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HOW ENTREPRENEURIAALLY INFLUENTIAL SOCIAL TRAITS AFFECT BUSINESS CREATION AMONGST RURAL IMMIGRANTS: Evidence from Spain

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How entrepreneurially influential social traits and the concentration of immigrants affect business creation among rural immigrants

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Abstract

Immigrants have mainly been studied as part of the wage-earning workforce. However, they can become entrepreneurs. There is evidence in the literature that immigrants can be relatively more entrepreneurial than local inhabitants. Previous studies indicate that immigrants do not have any greater entrepreneurial capacity in rural areas, but local inhabitants do. The objective of this study is to determine the impact of rurality and the geographical concentration of immigrants on the entrepreneurship of foreigners. The paper also studies the influence over immigrant entrepreneurial activity of socio-institutional factors such as role models, the perception of social fear of failure and the perception that becoming an entrepreneur increases social status. To conduct this study, a logit model adjusted for rare events was applied using the GEM survey (Global Entrepreneur Monitor) for Spain for the year 2007. The results indicate that the concentration of immigrants plays a determinant role in explaining the impact of rurality and socio-institutional factors on foreign entrepreneurial activity.

Key words: Immigrants, Entrepreneurship, Rural areas, Concentration of immigrants.

JEL Classification: M13, O18

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1. Problem Statement

At present, for “policy makers” in OECD countries, the maintenance and generation of new businesses is a fundamental concern (UNCTAD 2005). This is based on the fact that economic growth is linked to entrepreneurship (OECD 2003).

There are studies and references to the topic of entrepreneurial activity that indicate that foreign immigrants show initiative, are able to become entrepreneurs and, most of all, *proportionally* generate more businesses (or are self-employed more) than the local inhabitants of a country (among others, Constant and Zimmermann 2006, Kalantaris and Bika 2006, Levie 2007, Miller 2007, Coduras 2008). In addition to this, foreigners are increasingly seen as a possible solution of economically deprived rural areas (OECD 2008). It could therefore be said that foreigners are agents that directly revitalize and participate in the economic growth of a country.

The above is also confirmed in Spain. De la Vega et al. (2008), using data from the Global Entrepreneurship Monitor (GEM), indicate that for the year 2007, 7.2% of Spaniards (aged between 18 and 64 years) were new entrepreneurs, as opposed to 11.5% of immigrants from European community countries, and 13% of immigrants from non-community countries.

Several studies address entrepreneurship and the elements that influence an individual to become an entrepreneur. Rurality is one of these factors that have an impact on the probability of individual entrepreneurship. According to Mancilla (2009), for the case of Spain, living in a rural area has a positive impact on an individual's probability of entrepreneurship; however, this statement is only true for local inhabitants (Spaniards), as the fact that an immigrant lives in a rural area does not influence their probability of creating a business. This leads us to generate the following questions for our study: what factors influence foreigners to become entrepreneurs?, and what factors influence foreigners that live in rural areas to become entrepreneurs?

In the case of foreigners, one of the factors that the literature indicates as a cause for the creation of businesses by immigrants is the geographic concentration of foreigners in a certain area (among others, Aldrich and Waldinger 1990, Solé and Parella 2005, Arjona and Checa 2006, Solé et al. 2007, Volery 2007, Bruder and Rähke-Döppner 2008). Borjas (1987) indicates more emphatically that the greater the number of foreigners, the greater the probability of these individuals being self employed. However, it is not enough to merely consider the concentration of immigrants to explain their entrepreneurship (Volery 2007).

The concentration of immigrants and rurality are geographic conditions external to the person, which brings us to specify our research on those socio-institutional factors that may stimulate or constrain entrepreneurship. There are different approaches that can be used for the study of individual entrepreneurship. One of these is the socio-cultural and institutional focus, which indicates that factors external to a person influence their decision to create a business.

For some years, several authors have worked with a theoretical framework based on this approach, which has been shown to be highly appropriate for the study of entrepreneurship and small and medium businesses (among others, Granovetter 1985, North 1990, Gnyawali and Fogel 1994, Maillat 1996, Urbano and Veciana 2001; Uhlaner and Thurik 2004). Studies like those by Malach-Pines et al. (2005), Vaillant and Lafuente (2007), Lafuente et.al (2007), Driga et.al (2009) use socio-institutional variables, such as contact with or knowledge of successful examples of entrepreneurship (hereinafter *role models*), the *perception of social fear of failure* and *the perception that being an entrepreneur increases social status*, as measures for explaining individual entrepreneurial activity.

Therefore, the objective of this study is mainly to determine the influence of rurality on the probability of foreign individuals being entrepreneurs. In addition, influence over the entrepreneurial activity of immigrants of the concentration of immigrants, the presence of role models (presence of successful examples of entrepreneurship), the perception of the social fear of failure, and the perception that being an entrepreneur¹ increases social status will be analysed.

Attaining the objective of this research will help to gain a better understanding of the entrepreneurial behaviour of immigrants. Finding answers may also be useful for the generation of policies to stimulate this group better in their entrepreneurial activity and, therefore, foster economic growth and good integration in the societies in which foreigners operate, both in urban areas and especially in rural areas.

This is especially relevant in Spain because the immigration process in this country has been

¹ Section 3.2 provides a detailed definition of entrepreneur that will be used in this study. In short, these are individuals that have been active as new entrepreneurs for up to 48 months.

extraordinarily relevant. According to statistical data from the Ministry of Employment and Immigration (Ministerio de Trabajo e Inmigración 2008), Spain went from having 719,647 foreigners with valid registration certificates or residence cards in 1998 to 3,979,014 in 2007, which means that this group grew by 552.91% between these years. Spain, from the Second World War to the period prior to this current phenomenon of immigration, was a territory with a net result of emigration, but like Greece, Italy and Portugal, it has now become a country that receives immigrants (Zimmermann 2005).

The importance of studying immigrants in rural areas is related with the fact that these areas of Europe (and Spain), in the 20th century, have experienced processes that have positively and negatively influenced their development. One of the most especially relevant of these processes is rural depopulation, which has been endemic since the mid 19th century (Council of Europe 1980, cited by Stockdale 2006). Together with this, in most of the world and also in Europe, the distribution of the population in rural and urban territories is not proportional. This is understood better when we observe the presently disproportionate relation in the 27 member states of the European Union, where 56% of the inhabitants live in rural areas while this area represents 91% of the whole associated territory (European Commission 2008).

Therefore, with mass emigration and the consequent depletion of local human capital, rural areas now have less capacity for growth, which has led to a series of negative effects such as the ageing of the population, loss of services, and the abandonment or lack of concern for the landscape and environment (Stockdale et al. 2000, OECD 2006). That is why foreign immigration is seen in some countries to be an alternative solution for rural depopulation, because it is widely recognised that immigrants can play a very important role in combating the ageing of the population and its consequences and hence economically revitalizing these

areas (Dahlsten 2004, OECD 2008, Stockdale 2006).

Roquer and Blay (2008) show for the case of Spain that the country suffered a loss of rural population between 1960 and 1975, although since the mid eighties, the trend in some rural areas has been reversed (Camarero 1993). Roquer and Blay (2008) also indicate that the immigrant population in Spain tripled between 2001 and 2006, and the same phenomenon occurred in rural areas over these years. This could be seen as an opportunity to encourage immigrants towards entrepreneurial activity in rural areas.

