Abstract

In this paper, we aim to analyse and compare the levels of entrepreneurial activity in rural areas with strong industrial and entrepreneurial history versus those that are not necessarily characterised by such a tradition. We specifically focus on the informal institutions and their influence over entrepreneurial activity levels. To attain this objective we undertake a logit model using a robust Spanish dataset from 2003. The main contribution of the study indicates that the difference between entrepreneurial activity levels in rural Catalonia and rural areas of the rest of Spain is in part explained by informal institutional factors, where the presence of entrepreneurial Role-Models is a prominent explanatory factor favouring entrepreneurial activity in rural areas with strong industrial tradition. Nevertheless, the results of the study suggest that the propensity towards entrepreneurial activity is conditioned by the evolution of the institutional framework.

Keywords: Rural entrepreneurship, Entrepreneurial activity, Informal institutional factors, Role-Model.
1. Problem Statement

The growing awareness over the last decades of the importance of new enterprises and small and medium sized enterprises (SMEs) within economic development has led many public administrations from all political ideologies and of all administrative levels to develop policy favouring and stimulating the creation of new enterprises.


Emphasis on entrepreneurship as a possible tool for rural development has recently been introduced in the EU and within many Organisation for Economic Cooperation and Development (OECD) countries\(^1\). In Europe, the diversification of the productive base of rural areas has become an objective of rural development policy (European Commission 1997a). There is increasing demand and interest in placing new business formation as a key element within the development and revitalisation process of lagging European areas (Rosell and Viladomiu 2001). Further knowledge of the distinctive factors affecting entrepreneurial activity in rural areas could help improve the effectiveness of these rural development efforts.

\(^1\) Measures addressing new business formation assistance in rural areas are found in the European Commission document (1997b) and implemented under the article 33 of the Council Regulation (EC) No 1257/1999 of 17 May 1999 on support for rural development from the European Agricultural Guidance and Guarantee Fund.
The specificity of rural (peripheral) entrepreneurship and its entrepreneurs has recently been analysed (Keeble and Tyler 1995, Anderson 2000, North et al. 2001, Dinis 2002, Macke 2002, Urbano et al. 2002, Viladomiu et al. 2004, Vaillant et al. 2004). A common conclusion of these studies is that rural entrepreneurship, because of its distinctiveness, is possibly disfavoured by common national support frameworks.

Finding the distinctive factors affecting entrepreneurial activity levels in rural areas is essential for the proper adaptation of entrepreneurship promotion and support measures and policy. Nevertheless, specific rural entrepreneurship policy is still scarce, and where it does exist, too often it is simply a replication of measures found in urban areas (Smallbone et al. 2002).

A different view is nevertheless beginning to surface that places doubt on the effectiveness of entrepreneurship as a tool for economic development in rural areas. The 2002 Global Entrepreneurship Monitor (GEM) report for the USA (Neck et al. 2003) concluded that entrepreneurship was mainly an urban phenomenon, where the highest entrepreneurial density is to be found. The authors of the report went on to conclude that ‘entrepreneurship in rural areas may not be the best mechanism for economic growth’ (Neck et al. 2003: 31).

A recent study (OECD 2003) of the influence of entrepreneurship over local economic development conducted by Alister Nolan for the OECD involving 30 OECD countries concluded that stimulating entrepreneurship can raise incomes and provide a cost-effective alternative to paying unemployment insurance in rural areas, but that the direct
employment effects in these areas are modest and often favour those who possess superior financial, human, and social assets at the expense of the most disfavoured. According to the study, there are many obstacles that hinder entrepreneurship in rural areas, influencing both the extent and form of entrepreneurial activity and its prospects for survival. The study concludes that informal institutional factors, such as, cultural barriers, the lack of role-models, and limited networks are some of the most important barriers that restrain rural entrepreneurship (OECD 2003).

