they have been brought up to value and desire an urban lifestyle (Meccheria and Pelloni 2006; Akgün *et al.* 2010). This would mean that in order to reach greater rates of entrepreneurial activity amongst rural youths, policy must address and work to mould the value system of the community in general, and not exclusively that of young adults. Before youths can be driven to become entrepreneurs; parents, friends, educators and other key persons of influence must first believe that a local career, and one as an entrepreneur, is a profession of status and indicative of personal as well as social success.

Once this is achieved, according to Schroeder *et al.* (2010), there is a need to create a strategy in rural territories that is focused on three fundamental points: 1) commitment, 2) equipment and 3) support. In relation to the first point, commitment should mean that from a very early age young people are involved in, are responsible for and lead real processes to foster the socio-economic development of the communities they live in. In other words, that from a young age, they must feel part of the community and believe

that their contributions are an essential part of improving it. By equipment, Schroeder *et al.* (2010) refer to greater investments in and improvements to education, both in terms of business attitudes and aptitudes among young rural people and from an early age, the objective being to motivate them to have the self-confidence required to create a business and for them to identify failure not as a punishment but as part of the learning process. Support is the third point, it refers to everything young rural individuals need to construct their ideas in relation to the needs of their communities, transforming them into business opportunities, materialising them in the form of a real action plan, executing said plan, and providing facilities for them to access networks of contacts and venture capital; but most of all, young people need adult mentors to teach them and help them to achieve their objectives, and also for these mentors to serve as role models to encourage young individuals to be entrepreneurs (Schroeder *et al.* 2010).

Similarly, it is very important that rural areas can offer a greater range of leisure activities, services and training opportunities to improve the quality of life of young individuals. In this way, it is easier for a community to be perceived as attractive, which not only helps to maintain part of the existing population of rural youth but is also a tool to (re)attract young residents to these territories (Bryden and Hart 2005; Akgün *et al.* 2010). For many of these latter cases, entrepreneurship can often be used as a way to establish oneself or as an alternative career option for an accompanying spouse, making it easier to establish residence in a rural area.

Finally, this research opens new lines of study. A greater number of socio-cultural factors could be added into the analysis as well as a replication of the study in other

territorial contexts, both in developed and developing economies. Finally, a longitudinal analysis could provide even more rigour to the findings presented in this study.

Endnotes

¹ To further corroborate this intuition we also ran separated regressions for the rural and urban sub-samples. Results, available on request, are consistent with our view confirming that youths are more likely to engage in entrepreneurship but only in urban areas. However, the analysis based on the full sample is preferred as it gives a more comprehensive image of the effect that the different sources of heterogeneity have over entrepreneurial activities.

² It should be kept in mind that the results of the third difference can be interpreted in different ways. However, the paper has adopted an interpretation for this marginal effect based on the results of the cross differences.