This document is structured as follows. Section 2 contains the theoretical framework. The methodology is explained in section 3. Section 4 deals with the results. Finally, the conclusions and implications can be found in section 5.

2. Theoretical Framework and Hypothesis

2.1 The entrepreneurial behaviour of foreign immigrants

According to Levie (2007), in certain European countries, foreign immigration is represented as a relevant economic problem. This has led one of the main topics of discussion in political debates to be the possible effects that immigration might generate on the local population of a country. The concerns (and studies and research) are especially focused on the effects on the labour market, the welfare system, social care and the distribution of wealth (Dustmann and Glitz 2005).

From the empirical point of view, some researchers report that the real effects on salaries and employment rates of the native residents are not altogether clear, for there is evidence that indicates the existence of positive and negative effects. And though economic models predict

major negative effects, these are much smaller in practice (Brücker 2002; De Lima et al. 2005; Blanchflower et al. 2007).

With respect to foreign entrepreneurs, Solé and Parella (2005) indicate that studies dealing with employment and immigration have traditionally dealt with the “ethnic entrepreneur and the self-employment of immigrant collectives and ethnic minorities as if the phenomenon were an anomaly” (p.11).

However, there is evidence that indicates that foreign immigrants make a *disproportionately high* contribution to the creation of new businesses (among others, Hayter 1997, Kalantaridis and Bika 2006, Levie 2007, Miller 2007, Coduras 2008, Wadhwa 2008). Specifically, Hayter (1997), in his book, indicates that foreigners are an important resource for generating entrepreneurship in such countries as Israel, Canada and Australia; Levie (2007) claims that immigrants (both internal and external immigrants) have a greater propensity to establish new businesses than long-term residents in the United Kingdom; for rural England, the same is indicated by Kalantaridis and Bika (2006); Miller (2007) and Wadhwa (2008) do likewise for the United States; Coduras (2008) does so for Spain. Additionally, there are studies that highlight the increasing tendency for immigrants to be self employed (Hammarstedt 2006, Bruder and Rähke-Döppener 2008). Moreover, it is sometimes claimed that some immigrant collectives are well-known for their particular participation in the creation of businesses and are therefore commonly associated to entrepreneurial activity. These groups have been investigated from different angles, such as their behaviour in business relations and the types of businesses that they create (among others, Kao 1993, Bates 1997, Kalnins and Chung 2002, Tienda and Rajman 2004).

Caussa (2007) indicates that immigrants are actually entrepreneurial by definition, for by migrating, they are initiating an important life project that implies the assumption of certain risks.

The reason why most studies that address immigration focus on their participation within the labour market is probably based on the fact that most often immigrants are initially wage-earning employees and only after a time, once they have accumulated a certain amount of (tangible and intangible) capital in the place to which they emigrated, many then make the decision to set up their own business.

For example, Reynolds and White (1997) indicate that immigrants need at least six years to establish their businesses. Harrison et al. (2004) determine that 68% of the immigrants that set up high technology businesses had previously worked for more than 10 years in the United States. This fully agrees with the results of the GEM - Spain (Global Entrepreneurship Monitor 2008) report, according to which the average years of residence in the country before establishing a business in 2007 ranged from 7.73 years for immigrants from developing and non-European countries, and 21.77 years for immigrants from European Union countries.

2.2 The study of entrepreneurship

There have been several studies of the factors that lead individuals to set up a new business activity, and there have also been different focuses and theories to assist with the study of entrepreneurship. The article by Veciana in 1999 provides an excellent compilation of these. There are economic, psychological, socio-cultural/institutional, and managerial approaches. Kets de Vries (1996) provides a different classification for dealing with entrepreneurial

activity. The author mentions that entrepreneurship can be viewed anthropologically, sociologically, organizationally and also, obviously, economically.

However, in the specific case of foreigners, according to Volery (2007), these are especially influenced by external factors and the atmosphere in the host society. These are the factors that ultimately have an influence on an individual decision to become an entrepreneur. On the basis of this, we could mention several authors that have been working for many years using a theoretical framework based on a socio-cultural and institutional approach, which is especially appropriate for studying rural entrepreneurship and small and medium businesses (among others, North 1990, Chilosi 2001, Spencer and Gómez 2004, Veciana and Urbano 2008; Webb et al. 2009). The central and common idea of these is basically the belief that the decision to create a business, and therefore become an entrepreneur, is conditioned by factors that are external to an individual or that form part of their environment. In other words, socio-cultural and institutional factors are external elements to a person, but they influence them internally in their decisions, in this case, to become an entrepreneur or not.

Therefore, *institutions* can be formal, such as political regulations, economic regulations and contracts, and can also be informal, such as the codes of behaviour, attitudes, values and conventions of a certain society. In the case of foreigners, Mancilla et al. (2010) discovered that, as compared to the local residents, there was a differentiated impact of social standards and informal institutions on the creation of businesses by members of this collective.

North (1990) explains how institutions and the institutional framework influence the economic and social development of a territory, adding that institutions affect economic activity and the differences between the economies of different territories. Rural areas are

territories where informal institutions tend to positively influence the probability of individual entrepreneurship (Lafuente et al. 2007). Paniagua (2002) indicates that rural areas are sometimes considered to be a major niche for generating one's own employment, which is mainly explained by the importance of individual entrepreneurs in the agriculture sector.

Vaillant and Lafuente (2007), meanwhile, mention that in rural areas, there are more small businesses per inhabitant, because a rural municipality requires, regardless of the number of inhabitants, certain minimum services. This statement leads us to believe that, in a rural municipality, there is a greater probability of being, at least, a microentrepreneur. In Spain, living in a rural area has a positive impact on the probability of an individual's entrepreneurship; however this statement only holds true for local inhabitants (Spaniards), as the fact that an immigrant lives in a rural area does not influence their probability of creating a business (Mancilla 2009).

For the case of immigrants, the geographic concentration of foreign individuals in a certain area will encourage them to create businesses (Aldrich and Waldinger 1990, Solé and Parella 2005, Arjona and Checa 2006, Solé et al. 2007, Volery 2007). In other words, the greater the concentration of immigrants, the greater the probability of a foreigner being self-employed (Borjas 1987). Bruder and Rähke-Döppner (2008) also find evidence of the above in their study for Germany, where they find that the self-employment of foreigners was related with a high proportion of immigrants in the total population.

This would be explained, according to Solé et al. (2007), because in areas where there is a concentration of foreign individuals there is a series of social networks of immigrants that are exploited for the benefit of their employment. Thus, the concentration of foreigners,

especially if they belong to a specific national group, is perceived by immigrants to be a comparative advantage for offering assets and services for their own use (Borjas 1987).

The rurality and the concentration of immigrants as explanatory factors of entrepreneurship led us to establish the first group of hypotheses for this study. The first hypothesis is based on the effect of rurality on the entrepreneurship of foreigners. Hypothesis 2a deals with the impact of the concentration of immigrants on the individual probability of their entrepreneurship, and hypothesis 2b deals with the impact of the rural variable in an area with a high concentration of immigrants:

H1: The fact that an immigrant lives in a rural area increases their probability of becoming an entrepreneur.