Nevertheless, this view, which would tend to dilute the impact of entrepreneurship in rural areas, does not appear to be consistent with the experience of rural Catalonia. Contrary to the configurations found in the rest of Spain and most of Europe (Regidor 2000, Tödtling and Wanzenböck 2003, Wagner and Sternberg 2004), many parts of rural Catalonia benefits from better economic results than do urban areas of Catalonia. The average per capita income in most of rural Catalonia is higher than that found in urban areas. More importantly for the purpose of our study, in Catalonia, entrepreneurial activity levels in rural areas more than doubles those found in urban areas (11.44% and 4.28% of adult population, respectively). Entrepreneurial activity in rural Catalonia is also significantly greater than levels found in rural areas for the rest of Spain (3.43%).

Thus, the main objective of this research is to determine and compare the levels of entrepreneurial activity in rural Catalonia versus that of rural areas for the rest of Spain, with a special focus on the influence of the informal institutional framework of these areas. We also want to analyse the influence that certain informal institutional factors are having upon the superior entrepreneurial activity levels found in rural Catalonia.
The main contribution of the study indicates that there is a significant difference between entrepreneurial activity levels in rural Catalonia as compared to rural areas of the rest of Spain. We report that the distinctions in the case of rural Catalonia, which is characterised by a strong industrial tradition, is mainly due to the presence of informal institutional factors, remarking the influence of positive entrepreneurial examples (Role-Model effect) upon entrepreneurial activity.

The paper is organised as follows. Section 2 presents the theoretical framework and the literature review. Data and research methodology are introduced in section 3. A discussion of the results is offered in section 4 and; finally conclusions are displayed in section 5.

2. Theoretical Framework and Literature Review

2.1 Institutional approach to entrepreneurship research

A growing number of academics are demonstrating that a theoretical framework based on a socio-cultural and institutional approach may be more appropriate for the study of entrepreneurship and SMEs than conventional economic and sociological approaches (Granovetter 1985, North 1990, Gnyawali and Fogel 1994, Maillat 1996, Urbano and Veciana 2001, Aponte 2002, Uhlaner and Thurik 2004, etc). The main hard-core common to the theories falling under this approach is the basic belief that the decision to create a new enterprise, and therefore to become an entrepreneur, is conditioned by external or environmental factors. In other words, the institutional framework and its socio-cultural factors are what determine the levels of entrepreneurial activity in a specific time and place.
Examples of theories that adopt a socio-cultural or institutional approach have been compiled and described in Veciana (1999). In the mentioned article, the theories under this and the other main approaches used for the study of entrepreneurship are described in much greater length. We will therefore not venture into this task within this paper.

Of the theories within the socio-cultural or institutional approach, the Institutional Economic Theory, developed mainly by Douglass North (1990), is one of the most general, which encloses most of the specificities of the other theories falling under the same approach. Together with the theoretical amplitude that the institutional economic theory offers, the historical perspective and institutional embeddedness argument which it offers are especially ideal for the objective laid out for this study, and was therefore used as the theoretical backbone guiding our research.

Institutional economic theory develops a very wide concept of ‘institution’. North (1990: 3) proposes that ‘institutions are the rules of the game in a society, or more formally, institutions are the constraints that shape human interaction’. Institutions include any form of constraint that human beings devise to shape human interaction. Institutions can be either formal - such as political rules, economic rules and contracts - or informal - such as codes of conduct, attitudes, values, norms of behaviour, and conventions, or rather the culture of a determined society. North attempts to explain how institutions and institutional framework affect economic and social development. The main function of institutions in a society is to reduce uncertainty by establishing a stable structure for human interaction.
According to North (1995), formal institutions are subordinate to informal ones in the sense that they are the deliberate means used to structure the interactions of a society in line with the norms and cultural guidelines that make up its informal institutions. Policy making that attempts to change the formal institutions of society will therefore have little success if it does not first adjust the informal institutions in a compatible way. The difficulties rise from the fact that, whereas a governing body can influence the evolution of a society’s formal institutions in a rather direct way, informal institutions are much less tangible and usually fall outside the direct influence of public policy. They can be moulded, but tend to resist change and take time to evolve towards new social norms.