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List of tables

Table 1. Descriptive statistics for the selected variables

	Full sample			Rural sample			Urban sample		
	Young	Not-young	Overall	Young	Not-young	Overall	Young	Not-young	Overall
Nascent entrepreneurial activity	0.0401 *** (0.1962)	0.0295 (0.1691)	0.0312 (0.1739)	0.0370 * (0.1887)	0.0280 (0.1651)	0.0295 (0.1693)	0.0416 *** (0.1997)	0.0301 (0.1710)	0.0320 (0.1761)
Rurality	0.3240 (0.4681)	0.3220 (0.4673)	0.3223 (0.4674)	-----	-----	-----	-----	-----	-----
Gender (1 for male)	0.5445 *** (0.4981)	0.4709 (0.4992)	0.4831 (0.4997)	0.5083 *** (0.5001)	0.4516 (0.4977)	0.4611 (0.4985)	0.5618 *** (0.4963)	0.4801 (0.4996)	0.4936 (0.5000)
Age (years)	23.5943 *** (3.5300)	47.1760 (9.6598)	43.2685 (12.5218)	23.5136 *** (3.5541)	46.9696 (9.5661)	43.0622 (12.4402)	23.6330 *** (3.5183)	47.2741 (9.7028)	43.3667 (12.5595)
Primary studies	0.2974 *** (0.4572)	0.4385 (0.4962)	0.4151 (0.4928)	0.3439 *** (0.4752)	0.5332 (0.4989)	0.5016 (0.5000)	0.2751 *** (0.4467)	0.3935 (0.4885)	0.3739 (0.4839)
Secondary studies	0.2422 *** (0.4285)	0.1414 (0.3485)	0.1581 (0.3649)	0.2323 *** (0.4224)	0.1369 (0.3437)	0.1528 (0.3598)	0.2469 *** (0.4313)	0.1436 (0.3507)	0.1607 (0.3672)
Post secondary studies	0.4604 *** (0.4985)	0.4201 (0.4936)	0.4268 (0.4946)	0.4238 *** (0.4944)	0.3300 (0.4702)	0.3456 (0.4756)	0.4779 (0.4996)	0.4629 (0.4986)	0.4654 (0.4988)
Self-confidence in entrepreneurial skills	0.4404 ** (0.4965)	0.4577 (0.4982)	0.4548 (0.4980)	0.4585 (0.4985)	0.4507 (0.4976)	0.4520 (0.4977)	0.4317 *** (0.4954)	0.4610 (0.4985)	0.4562 (0.4981)
Role-Model	0.3954 *** (0.4890)	0.2720 (0.4450)	0.2924 (0.4549)	0.4163 *** (0.4931)	0.2929 (0.4551)	0.3134 (0.4639)	0.3854 *** (0.4868)	0.2620 (0.4397)	0.2824 (0.4502)
Social fear of entrepreneurial failure	0.5203 * (0.4996)	0.5362 (0.4987)	0.5336 (0.4989)	0.5611 (0.4964)	0.5561 (0.4969)	0.5569 (0.4968)	0.5007 ** (0.5001)	0.5268 (0.4993)	0.5225 (0.4995)
Observations	4,092	20,603	24,695	1,326	6,634	7,960	2,766	13,969	16,735

Standard deviation is presented in brackets. *, **, *** indicates significance at the 10%, 5%, and 1% level, respectively (Kruskal-Wallis test).

Table 2. Logit estimates: Change in the probability to be involved in nascent entrepreneurship between youths and non-youths

	(1)	(2)	(3)	(4)
Gender (male)	0.0026 ***	0.0026 ***	0.0026 ***	0.0026 ***
Primary studies	-0.0032 **	-0.0032 **	-0.0031 **	-0.0032 **
Secondary studies	-0.0011	-0.0012	-0.0011	-0.0012
Self-confidence	0.0414 ***	0.0398 ***	0.0411 ***	0.0398 ***
Young (less than 30 years old)	0.0031 **	0.0034 **	0.0030 *	0.0031 **
Rural BOE	-0.0008	-0.0005	0.0012	-0.0003
Rural × Young		-0.0029	0.0035	-0.0010
Role-Model	0.0138 ***	0.0121 ***	0.0138 ***	0.0121 ***
Role-Model × Rural			-0.0083 ***	
Role-Model × Young			0.0019	
Role-Model × Rural × Young			-0.0158 **	
Fear to fail	-0.0093 ***	-0.0092 ***	-0.0093 ***	-0.0093 ***
Fear to fail × Rural				0.0025
Fear to fail × Young				-0.0016
Fear to fail × Rural × Young				0.0034
Pseudo R2	0.1578	0.1578	0.1599	0.1580
Log likelihood	-2,890.23	-2,890.15	-2,882.93	-2,889.56
LR (chi2)	640.95 ***	641.16 ***	651.33 ***	646.67 ***
Correctly predicted (entrepreneurially active)	0.8366	0.8366	0.8314	0.8262
Correctly predicted (non-entrepreneurially active)	0.6632	0.6632	0.6757	0.6756
Correctly predicted (full sample)	0.6686	0.6686	0.6805	0.6803
Observations	24,695	24,695	24,695	24,695