H2 a: A greater concentration of immigrants increases the probability of a foreigner becoming an entrepreneur.

b: In rural areas, a greater concentration of immigrants increases the probability of a foreigner becoming an entrepreneur.

Some authors have proposed certain specific informal variables that can externally influence the entrepreneurial activity of an individual. Veciana (1980) and Shapero and Sokol (1982) mention the importance of positive examples (successful entrepreneurs) on the decisions made by other people to become entrepreneurs. Fornahl (2003) proposed, of the institutional factors that affect the creation of businesses, the role of positive examples of entrepreneurship (*role models*). Thus, the presence of successful entrepreneurs strongly influences the cognitive representation of economic agents and can affect their behaviour in becoming entrepreneurs (Krueger 1993).

Role models (positive examples of entrepreneurship) mainly have two effects. The first is that if entrepreneurs are successful, it can make it easier for opportunities to be detected by other people, so they therefore act as references for them. Secondly, the examples of entrepreneurs lead to a cognitive change in those people that are not presently the creators of businesses, whose perception of businesses change, and can also affect their self-confidence with regard to becoming the owners of their own business. In other words, the social image of the entrepreneur can have a consequent multiplying effect on the creation of new businesses (De Pablo and Uribe 2009).

Specifically, the positive examples of entrepreneurs (*role models*) increase the probability of other “agents” also becoming entrepreneurs (Speizer 1981).

On the basis of the influence that *role models* have on the probability of becoming an entrepreneur, a third group of hypotheses has been generated that considers role models, rurality and the concentration of immigrants:

H3 a: The presence of role models increases the probability of an immigrant becoming an entrepreneur.

b: The presence of role models increases the probability of an immigrant that lives in a rural area of becoming an entrepreneur.

c: The positive impact on foreigner entrepreneurship of the presence of role models is stronger in rural areas where there is a high concentration of immigrants.

Another dimension of informal institutions is the underlying perceptions of a community of individuals. According to Busenitz et al. (2000) we could consider the degree to which a territory perceives entrepreneurship and the acceptance or tolerance of the failure of a business activity as part of the local institutional framework. Vaillant and Lafuente (2007) showed that regions where there was a high stigma associated to individual failure could dissuade an individual from becoming an entrepreneur; this is the opposite to what would occur in regions where there were higher levels of acceptance of failure (and, therefore, less social stigma toward entrepreneurial failure). In similar fashion, Begley and Tan (2001) indicate that in some East Asian societies, the shame of failure negatively affects the viability and desire of people to create businesses, because they perceive there to be social penalties for failure in business. The Green Paper on Entrepreneurship by the European Commission (2003) characterizes Europe as being a society that especially stigmatizes business failure. The OCDE (2009) presented a similar message in reference to the rural areas of Spain.

In accordance with the potential influence of the *perception of the social fear of failure* on the probability of individual entrepreneurship, a fourth group of hypotheses was generated that also consider the concentration of immigrants and rurality:

H4 a: The perception of social fear of failure reduces the probability of a foreign immigrant becoming an entrepreneur.

b: The perception of social fear of failure reduces the probability of a foreign immigrant that lives in a rural area becoming an entrepreneur.

c: The negative impact on foreign entrepreneurship of the perception of social fear of failure is stronger in rural areas with a high concentration of immigrants.

According to Malach-Pines et al. (2005), when the figure of the entrepreneur is highly valued by a society (or seen to be a “cultural hero”), the people feel identified with the entrepreneur, and are therefore more likely to get involved in business activities themselves. Similarly, in countries where entrepreneurship is one of the highest social values, individuals that live in these “cultures” are more likely to be interested in setting up a business (Begley and Tan 2001). In other words, having the objective of becoming an entrepreneur, in keeping with the society’s positive appraisal of the same, would be perceived as an improvement in an individual’s social status.

Various authors indicate that the possible discrimination experienced by foreigners in the labour market make them (immigrants) become more determined (push factors) to generate their own self-employment (among others, Bates 1997, Clark and Drinkwater 2000, Constant and Zimmermann 2006). From the perspective of our study, immigrants would therefore be seeking, through entrepreneurship, to overcome the supposed obstacles of the labour market, in order to improve their social status. However, Shinnar and Young (2008) give us different evidence; the authors stated that given certain external conditions, that Hispanic immigrants in the United States were not only affected by push factors, but also by even stronger pull factors. In other words, immigrants do not necessarily feel forced to generate their self-employment, for there are also other conditions that provide them with an incentive to become entrepreneurs, such as the opportunity for greater social status and integration.

In the case of Spain, social status is also of importance to foreigners, whereby Solé et al. (2007) indicate that the creation of businesses by foreigners is effectively generating “upward mobility processes”. The same authors indicate that these entrepreneurs “separate themselves,

in terms of status and income, from the rest of the wage-earning immigrant workforce” (p. 133).

In accordance with the potential influence of perceiving that being an entrepreneur increases social status, the final group of hypotheses was generated, which also consider the concentration of immigrants and rurality:

H5 a: The perception that becoming an entrepreneur increases social status increases the probability of a foreign immigrant becoming an entrepreneur.

b: The perception that becoming an entrepreneur increases social status increases the probability of a foreign immigrant that lives in a rural area becoming an entrepreneur.

c: The positive impact on foreign entrepreneurship of the perception that becoming an entrepreneur increases social status is stronger in rural areas with a high concentration of immigrants.

2.3. Other factors that influence entrepreneurship

In the methodology section, the variables that will be used in this research are detailed. However, there is a need to identify some factors that influence and that can help to explain an individual's entrepreneurship, in order for these to be incorporated as control variables in our study.

One of the relevant variables that have been considered in different studies of entrepreneurship is an individual's *formal education*. It has been shown by different authors that educational attainment conditions people's attitudes towards setting up new businesses

(Krueger and Brazeal 1994). Therefore, individuals with low levels of educational attainment could see entrepreneurship to be a form of upward economic and social mobility (Donkels 1991). However, Krueger (1993) indicates that these people might have a limited vision of the existing business opportunities available to them. The same author says, on the other hand, that individuals with better educational attainment tend to have greater technical and administrative skills which open up more business alternatives. In other words, while Donkels would argue for the concept of the *need* for people with a low level of educational attainment to set up businesses, Krueger would argue for the concept of *opportunity* for people with higher levels of educational attainment.

The *gender* of an individual is also a factor that determines entrepreneurial activity. Delmar and Holmquist (2004) indicate that it is an important factor for establishing the different levels of propensity for individuals to become entrepreneurs. These authors also indicate that women commonly have less access to the resources and knowledge that would help them with their entrepreneurship.

Another factor that is also used to explain entrepreneurship is the *age* of an individual. In this regard, the decision to generate an economic activity is influenced by the different stages of an individual's life cycle (Singh and Verma 2001). It is thereby claimed that there is a gradual decline in the propensity of individuals to become entrepreneurs as they grow older. This decrease in propensity begins when an individual is approaching the age of forty (Katz 1994).

3. Data and Method

3.1. Data

The data that will be used in this research is taken from the survey applied to Spain of the

Global Entrepreneurship Monitor (GEM) for the year 2007.

The GEM is an annual entrepreneurship observatory carried-out in more than sixty countries for the study of the phenomenon of entrepreneurship. Reynolds et al. (2005) made a detailed description of the GEM project and its methodology.