This institutional evolution is especially important for the purpose of this study since one of the main distinctions between rural Catalonia and rural areas of the rest of Spain lies in the industrial history and entrepreneurial tradition of rural Catalonia, shared by very few other rural areas of Spain. North (1981, 1990) explains using an institutional approach how there can exist ‘radically differential’ performance of economies over long periods of time. According to North (1990), the interactions between institutions and organisations (economic, political, or social) shape the direction of institutional change. Institutions determine the opportunities of society and organisations are created to take advantage of these opportunities. As the organisations evolve, they alter the institutions. The resultant path of institutional change, according to this author, can, on the one hand, lead to a stagnant situation where institutions come to serve the sole purpose and interests of maintaining existing organisations, or on the other hand, can lead to a ‘lock-in that comes from the symbiotic relationship between institutions and evolving organisations as a consequence of the incentive structure provided by those
institutions and the dynamic feedback process by which human beings perceive and react to changes in the opportunity set’ (North 1990: 7).

North followed-up his path dependency argument by describing the embedded character of informal institutions as a result of their cultural content. Pilon and DeBresson (2003) recently reinforced a similar argument in their study of innovative districts identifying local cultural ‘anchoring’ based on cultural similarities, cultural cohesiveness, and historical particularism and heritage making certain geographical areas more conducive to innovative entrepreneurial activity. Leaving the innovative character of entrepreneurship aside, the same argument holds within the theoretical framework established within the institutional economic theory.

Fornahl (2003) proposed that amongst the institutional factors influencing entrepreneurial activity, the role of positive regional entrepreneurial examples is especially important in a rural (regional) context. The presence of entrepreneurial role models, according to this author, strongly influences the cognitive representation of economic agents and strongly influences their behaviour through the different decisions needed to become an entrepreneur. The argument is that the ‘development and the related likelihood of discovering entrepreneurial opportunities and increasing the willingness to start a new firm is strongly influenced by positive examples, so-called role models, present in regions’ (Fornahl 2003: 50). These positive examples have two main effects, first, it may make it easier to discover and act upon entrepreneurial opportunities if other similar and successful business opportunities, identified by others, can serve as references. Second, entrepreneurial example leads to a (re-)allocation of cognitive attention to certain opportunities or business conceptions affecting the
direction of the active search, and perception, of opportunities as well as the confidence in ones own entrepreneurial possibilities. A positive example leads to an increase in the likelihood that other agents also become entrepreneurs. Thus, the higher the number of entrepreneurs, the higher the likelihood that other agents, within a socially tight context, will change their propensity towards an entrepreneurial career (Gibson, 2004). Once a critical mass is overcome, the local institutional framework evolves to include a new social cognitive perception that is more fertile for entrepreneurial activity. Regions therefore differ in their entrepreneurial propensity, according to Fornahl (2003), because of ‘small historical singularities’ that lead to a situation in which regions develop different common cognitive perceptions, influencing the diffusion of new positive examples (role models), consequently affecting the acceptance and alternative to self-employment available in the region.

An exhaustive literature review on the topic of institutional factors that condition new business formation can be found in Rutherford (2001) and Urbano (2003). Growing on these reviews, further literature concerning institutional factors surrounding the specific topic of business creation in rural areas was presented in Urbano et al. (2002).

There are very few empirical works analysing rural entrepreneurship that specifically adopts the institutional economic theory. Nevertheless, several studies researching rural entrepreneurship have included variables that can be considered institutional factors in their framework. On the one hand, studies developed by Chrisman et al. (1987), Anderson (2000), Lerner and Haber (2001), Dennis (2001), North et al. (2001) have considered, following different methodologies, institutional variables in order to analyse public sector support to entrepreneurship. As a general conclusion, these studies
highlight that public sector assistance, such as incubators and other entrepreneurship support measures, have a positive impact over small business creation, integration and survival. On the other hand, Birley (1985) and Johannisson et al. (2002) report a positive relationship between social networks and business creation.