The marginal effect represents the change in the probability as a result of a change in the independent variable. Following equations (1) and (2), the marginal effect of the interaction term for changes in two

variables x_2, x_3 is estimated by $\gamma_{x_2, x_3} = \frac{\Delta^2 F(X, \beta)}{\Delta x_2 \Delta x_3}$, whereas for the triple interaction term the

marginal effect emerges from $\gamma_{x_2, x_3, x_4} = \frac{\Delta^3 F(X, \delta)}{\Delta x_2 \Delta x_3 \Delta x_4}$. *, **, *** indicates significance at the 0.10, 0.05 and 0.01 levels, respectively.

Appendix

Table A1. Correlation matrix

	1	2	3	4	5	6	7	8	9
1. Nascent entrepreneurial activity	1								
2. Primary studies	-0.0563***	1							
3. Secondary studies	0.0020	-0.3651***	1						
4. Post secondary studies	0.0546***	-0.7269***	-0.3739***	1					
5. Self-confidence in entrepreneurial skills	0.1694***	-0.1758***	0.0105	0.1675***	1				
6. Young (less than 30 years)	0.0227***	-0.1064***	0.1027***	0.0303***	-0.0129**	1			
7. Rural	-0.0067	0.1211***	-0.0101	-0.1132***	-0.0039	0.0016	1		
8. Role-Model	0.1226***	-0.1220***	0.0115*	0.1131***	0.2145***	0.1009***	0.0319***	1	
9. Social fear of entrepreneurial failure	-0.0805***	0.0552***	-0.0102	-0.0475***	-0.1151***	-0.0119*	0.0322***	-0.0280***	1

*, **, *** indicates significance at the 0.10, 0.05 and 0.01 levels, respectively.

Table A2. Logit estimates: The relation between social traits and nascent entrepreneurship between youths and non-youths

	(1)	(2)	(3)	(4)
Gender (male)	0.2081 *** (0.0767)	0.2079 *** (0.0767)	0.2099 *** (0.0768)	0.2086 *** (0.0768)
Primary studies	-0.2613 *** (0.0892)	-0.2625 *** (0.0893)	-0.2602 *** (0.0895)	-0.2612 *** (0.0894)
Secondary studies	-0.0955 (0.1062)	-0.0963 (0.1063)	-0.0903 (0.1063)	-0.0964 (0.1062)
Self-confidence	2.4266 *** (0.1388)	2.4270 *** (0.1388)	2.4268 *** (0.1389)	2.4276 *** (0.1387)
Young (less than 30 years old)	0.2297 ** (0.0935)	0.2544 ** (0.1108)	0.0977 (0.2055)	0.2546 * (0.1316)
Rural BOE	-0.0615 (0.0827)	-0.0446 (0.0926)	0.1668 (0.1369)	-0.0905 (0.1130)
Rural × Young		-0.0802 (0.2028)	0.4477 (0.3148)	-0.1421 (0.2561)
Role-Model	0.9003 *** (0.0781)	0.8998 *** (0.0781)	1.0300 *** (0.1038)	0.8995 *** (0.0781)
Role-Model × Rural			-0.3738 ** (0.1837)	
Role-Model × Young			0.1988 (0.2453)	
Role-Model × Rural × Young			-0.8087 ** (0.4145)	
Fear to fail	-0.7214 *** (0.0802)	-0.7206 *** (0.0802)	-0.7193 *** (0.0802)	-0.7747 *** (0.1097)
Fear to fail × Rural				0.1404 (0.1948)
Fear to fail × Young				-0.0033 (0.2424)
Fear to fail × Rural × Young				0.1472 (0.4223)
Intercept	-5.3418 *** (0.1516)	-5.3468 *** (0.1520)	-5.4230 *** (0.1597)	-5.3309 *** (0.1533)
Observations	24,695	24,695	24,695	24,695

Robust standard errors are presented in brackets. *, **, *** indicates significance at the 0.10, 0.05 and 0.01 levels, respectively.