The information generated by the GEM has been used in different studies that have made different uses of the data. For example, the following authors have studied certain determinants of entrepreneurship and factors that are an incentive for such behaviour: Thurik (2003), Sternberg and Litzemberger (2004), Wagner (2004), Wagner and Sternberg (2004), Wennekers et al. (2005), Lafuente et al. (2007), Vaillant and Lafuente (2007), Hessels et al. (2008a, 2008b), Driga. et al. (2009).

The GEM-Spain 2007 database consists of 27,880 observations. From these, a subsample of foreign individuals was extracted. For the purposes of this study, we eliminated any observations with missing values (don't know or don't answer) from our variables of interest. Therefore, the total subsample contains just 1,515 observations. These observations, in turn, are additionally grouped into three different subsamples to evaluate the different hypotheses separately. One of the subsamples only includes the foreign individuals that live in rural areas, and the other two subsamples are of those foreigners that live in provinces with low and with high concentrations of immigrants. These latter two subsamples are generated on the basis of the median observed of the concentration of immigrants in our sample. This latter factor, the concentration of immigrants, is the percentage of immigrants out of the total population of each of the 50 provinces of Spain plus the autonomous cities of Ceuta and Melilla. Therefore, the subsamples of foreigners that live in provinces that are over the median for the

concentration of immigrants are what we shall call *high concentration*, and the subsample of foreigners that live in provinces that are under the median for the concentration of immigrants are what we shall call *low concentration*.

The GEM survey – 2007 for Spain is representative. It is based on a universe of 26,179,888 resident inhabitants of Spain aged between 18 and 64 years, with a sample error of $\pm 0.58\%$ and confidence level of 95%.

3.2. Definition of the dependent variable: the *Entrepreneur*

The method used in this investigation is detailed in section 3.4, which will consist of a logit model adjusted for rare events and, after that, calculation of the first differences.

To determine entrepreneurship (the creation of economic activity), using the GEM database we considered the TEA (Total Early-Stage Entrepreneurial Activity) to be the variable that indicates whether a foreign individual is entrepreneurially active or not (value 1 if entrepreneurial, 0 if not). According to the explanation offered by Reynolds et al. (2005) this variable includes individuals that have been involved in entrepreneurial activity for less than 48 months. The variable also includes individuals that have made or are taking concrete steps to set up their own business. In other words, they have gone further than the stage of having an idea and concept of a business, but it is not yet operative.

3.3. Distinction between a foreigner that lives in a rural or urban area

For the purposes of this study, we adopt the criterion offered by Kayser (1990), which indicates that municipalities with less than 5,000 inhabitants are considered rural. This was the criterion used by the GEM for its annual survey (which we are using for the present research) to determine whether an individual resides in a rural area or an urban one.

The adopted criterion is just one of many quantitative criteria that are used by organizations to distinguish rural areas from urban ones in order to establish a point of distinction between such territories. For example, one of the most widely known criteria is the one used by the OECD (2006), which considers the density of the population to be what defines rural or urban, whereby if the density of a municipality's population is below 150 inhabitants per km², then it is considered rural. The OECD extends its typology to a regional level by indicating that a region is predominantly classified as being rural if more than 50% of its population lives in rural communities, and it is intermediate if between 15% and 50% of the population live in communities that are catalogued as being rural. Another statistical criterion based on the density of the population and that was frequently used by the European Commission in 1997 qualified rural areas as being those with a population density of less than 100 inhabitants per km². The OECD and European Commission criterion are generally used for geographical units beyond that of the municipality.

For the case of Spain, the Spanish National Statistical Institute (INE) establishes different thresholds that range from 2,000 to 10,000 inhabitants. There is also Law 45/2007 of December 13 on the sustainable development of the rural environment (Ministry of the Presidency 2007), which establishes definitions for rurality on different levels². Article 3, letter c) of said law establishes the same number of inhabitants that we proposed for this research to determine the category for the rurality of a municipality, and so this lends greater validity to the criterion we have adopted here. So, the results obtained and the conclusions

² Law 45/2007, of December 13 on the sustainable development of the rural environment (Ministerio de the Presidencia 2007), in article 3, defines: a) Rural environment: the geographic space formed by the aggregation of smaller municipalities or local entities defined by the competent authorities that have a population of less than 30,000 inhabitants and a density of less than 100 inhabitants per km². b) Rural area: area of application of the measures derived from the Sustainable Rural Development Programme as regulated by this Law, of county or subprovincial extension, delimited and qualified by the competent autonomous community. c) Rural municipality: that which has a resident population of less than 5,000 inhabitants and is integrated in a rural environment.

referring to what is rural in the present research are referring to municipalities with less than 5,000 inhabitants.

3.4. The explanatory variables

3.4.1 Control variables

Section 2.3 defined some variables that are used for the study of entrepreneurship. In this investigation, we have considered explanatory variables that have been commonly used in other research studies of entrepreneurial activity (see Johansson 2000, Uusitalo 2001, Douglas and Shepard 2002, Wagner 2004, Vaillant and Lafuente 2007, Driga et al. 2009).

Hence, some dichotomic (dummy) variables are used such as *gender* (with the value 1 for a man, 0 for a woman); two variables for the individual's training, *primary education* (with the value 1 for people with no education or that only completed primary education) and *secondary education* (with the value 1 for people that only reached and completed secondary education); and we also incorporated *age*, whose value will be expressed using the natural logarithm of years.

3.4.2 Variables of interest for confirming the hypotheses.

To evaluate the study hypotheses, we generated a set of dichotomic variables that are directly related to the socio-institutional variables, which were also explained in the theoretical framework, and which are *personally knowing the case of a person that has recently become an entrepreneur*, which shall hereinafter be called a *role model* (value 1 if knowing a person that has become an entrepreneur in the last two years, 0 if not), the perception of *social fear of failure* (value 1 in the case of perceiving social fear of failure) and the perception that becoming an entrepreneur increases *social status* (value 1 if perceiving social status for being an entrepreneur).

Also, as factors of interest, we incorporated the variable *rural* (value 1 if the individual resides in a rural area) and the variable *concentration of foreigners*, whose value is the percentage of foreign individuals in each of the 50 provinces of Spain, plus the autonomous cities of Ceuta and Melilla. This figure was calculated on the basis of the municipal census of January 1, 2007 conducted by the Spanish National Statistical Institute (INE – www.ine.es). The result obtained was assigned to each observation in accordance with the province of residence of an individual. As explained in section 3.1., on the basis of the median of this variable, the subsample of immigrants was subdivided into two subsamples. The first of these considers the foreigners that live in Spanish provinces that are below the median for the concentration of foreigners (low concentration of immigrants), and the other subsample considers the individuals that live in provinces that are above the median (high concentration of immigrants). Specifically, the median value of our sample is 11.89%.

3.5. Method

In order to evaluate the hypotheses proposed in the theoretical framework, we first have to think that an individual will become an entrepreneur if the total of the factors (variables) we consider in this research lead to a positive decision. So, becoming an entrepreneur can be understood to be a binary choice model. Therefore, to determine and identify the characteristics that affect the probability to become an entrepreneur one can perform a logistic regression model (Greene 2003). In our case, the probability to become an entrepreneur ($\Pr(Y_i = 1) = \hat{p}_i$) can be modelled as a function of the aforementioned set of explanatory variables (X_i), where \hat{p}_i is expressed as $\hat{p}_i = \frac{e^{X_i \hat{b}_j}}{1 + e^{X_i \hat{b}_j}}$, and parameters (\hat{b}_j) are estimated by maximum likelihood method.