Regarding research more directly related to rural entrepreneurial activity, Gladwin et al (1989), Dabson (2001), Pezzini (2001) find that enforcement of local institutions is important to promote rural entrepreneurship. Also, Tödtling and Wanzenböck (2003) conclude that more sophisticated support frameworks favour start up activity comparatively more in urban areas.

Concerning the Spanish experience, Urbano et al. (2002), and Diaz (2003) remark the importance of institutional frameworks upon entrepreneurship. However, Rosell and Viladomiu (2001), and Viladomiu et al. (2004) find that uniform support policies in rural and urban areas leads to a sub-optimal impact on business creation process in rural areas.

Most of the aforementioned empirical studies are concerned with formal institutional factors, and, with a few exceptions, most studies have adopted qualitative research methodologies or quantitative analyses based on small sample size observations.

2.2 Distinctiveness of Catalan institutional framework

The decision to concentrate our analysis and contrast the rural areas of the Spanish autonomous community of Catalonia against rural areas in the rest of Spain has been based on several indications that rural Catalonia has a particular institutional
framework, different from those found elsewhere in Spain. First, Catalonia has a distinct history that has placed it upon a different institutional evolutionary path than the rest of Spain. This distinctiveness is commonly recognised, but is about to become institutionalised within the (still on-going at the time of writing this paper) reforms to the Catalan Statutes of Autonomy and within the most probable and consequent adjustments to be made to the Spanish constitution. North and Thomas (1973) recognised that ‘history matters’ in economic growth, mainly because of the path dependence of institutions. The distinctive history of Catalonia, as compared to the rest of Spain, has set it upon its own particular institutional evolution, which may influence the propensity of Catalans towards entrepreneurial activity in different ways than what can be found in the rest of Spain.

Related to, and consequent of, Catalonia’s particular historical evolution is Catalonia’s proper cultural specificity. Apart from the clear cultural difference of rural Catalonia coming from the distinct Catalan language, commonly used by over 50% of the Catalan population, spoken by some 74% and understood by over 95% of Catalans, Catalonia is characterised by differential cultural traits (Busquet i Duran 2001). The value scale of Catalans differs from that found in the rest of Spain. The results of a recent study reported in Busquet i Duran (2001) determining the values considered as important to instil in children showed how the most important value for Catalans is independence, whereas, to the contrary, it is obedience in the rest of Spain. Other important values for Catalans are predisposition toward working hard, and a sense of economics and saving. Contrary to what is the case for Catalonia, religious values and faith stand out as important in the rest of Spain. The same study also reported differences in the religious, leisure and social practices of Catalans as compared to the rest of Spaniards. The
distinctive cultural heritage of Catalonia, as compared to the rest of Spain, translates to a
different informal institutional construct, which may influence the propensity of Catalans towards entrepreneurial activity in different ways than what can be found in the rest of Spain.

Finally, the entrepreneurial character and propensity of rural Catalonia clearly contrasts with that found in rural areas in the rest of Spain. According to the results of the GEM entrepreneurship observatory (2003), the proportion of the adult population of rural Catalonia involved in entrepreneurial activities in 2003 stood at 11.44%, more than three times superior than the proportion found in rural areas of the rest of Spain (3.43%). Whereas rural Catalonia is more entrepreneurial than its urban counterpart (4.28% of the adult population of urban Catalonia), rural areas in the rest of Spain have an entrepreneurial activity level that is inferior than that registered for urban areas (4.30%). An analysis of the most recent census results (IDESCAT, Catalan Statistics Office 2001) show that enterprise density is greater in rural areas of Catalonia than it is in urban areas (7.19 as compared to 6.75 enterprises per 100 inhabitants respectively). More importantly, when we analyse the recent evolution in the number of enterprises, we clearly see how rural areas have been more dynamic when it come to entrepreneurial activity than have been urban areas of Catalonia (growth over five years 1996-2001, 16.86% in rural Catalonia versus 10.96% in urban Catalonia).