At this point, it is important to consider that for the total sample, the proportion of individuals that are involved in entrepreneurial activities is only 7.73% (table 1). In the case of immigrants, this percentage stands at 13.6%. This has important implications as binary choice models are sensitive to the unconditional mean of the dependent variable, and when the observed proportion of events of interest in the sample is small and far from 0.50 ($p < 0.50$), the estimation bias between coefficients (\hat{b}) and the true parameter b amplifies. King and Zeng (2001a) show how the bias in parameter estimates is approximately $E(\hat{b}_j - b_j) = \frac{p - 0.50}{Np(1 - p)}$. This latter expression is particularly revealing, as it shows that when $p < 0.50$ the bias term is negative, meaning that coefficients from the logit model (\hat{b}) will be smaller, and consequently, the probability associated to the event of interest is underestimated. Also, it can be seen that the bias in \hat{b}_j decreases as the sample (N) becomes larger.

Given these considerations, it is clear that the application of traditional logit models in our sample yields to biased results due to the underestimation of the parameter estimates for those observations that are entrepreneurially active ($\Pr(Y_i = 1)$). As a result, we adopt the approach proposed by King and Zeng (2001a, 2001b) to compute approximately unbiased estimates in logit models by correcting for the presence of rare events. This procedure, labelled rare events logit model, is based on the standard logit model, but it introduces a correction term in the estimation of the coefficients (\hat{b}). This correction term (u_i) represents a sampling error linked to uncertainty in the estimation of \hat{b} , and its main implication is that

$\Pr(Y_i = 1) \gg \hat{p}_i + u_i$, where $u_i = (0.50 - \hat{p}_i)\hat{p}_i(1 - \hat{p}_i)XV(\hat{b}\phi)X\phi$ (King and Zeng, 2001a: 149). The term u_i is derived from Bayesian estimation and its direction is determined by $(0.50 - \hat{p}_i)$. Therefore, u_i enters into the logistic function providing a solution to the underestimation problem, and the resulting parameter estimates have a smaller mean square error, that is, they are better estimators of the probability of the event of interest. Thus, the use of the rare events logit approach enables us to carry out our analysis with the appropriate statistical corrections. Previous studies using this method can be found in Wagner (2004), Lafuente, Vaillant and Rialp (2007), Vaillant and Lafuente (2007), and Driga, Lafuente and Vaillant (2009).

To evaluate the influence of the socio-institutional variables selected (role model, perceiving social fear of failure and perceiving that being an entrepreneur increases social status), rurality, and the concentration of immigrants on the probability of becoming an entrepreneur, three models were generated. Specification one (equation 1) includes all the variables considered in the study for complete sample of foreign individuals:

To become

$$\begin{aligned} \text{an Entrepreneur}_i = & b_0 + b_1\text{Gender}_i + b_2 \ln(\text{Age})_i + b_3\text{Education}_i \\ & + b_4\text{Role-Model}_i + b_5\text{Fear of Failure}_i + b_6\text{Social Status}_i \\ & + b_7\text{Concentration of Immigrants}_i + b_8\text{Rural}_i + e_i \end{aligned} \quad [1]$$

where \hat{b}_0 is the constant term, \hat{b}_j corresponds to the vector of parameter to be estimated for the j th independent variable, and e_i is the logistically distributed error term for the i th observation.

The second specification was constructed to evaluate the influence that the variables of interest in this study (role model, social fear of failure, social status and the concentration of immigrants) are having on the probability of entrepreneurial activity only of immigrants that live in rural areas (equation 2):

To become

$$\begin{aligned} \text{an Entrepreneur}_i = & b_0 + b_1\text{Gender}_i + b_2 \ln(\text{Age})_i + b_3\text{Education}_i \\ & + b_4\text{Role-Model}_i + b_5\text{Fear of Failure}_i + b_6\text{Social Status}_i \\ & + b_7\text{Concentration of Immigrants}_i + e_i \end{aligned} \quad [2]$$

The third and final specification enables us to evaluate the effect generated by residing in rural areas and also the presence of our variables of interest (role models, perception of social fear of failure and perception of social status) on the probability of creating a business among the immigrants that live in areas with high and low concentrations of immigrants (equation 3). For the purposes of our work, and as indicated earlier, in this case the subsamples were constructed on the basis of the median concentration of immigrants, and our interest focused on the possible effect that rurality could have on each of these areas:

To become

$$\begin{aligned} \text{an Entrepreneur}_i = & b_0 + b_1\text{Gender}_i + b_2 \ln(\text{Age})_i + b_3\text{Education}_i \\ & + b_4\text{Role-Model}_i + b_5\text{Fear of Failure}_i + b_6\text{Social Status}_i \\ & + b_7\text{Rural}_i + e_i \end{aligned} \quad [3]$$

Parameters estimated from the rare events logit model only indicate the direction of the effect of each explanatory variable on the response probability. To obtain a better understanding of the results, we also calculate the first difference, which is the change in the probability as a function of a specific change in a variable holding the rest of variables constant at their means. For dummy variables, first differences for the selected variables are estimated

as $\hat{g}_x = \Pr(Y = 1|X = 1) - \Pr(Y = 1|X = 0)$.

Additional measures of goodness of fit like the Pseudo R2 cannot be directly obtained from the rare events logit. As a result, and following the approach by Greene (2003), we obtain the Pseudo R2 by regressing the untransformed binary dependent variable on the predicted values using the coefficients obtained from the rare events logit regression. Finally, we also calculate the proportion of correctly classified (predicted) observations. This is done for the full sample as well as for those individuals that are entrepreneurially active (nascent entrepreneurs) and those that are not (not-nascent entrepreneurs).

Finally, a second methodological instrument that will be used in this study is the calculation of the rate of entrepreneurial activity of foreigners that have role models, perceive the social fear of failure or perceive that being an entrepreneur increases social status; all of these both for rural and urban areas, and also for areas with low and high concentrations of immigrants. To determine whether there are significant differences in the rates of entrepreneurship between these areas, we shall make use of the Kruskal-Wallis test. Specifically, this contrast will enable us to confirm or reject our hypotheses 3c, 4c and 5c.

4. Results

Before dealing with the results of the regressions, we can make a brief descriptive analysis based on table 1, which details the average values of the variables used in the different subsamples of the study. The table shows the values for all foreigners (column 5), for foreigners that live in rural and urban areas (columns 1 and 2), and for foreigners that live in areas (Spanish provinces) of low and high concentrations of immigrants (columns 3 and 4).

Nearly all the variables, except age (discrete value between 18 and 64), possess dichotomic values, so the results in the table can be interpreted as the proportion that takes the value 1 for a certain variable. The concentration of immigrants variable is not dichotomic, but is also expressed as a proportion.

Table 1: Descriptive statistics of the selected variables for immigrants

	Rural	Urban	Low concentration of immigrants	High concentration of immigrants	Total Foreigners
Entrepreneurial (1 if positive)	0.1267 (0.3337)	0.1370 (0.3440)	0.1294 (0.3359)	0.1416 (0.3489)	0.1360 (0.3428)
Gender (1 if a man)	0.5533* (0.4988)	0.4593 (0.4985)	0.4637 (0.4990)	0.4729 (0.4996)	0.4686 (0.4992)
Age (in years between 18 and 64)	36.6667 (10.5345)	36.5992 (10.7713)	37.0185 (10.6301)	36.2488 (10.8369)	36.6059 (10.7447)
Primary education	0.2600 (0.4401)	0.2000 (0.4001)	0.2034 (0.4028)	0.2081 (0.4062)	0.2059 (0.4045)
Secondary education	0.3000* (0.4598)	0.3912 (0.4882)	0.3670 (0.4823)	0.3953 (0.4892)	0.3822 (0.4861)
Higher Studies	0.4400 (0.4980)	0.4088 (0.4918)	0.4296 (0.4954)	0.3966 (0.4895)	0.4119 (0.4923)
Lives in rural area (1 if positive)			0.1522*** (0.3595)	0.0530 (0.2241)	0.0990 (0.298)
Concentration (average) of immigrants	0.0869*** (0.0506)	0.1047 (0.0518)	0.0551*** (0.0285)	0.1443 (0.0253)	0.1029 (0.0519)
Has Role Model (1 if positive)	0.3867 (0.4886)	0.4081 (0.4917)	0.3898 (0.4880)	0.4200 (0.4939)	0.4059 (0.4912)
Perceives Social fear of failure (1 if positive)	0.4267 (0.4962)	0.4190 (0.4934)	0.4282 (0.4952)	0.4126 (0.4926)	0.4198 (0.4937)
Perceives that being an entrepreneur increases social status (1 if positive)	0.6200 (0.4870)	0.6110 (0.4877)	0.6074 (0.4887)	0.6158 (0.4867)	0.6119 (0.4875)
Number of observations	150	1365	703	812	1,515

The values in parenthesis represent the standard error. *, **, *** indicate the level of significance to 10%, 5% and 1% respectively. (Kruskal Wallis Test)

The table reveals that 9.9% (column 5) of the foreigners in Spain live in rural areas. However,

this percentage presents significant (statistical) differences between the group of foreigners that live in provinces with low and high concentrations of immigrants. So, the foreigners in areas with a low concentration of immigrants appear to have a comparatively greater preference for living in rural areas (15.22%) than the foreigners in areas with high concentrations (5.3%). In other words, in areas with low concentrations of immigrants, there is a greater proportion of rural immigrants.

According to the table, 41% of foreigners indicate the presence of role models (successful recent entrepreneurial examples), 42% indicate that they perceive social fear of failure, and 61% of foreigners in Spain perceive that becoming an entrepreneur increases social status. Unlike the rural and concentration of immigrants factors, the socio-institutional variables do not show (statistically) significant differences between rural and urban individuals, or between the individuals that live in provinces with low and high concentrations of immigrants.

With respect to the control variables of our study, only gender and secondary education suggest differences between rural and urban foreigners. In the case of gender, it is shown that there is a proportionally greater male presence in rural areas. This agrees with what was indicated by Camarero (2009), who indicates that foreigners were reinforcing the masculinisation of Spanish rural areas.

Table 2 presents the results for the three defined specifications. In other words, the results for the total subsample, the rural subsample, and the subsamples for low and high concentrations of foreigners. From the regressions (table 2), we can see how, of the control variables included in specification 1 (all immigrants), only age revealed no significance. Being male is

shown to have a positive impact on foreigners, especially on those that live in areas with high concentrations of immigrants. Studies like those by Delmar and Holmquist (2004), Driga et al. (2009), and Vaillant and Lafuente (2007) produced similar conclusions with respect to gender.

The formal education variable (expressed as primary and secondary education) has no influence on the subsamples for the total foreigners and rural foreigners (specifications 1 and 2, respectively). However, if we separate the foreigners in accordance with concentration (provinces with low and high concentrations of immigrants), these variables reveal significant effects, but with different signs between each groups. For the foreigners that live in provinces with low concentrations of immigrants, primary education is shown to have a positive impact (secondary education does not have any impact) on an individual's probability of entrepreneurship. In other words, Donkels' (1991) conclusions are confirmed, whereby it was indicated that individuals with low levels of education found that entrepreneurship was a path towards upward economic and social mobility; in other words, this is reflecting the concept of need. However, for the foreigners that live in provinces with a high concentration of immigrants, primary and secondary education both have an impact, but a negative one. Since the excluded variable in our regressions is higher education, this latter result means that immigrants with higher education are more likely to set up a new business. In other word, this result confirms the findings by Krueger (1993), who noted that individuals with low levels of education are not capable of taking advantage of the existing business opportunities.

The first result of our study indicates that the immigrants that live in rural areas are not influenced by their rurality (table 2, specification 1) which leads us to *reject hypothesis 1*. In other words, these areas do not apparently represent an environment that favours

entrepreneurial activity by foreigners (as already mentioned by Mancilla 2009). However, the result shows differences when analysed in accordance with the low and high concentrations of immigrants. This analysis will be made in the following paragraphs.

Table 2. Rare Events Logit Model: foreign entrepreneurs in rural areas and areas with low and high concentrations of immigrants

	Model 1: all Immigrants	Model 2: Rural Immigrants	Model 3.a: Provinces with a low concentration of Immigrants	Model 3.b: Provinces with a high concentration of Immigrants
Gender (1 for man)	0.4397 ^{***} (0.1554)	0.6126 (0.6031)	0.2114 (0.2349)	0.5725 ^{***} (0.2089)
Age (ln)	-0.1904 (0.2429)	-1.3637 (0.9079)	-0.4129 (0.3598)	-0.0829 (0.3267)
Primary education	-0.0282 (0.2078)	-0.3137 (0.7685)	0.6733 ^{**} (0.3089)	-0.5431 [*] (0.2906)
Secondary education	-0.1511 (0.1737)	0.0783 (0.6246)	0.1526 (0.2657)	-0.4254 [*] (0.2318)
Live in rural area (1 for positive case)	-0.0811 (0.2619)		-0.5960 [*] (0.3625)	0.6569 [*] (0.3812)
Concentration of immigrants (%)	0.6967 (1.5230)	11.4779 ^{**} (4.8486)		
Role model (1 for positive)	0.9134 ^{***} (0.1573)	1.0027 [*] (0.5967)	1.1589 ^{***} (0.2405)	0.7525 ^{***} (0.2075)
Perception of social fear of failure (1 for positive)	-0.4806 ^{***} (0.1612)	-0.7632 (0.5796)	-0.8626 ^{***} (0.2528)	-0.2254 (0.2132)
Perception that being an entrepreneur increases social status	0.1157 (0.1557)	1.3235 [*] (0.7487)	0.0091 (0.2329)	0.2260 (0.2119)
Intercept	-1.7240 [*] (0.9222)	0.4537 (3.1646)	-0.8915 (1.3219)	-1.9942 (1.2235)
Pseudo R2	0.0518	0.2115	0.0838	0.0562
Log likelihood	-571.1584	-44.9453	-248.1968	-312.6125
LR (chi2)	63.01 ^{***}	20.97 ^{***}	42.69 ^{***}	36.55 ^{***}
Correctly predicted (Entrepreneurs)	91.26%	89.47%	89.01%	90.43%
Correctly predicted (Non-entrepreneurs)	22.46%	59.54%	34.80%	25.68%
Correctly predicted (Full Sample)	31.82%	63.33%	41.82%	34.85%
Number of observations	1515	150	703	812

The values in parenthesis represent the standard error. *, **, *** indicate the level of significance to 10%, 5% and 1% respectively.