3. Data and Methodology

3.1 Data selection

The data used to carry out this study come from the Catalan Global Entrepreneurship Monitor (GEM) for the year 2003. The GEM project began in 1998 as a joint initiative
of the London Business School and the Babson College to create an international entrepreneurship research network. Today, more than 40 different countries have taken part in the research initiative, making it a world reference for research into the entrepreneurship phenomenon and a highly valued source of information for professionals and policy makers in each of the participating countries.

The sample used for this study was built based on a multiple stage sampling method. The Kayser criterion (Kayser 1990) is used to identify rural and urban areas. This criterion is based on demographic figures and considers as rural those municipalities that have a population of less than 5000 inhabitants. First, a random selection of municipalities was collected according to population quotas. In a second stage, telephone numbers corresponding to the different municipalities were randomly obtained. Finally, persons between the ages of 18 and 65 (inclusively) were selected.

The original database used to reach the aim of this research contained 1243 observations from rural areas in Spain, including 292 (23.49%) and 951 (76.51%) from Catalonia and the rest of Spain, respectively. However, in the interest of following a rigorous methodology, only individuals for whom a complete dataset of the independent variables can be constructed are included. Thus, data availability limits the rural sample to 843 observations, 201 (23.84%) from Catalonia and 642 (76.16%) from the rest of Spain.

3.2 Determinant factors of entrepreneurial activity
Before going further we must define what is meant by entrepreneurial activity. The entrepreneurship concept has been used to describe many different things, from
business growth to innovation strategy. Nevertheless, the meaning used within this study will be the same as that most commonly convened within recent literature, i.e., entrepreneurship as the act of creating a new business.

As a result, the dependent variable used in this study as a measure of entrepreneurial activity is the main index resulting from the GEM project, the Total Entrepreneurial Activity index (TEA). This index assumes a value of one if an individual is either involved in “start-up” activities or has recently launched a business (over the last 42 months). Thus, the dependent variable used in the model reflects both the proportion of the adult population that is in the process of creating a new enterprise as well as those that have recently set-up their new business.

The rationale for the selection of the independent variable set follows. Firstly, to determine the entrepreneur’s profile we consider variables commonly found in many models trying to explain entrepreneurial activity (Uustitalo 2001, Douglas and Shepard 2002). Thus, the variables incorporated are the following: a dummy variable for gender, assuming a value of one if the individual is a man, zero otherwise; age, expressed in years, and; formal education, using dummy variables distinguishing people who finish secondary and those who did not, as well as people with university studies.

Furthermore, we consider the self-confidence in one’s own entrepreneurial skills as a dummy variable, assuming a value of one if the person makes a positive assessment of his/her entrepreneurial skills, and zero otherwise. Several studies have recently used this variable in substitution, or together with, formal business training. These studies have found that entrepreneurial self-confidence explains an important part of the decision to

In addition, a second set of three dummy variables associated with the informal institutional framework of an area have been added to support our hypothesis that the informal socio-cultural environment is an important stimuli, or obstacle, to business creation. The informal institutional variables used are: 1) the fear of entrepreneurial failure as an obstacle to business creation; 2) the presence of a Role-Model, who has created a new business over the past two years within one’s personal social circle; and finally, 3) the perception that entrepreneurship is socially valued and leads to greater social prestige.

The social stigma associated with business failure is an informal institutional factor that can act as an important obstacle to entrepreneurial activity (Simon et al. 1999). We have therefore added this variable to our model to see if social fear of failure acts as an obstacle to entrepreneurial activity and whether this obstacle is uniform across rural areas in both Catalonia and in the rest of Spain.

H₁: The social stigma toward entrepreneurial failure is an informal institutional factor that explains propensity of individuals towards entrepreneurial activity.

The Role-Model effect is a sociological phenomena that has been widely studied (McGregor 1961, Shapiro et al. 1978, Gibson 2004) and has been applied to entrepreneurship as an informal institutional factor which can act as a stimuli to entrepreneurial activity (Schein 1978, Venkataraman 2004). Many entrepreneurship support organisations have been introducing peer-mentoring programmes as a way to
put in practice the benefits of the Role-Model effect. The effect of the presence of a personal acquaintance who has successfully created a business over the past two years should act as a stimuli for entrepreneurial activity. Our model will try to determine if this is so and whether the effect is equal amongst rural areas in Catalonia and in the rest of Spain.

H₂: The presence of entrepreneurial role-models is an informal institutional factor that explains propensity of individuals towards entrepreneurial activity.

Finally, the social praise for entrepreneurs and the social prestige and status that entrepreneurs receive can act as an important non-pecuniary reward for entrepreneurship and therefore affect the opportunity cost of becoming an entrepreneur (Baumol 1993, Gifford 1998). We will test whether the belief that the community praises its entrepreneurs is having a positive effect upon entrepreneurial activity and if this effect is constant across rural areas of Catalonia and the rest of Spain.

H₃: The social rewards for entrepreneurs form an informal institutional factor that explains propensity of individuals towards entrepreneurial activity.

By testing the proposed hypotheses, we expect to be able to determine and compare the influence of the informal institutional framework on the levels of entrepreneurial activity in rural Catalonia, versus that of rural areas for the rest of Spain. We also should be able to analyse the influence that certain informal institutional factors are having upon the superior entrepreneurial activity levels found in rural Catalonia. Table 1 presents the descriptive statistics for the selected variables of the study.
Table 1: Descriptive Statistics of selected variables for rural samples

<table>
<thead>
<tr>
<th>Variables</th>
<th>Catalonia</th>
<th>Rest of Spain</th>
<th>Total sample</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Entrepreneurial Activity (TEA)</strong></td>
<td>0.1144 (***)</td>
<td>0.0343</td>
<td>0.0534</td>
</tr>
<tr>
<td></td>
<td>(0.3191)</td>
<td>(0.1821)</td>
<td>(0.2249)</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td>0.8905 (***)</td>
<td>0.4595</td>
<td>0.5623</td>
</tr>
<tr>
<td>(1 for man, 0 otherwise)</td>
<td>(0.3130)</td>
<td>(0.4987)</td>
<td>(0.4964)</td>
</tr>
<tr>
<td><strong>Age (years)</strong></td>
<td>42.2935</td>
<td>41.7570</td>
<td>41.8849</td>
</tr>
<tr>
<td></td>
<td>(12.9745)</td>
<td>(12.6952)</td>
<td>(12.7566)</td>
</tr>
<tr>
<td><strong>Primary studies</strong></td>
<td>0.3980</td>
<td>0.3988</td>
<td>0.3986</td>
</tr>
<tr>
<td></td>
<td>(0.4907)</td>
<td>(0.4900)</td>
<td>(0.4899)</td>
</tr>
<tr>
<td><strong>Secondary studies</strong></td>
<td>0.3831</td>
<td>0.3769</td>
<td>0.3784</td>
</tr>
<tr>
<td></td>
<td>(0.4874)</td>
<td>(0.4850)</td>
<td>(0.4853)</td>
</tr>
<tr>
<td><strong>University studies</strong></td>
<td>0.1990</td>
<td>0.1636</td>
<td>0.1720</td>
</tr>
<tr>
<td></td>
<td>(0.4002)</td>
<td>(0.3702)</td>
<td>(0.3776)</td>
</tr>
<tr>
<td><strong>Self-confidence in entrepreneurial skills</strong></td>
<td>0.5473 (***)</td>
<td>0.3972</td>
<td>0.4330</td>
</tr>
<tr>
<td></td>
<td>(0.4990)</td>
<td>(0.4897)</td>
<td>(0.4958)</td>
</tr>
<tr>
<td><strong>Social fear for entrepreneurial failure</strong></td>
<td>0.3483</td>
<td>0.3988</td>
<td>0.3867</td>
</tr>
<tr>
<td></td>
<td>(0.4776)</td>
<td>(0.4900)</td>
<td>(0.4873)</td>
</tr>
<tr>
<td><strong>Personnel knowledge of recent entrepreneur</strong></td>
<td>0.3682 (*)</td>
<td>0.2944</td>
<td>0.3120</td>
</tr>
<tr>
<td></td>
<td>(0.4835)</td>
<td>(0.4561)</td>
<td>(0.4636)</td>
</tr>
<tr>
<td><strong>Social reward for entrepreneurship</strong></td>
<td>0.5124</td>
<td>0.4969</td>
<td>0.5006</td>
</tr>
<tr>
<td></td>
<td>(0.5011)</td>
<td>(0.5004)</td>
<td>(0.5003)</td>
</tr>
<tr>
<td><strong>Observations</strong></td>
<td>201</td>
<td>642</td>
<td>843</td>
</tr>
</tbody>
</table>