Table 3. Rare Events Logit Model: First differences

	Model 1: all foreigners	Model 2: Rural foreigners	Model 3.a: Provinces with a low concentration of immigrants	Model 3.b: Provinces with a high concentration of immigrants
Gender (1 for man)	0.0474 ***	0.0496	0.0204	0.0665 ***
Primary education	-0.0023	-0.0272	0.0770 **	-0.0543 *
Secondary education	-0.0172	0.0055	0.0160	-0.0463 *
Live in rural area	-0.0087	-	-0.0491 *	0.0873 *
Concentration of immigrants (%) – Change of percentile 10 to 25	0.0010	0.0065 **	-	-
Concentration of immigrants (%) - Change of percentile 25 to 50	0.0054	0.0418 **	-	-
Concentration of immigrants (%) - Change of percentile 50 to 75	0.0020	0.0307 **	-	-
Concentration of immigrants (%) - Change of percentile 75 to 90	0.0002	0.0373 **	-	-
Role model	0.1075 ***	0.1003 *	0.1278 ***	0.0881 ***
Perception of social fear of failure	-0.0503 ***	-0.0619	-0.0833 ***	-0.0241
Perception that being an entrepreneur increases social status	0.0123	0.0984 *	0.0009	0.0258

*, **, *** indicate that the first difference is significant to 10%, 5% and 1% respectively.

With respect to the variable for the concentration of immigrants, this factor shows no significance for the total sample of foreigners, which leads *hypothesis 2a* to be *rejected*. However, the foreigners that live in rural areas (table 2, specification 2) are positively influenced by the concentration of immigrants; on the basis of the previous result, we can *confirm* our *hypothesis 2b*. In other words, this result indicates, as shown by Borjas (1987), that the greater the level of the concentration of immigrants, the greater the probability of a foreigner in a rural area becoming an entrepreneur. Specifically, we can appreciate that the probability (see table 3, column 2) of becoming an entrepreneur increases in keeping with the

concentration of immigrants (the observed percentiles have been considered to show the changes in probability). For example, if a rural foreigner resides in a province with 4.39% of immigrants (percentile 25 of the concentration of immigrants) goes to live in a province with 11.89% of immigrants (percentile 50 of the concentration of immigrants) their probability of entrepreneurship would increase by 4.18%.

The previous result is reinforced by what is obtained from columns 3 and 4 of table 2 (and columns 3 and 4 of table 3). It is possible to appreciate that the *rural* factor has a negative impact on the probability of entrepreneurship of foreigners that live in low concentration areas (the probability of entrepreneurship falls by 4.9%), and a positive impact for foreigners that live in high concentration provinces (the probability of entrepreneurship increases by 8.7%). This latter case, where rurality is a positive factor, on the one hand confirms what was indicated by Paniagua (2002) who claimed that rural areas can be a good niche for generating self-employment, and on the other, would be in agreement with the results obtained by Mancilla (2009) for Spaniards. This leads to the indication that rurality always has an impact on the entrepreneurial activity of foreigners, although it can be positive or negative depending on the concentration of immigrants.

The socio-institutional variables selected for our study present diverse results. First, role models (the presence of successful examples of entrepreneurship) positively affect the probability of a foreigner creating their own business (a result that agrees with those obtained by Vaillant and Lafuente 2007, and Driga et al. 2009). Role models are shown to be an extremely relevant factor for immigrants, given that they are an incentive for entrepreneurial behaviour by foreigners wherever they live (see columns in table 2). On the basis of this result, we can *confirm hypotheses 3a and 3b*. Specifically, if a foreigner knows of a *Role*

Model, their probability of forming their own business increases by 10.75%, while if that person lives in a rural area, that probability increases in similar fashion by 10.03%. Though it does not form part of the hypothesis, it can be appreciated that both in provinces with low or high concentrations of immigrants, role models have a positive influence, as they increase the probability of an individual being an entrepreneur by 12.78% and 10.03% respectively.

However, *hypothesis 3c is rejected*. Table 4 shows that the rate of entrepreneurship with role models in the rural areas of high concentration, in terms of statistical significance, is no different from the rate of entrepreneurship with role models in the rural areas of low concentration. This means that in rural areas with a high concentration of immigrants, the positive impact of this factor is no stronger. This supports what was said in the previous paragraph, where it was indicated that role models are an extremely relevant factor, and that regardless of where foreigners are located, they are influenced by this variable.

Hypothesis 4a, on the basis of the results obtained, is *confirmed*, hence indicating that the perception of *social fear of failure* is a factor that reduces the probability of foreign entrepreneurship by 5.03%, therefore implying that this is a socio-institutional factor that limits new business initiatives. Results with respect to the negative effect of this socio-institutional factor have also been obtained by Landier (2005), and Vaillant and Lafuente (2007). *Hypothesis 4b is rejected* so this factor apparently does not have any influence on the foreigners that live in rural areas. However, our *hypothesis 4c is confirmed*, for we can see that the rate of entrepreneurship related to the fear of failure in rural areas of areas with high concentrations of immigrants, is greater than the rate of entrepreneurship related to the fear of failure in low concentration rural areas (20% and 4.55% respectively, see table 4). In other words, the negative impact of the perception of social fear of failure more intensely limits the

new business initiatives of foreigners that live in rural areas with a low concentration of immigrants. Along similar lines, table 2 shows that the negative effect of the perception of social fear of failure is only significant in the area with a low concentration of immigrants (the effect is 8.33%, see table 3), while among individuals that reside in areas with a high concentration of immigrants, this socio-institutional factor has no significant impact.

Table 4. Entrepreneurial activity of foreigners by level of concentration of immigrants and location

	Low Concentration		High Concentration	
Role Model	0.2080 (0.4066)		0.2023 (0.4023)	
	Rural 0.1628 (0.3735)	Urban 0.2165 (0.4127)	Rural 0.3333 (0.4880)	Urban 0.1963 (0.3978)
Perception of Social fear of failure	0.0831 (0.2764)		0.1194 (0.3247)	
	Rural 0.0455 ** (0.2107)	Urban 0.0895 (0.2860)	Rural 0.2000 (0.4104)	Urban 0.1143 (0.3187)
Perception that being an entrepreneur increases social status	0.1265 (0.3328)		0.1500 (0.3574)	
	Rural 0.1250 ** (0.3333)	Urban 0.1267 (0.3331)	Rural 0.3103 (0.4708)	Urban 0.1401 (0.3475)

The table shows the rate of entrepreneurship for each socio-cultural variable analysed. *, **, *** indicates that, on comparing areas with low and high concentrations of immigrants, the level of entrepreneurial activity shown in rural and urban areas is significantly different at 10%, 5% and 1%, respectively.