Values in brackets represent the standard deviation.
*; **; *** = Significant at the 0.10, 0.05, and 0.01 level, respectively (ANOVA).

As we can see within table 1, the main result shows that there is a highly statistically significant difference between both samples in what refers to entrepreneurial activity. Rural Catalonia is characterised by a greater proportion of males. We also report a significant difference in what refers to self-confidence in entrepreneurial skills as well as for our proxy for the Role-Model effect, which result is statistically significant higher in the case of Catalonia. As remarked in the theoretical framework, we propose that individuals from both samples neither share the same institutional framework nor face the same incentives to become entrepreneurs.

3.3 Method

An individual will become an entrepreneur if the total consideration of push and pull factors considered in the analysis results in a positive decision. It is easy and convenient
to consider the decision process for becoming an entrepreneur as a process that generates a binary choice model. Thus, to corroborate our framework, and to identify those characteristics that make individuals more likely to become an entrepreneur in rural Catalonia and Spain (excluding Catalonia), we perform a (cross section) logit regression model estimated by maximum likelihood method expressed as follows (Greene 1997),

\[
\hat{p}_i = p (\text{become an entrepreneur}) = \frac{e^{\hat{\beta}_0 + \hat{\beta}_n x_{ni}}}{1 + e^{\hat{\beta}_0 + \hat{\beta}_n x_{ni}}}
\]  

[1]

Expression [1] may be expressed as a linear function of the odds to turn into an entrepreneur

\[
\ln \hat{W}_i = \hat{\beta}_0 + \hat{\beta}_n x_{ni} + e_i
\]  

[2]

where,

\(\hat{\beta}_0\) = constant term

\(\hat{\beta}_n\) = vector of parameters to be estimated for the \(n\)th independent variables.

\(x_{ni}\) = vector of observed value for the \(n\)th independent variables and the \(i\)th cases.

\(e_i\) = logistic distributed error term for the \(i\)th cases.

4. Empirical Findings
The results of the logit models of the binary decision to become an entrepreneur are presented in this section. Thus, model 1 is deemed as basic, since, as mentioned above,
it includes the most common variables reported in the literature, i.e., gender, age, formal education level and self-confidence in entrepreneurial skills. Specifications 2 and 3 have been run adding individually our informal institutional variables. Finally, model 4 presents the results for the full model, where all the variables, traditional and informal institutional, are considered. Table 2 presents the logit results considering the Catalan sample as well as that for the rest of Spain in a separate fashion.

Concerning the results for the Catalan sample, we observe that a positive valuation of self-confidence in entrepreneurial skills increases the probability to become an entrepreneur. This is consistent with previous studies having use similar variables (Arenius and Minniti 2004, Köllinger et al. 2004, Lee et al. 2004).

The individual’s educational variables included have a negative impact on the decision to become an entrepreneur, and this effect is statistically significant in the case of secondary studies. Because the omitted variable is university studies, we can conclude that individuals with high levels of education are more likely to become an entrepreneur in rural areas of Catalonia.

The variable representing the social stigma towards business failure has a negative effect upon entrepreneurial activity, but contrary to Wagner and Sternberg (2004) and Simon et al. (1999), no consistent statistically significant effect is reported. This leads us to reject $H_1$ in the case of rural Catalonia. As for social praise and status offered to entrepreneurs, we find an unexpected negative influence of non-pecuniary rewards on the adoption of entrepreneurial activities in the final model. Nevertheless, the lack of
significance for this variable prevents us for making any further comments. We therefore reject our $H_3$ for rural Catalonia.