Finally, the last of our selected socio-institutional variables, the *perception that becoming an entrepreneur increases social status*, was shown to have a positive and significant impact on the probability of entrepreneurship only for foreigners that live in rural areas of Spain. On the basis of the above, we confirm hypothesis 5b; hypothesis 5a, which examined the impact of this socio-institutional factor on all foreigners, is rejected. Although Solé et al. (2007) indicate that the creation of businesses by foreigners makes them upwardly socially mobile in Spain, according to our results, the aforementioned is not a decisive factor for urban immigrants to

decide to form a business. The result is similar to the one shown by Malach-Pines et al. (2005), where it is indicated that the probability of being an entrepreneur is increased on perceiving an increase in social status, but in our study, this is only significant in rural areas. Specifically, rural foreigners' probability of entrepreneurship increases by 9.84%.

Hypothesis 5c is *confirmed*. Table 4 shows that the rural rate of entrepreneurship in areas with a high concentration of immigrants is significantly higher than the rural rate of entrepreneurship in low concentration zones (31.03% versus 12.50% in rural areas with a low concentration of immigrants). In other words, the positive effect of the perception that becoming an entrepreneur increases social status is stronger in zones where there is a high concentration of immigrants.

5. Conclusions

This study sought to determine the influence of rurality, the concentration of immigrants, and of socio-institutional variables, such as role models, the perception of the social fear of failure, and the perception that being an entrepreneur increases social status, on the probability of individual entrepreneurship of foreigners in Spain.

The previous objective was based, on the one hand, on the fact that there is a recognised relation between economic growth and entrepreneurship (OECD 2003), and on the other, by how the literature indicates that foreigners are more entrepreneurial than the local population (among others Hayter 1997, Kalantaridis and Bika 2006, Levie 2007, Miller 2007, Coduras 2008, Wadhwa 2008, Mancilla 2009). As well as these two factors, we find the fact that the immigration process being experienced in many countries of Europe has led to a relevant economic challenges (Levie 2007), which means it is highly relevant to look in depth at

knowledge of this phenomenon.

The main contributions of this study indicate that all of the factors investigated have some impact on the probability of entrepreneurial active of foreigners, although each of them do so in different ways depending on the area or zone being analysed.

In the case of rurality, Mancilla (2009) determined that foreigners are not influenced by such a factor, an identical result to the one we found in this study when the analysis was based on all foreigners. However, rurality does have an influence, but one which depends on the existing level of concentration of immigrants. That is because for foreigners that live in zones with high concentrations of immigrants, rurality is a factor that has a positive impact on their entrepreneurship, as it also is for the local Spanish inhabitants. But in provinces with a low concentration of immigrants, rurality negatively influences foreigners and therefore limits their entrepreneurial activity.

In contrast to this, the concentration of immigrants plays a positive and significant role in people becoming entrepreneurs, but only in rural areas. This also indicates that the support networks that exist for groups of foreigners (as shown by Solé et al. 2007) will be of more importance in rural areas than urban ones.

Of the socio-institutional factors that we selected, the presence of a role model is a powerful key variable that positively impacts foreigners, regardless of whether they are located in rural or urban areas, or in provinces with a high or low concentration of foreigners.

In the case of the perception of the social fear of failure, this variable has a negative impact on

the probability of entrepreneurship, although in rural areas of provinces with a high concentration of immigrants, this factor has no impact. Only in provinces with a low concentration of immigrants is the perception of the social fear of failure a limiter of individual entrepreneurship.

Perceiving that becoming an entrepreneur increases social status turned out to be positive and significant only in rural areas. In other words, although being a foreign entrepreneur generates social and economic mobility (Solé et al. 2007), it is only in rural areas that foreigners' individual decisions to become an entrepreneur are influenced by this factor. Although there is a need for other more in-depth and complementary studies, this result is probably reflecting how the concept of entrepreneur is valued differently in rural areas as compared to urban areas.

As just indicated, in provinces with a low concentration of immigrants, rurality has a negative impact. This is probably explained by the differentiated effects of two of the socio-institutional variables that we selected. On the one hand, we have the significantly greater negative effect of the perception of the fear of failure, in rural areas with a low concentration of immigrants. On the other hand, there is comparatively lower positive impact of the perception that being an entrepreneur increases social status among rural foreigners that live in zones with a low concentration of immigrants.

The findings are relevant, given that they contribute to three thematic areas: immigration, entrepreneurship and rural development.

These findings also contribute, in turn, to different fields. On the one hand, there are major

academic implications that, in the light of the results, confer relevance on the in-depth study of the role of foreigners as generators of business initiatives and contributors as such to the socio-economic growth and welfare of a territory. Researchers interested in the study of entrepreneurship can consider rurality and the concentration of immigrants to be factors that influence the entrepreneurship of foreigners. They can also consider that role models, the perception of the social fear of failure and the perception that becoming an entrepreneur increases social status to be explanatory elements, but also considering that these factors influence foreigners differently depending on whether they are in rural or urban areas, or zones with a high or low concentration of immigrants. Similarly, those with a concern for rural development should incorporate, as part of the potential profile of individuals living in rural areas, the entrepreneurial capacity they possess and how this is conditioned both by the concentration of immigrants and socio-institutional factors.

The results also generate implications for policy makers. It has been shown that foreigners are more entrepreneurial than the local inhabitants, but as this study has demonstrated, this group's entrepreneurial behaviour is negatively influenced by a low concentration of immigrants (and the rural areas of these). The perception of the fear of social failure is also a limiting factor. Therefore, we recommend the generation and intensification of policies that incorporate foreigners and provide incentives and support for the creation of businesses both in rural areas and in zones where there is a low proportion of foreigners, because the impact on the entrepreneurial activity of these territories could be higher. This would not only contribute to the economic development of these areas, but would also optimise the full entrepreneurial potential of foreigners in this development. It is also recommended that the figure of the entrepreneur should be considered in policies, for they have been shown to have a positive influence on rural foreigners. The positive influence of this factor should be

strengthened in rural areas, and increased in urban zones.

For agents related with the promotion of entrepreneurship, the implications follow on similar lines. It is not only suggested that foreigners should be a target population, given their entrepreneurial potential, but that the areas where they reside should be considered in order to focalise entrepreneurship promotion measures with greater precision. Therefore, in areas with a low concentration of foreigners, which are areas constraining their entrepreneurial activity, there is a need for greater support services for both the entrepreneurs and their business venture. Similarly, accepting the fact that foreigners create more businesses and accepting the fact that urban immigrants are not influenced by the perception of any greater social status due to becoming an entrepreneur, their entrepreneurial behaviour could be strongly reinforced by generating promotional programmes that highlight the social image of the entrepreneur in order for individuals to feel identified with them and hence aspire to becoming entrepreneurs themselves.

This study has generated certain questions that require more in-depth studies, in order to provide more detailed responses to some of the findings of this research. For example, there is the matter of why the perception of the social fear of failure only has an impact in areas with a low concentration of foreigners, or why the perception that being an entrepreneur increases social status only has a positive impact in rural areas.

Finally, it should be noted that this study uses transversal information and therefore lacks any longitudinal analysis of the results. This means that another of the targets for the future is such an analysis. Also, a comparison between countries in order to find out about the impact of the same variables would help us gain a better understanding of the behaviour of the factors

studied in this research.

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