The most interesting result emerges when the Role-Model variable is added in our analysis. In this case, the Role-Model proxy exerts a positive and statistically significant influence on entrepreneurial activity. This finding in accordance with those reported in Krueger (1993), Macke (2002), and Gibson (2004), due to the presence of Role-Models increases the probability to become an entrepreneur in rural areas, and in Catalonia more specifically. We therefore confirm $H_2$ in the case of rural Catalonia.
Table 2: Results of the logit models (Differentiating rural areas of Catalonia from those in the rest of Spain)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Catalunya (Rural)</th>
<th></th>
<th></th>
<th></th>
<th>Rest of Spain (Rural)</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Gender (1 for man, 0 otherwise)</td>
<td>-0.122</td>
<td>-0.171</td>
<td>-0.234</td>
<td>-0.111</td>
<td>0.339</td>
<td>0.354</td>
<td>0.333</td>
<td>0.348</td>
</tr>
<tr>
<td></td>
<td>(0.758)</td>
<td>(0.798)</td>
<td>(0.827)</td>
<td>(0.851)</td>
<td>(0.447)</td>
<td>(0.449)</td>
<td>(0.452)</td>
<td>(0.453)</td>
</tr>
<tr>
<td>Age (years)</td>
<td>-0.046(*)</td>
<td>-0.047(*)</td>
<td>-0.040</td>
<td>-0.041</td>
<td>-0.003</td>
<td>-0.003</td>
<td>-0.004</td>
<td>-0.004</td>
</tr>
<tr>
<td></td>
<td>(0.025)</td>
<td>(0.026)</td>
<td>(0.026)</td>
<td>(0.026)</td>
<td>(0.019)</td>
<td>(0.019)</td>
<td>(0.019)</td>
<td>(0.019)</td>
</tr>
<tr>
<td>Secondary studies</td>
<td>-1.656(***</td>
<td>-1.692(***</td>
<td>-1.520(***</td>
<td>-1.611(***</td>
<td>0.561</td>
<td>0.567</td>
<td>0.610</td>
<td>0.590</td>
</tr>
<tr>
<td></td>
<td>(0.412)</td>
<td>(0.686)</td>
<td>(0.700)</td>
<td>(0.714)</td>
<td>(0.523)</td>
<td>(0.523)</td>
<td>(0.530)</td>
<td>(0.532)</td>
</tr>
<tr>
<td>University studies</td>
<td>-0.975(***</td>
<td>-0.933</td>
<td>-0.862</td>
<td>-0.911</td>
<td>0.551</td>
<td>0.543</td>
<td>0.602</td>
<td>0.587</td>
</tr>
<tr>
<td></td>
<td>(0.650)</td>
<td>(0.659)</td>
<td>(0.679)</td>
<td>(0.686)</td>
<td>(0.621)</td>
<td>(0.621)</td>
<td>(0.632)</td>
<td>(0.634)</td>
</tr>
<tr>
<td>Self - confidence in entrepreneurial skills</td>
<td>3.218(****</td>
<td>3.275(****</td>
<td>2.958(****</td>
<td>2.975(****</td>
<td>2.789(****</td>
<td>2.820(****</td>
<td>2.867(****</td>
<td>2.847(****</td>
</tr>
<tr>
<td></td>
<td>(1.043)</td>
<td>(1.047)</td>
<td>(1.056)</td>
<td>(1.055)</td>
<td>(0.747)</td>
<td>(0.751)</td>
<td>(0.757)</td>
<td>(0.757)</td>
</tr>
<tr>
<td>Social fear for entrepreneurial failure</td>
<td>-0.916(*)</td>
<td>-0.851</td>
<td>-0.830</td>
<td>-0.830</td>
<td>0.206</td>
<td>0.216</td>
<td>0.182</td>
<td>0.182</td>
</tr>
<tr>
<td></td>
<td>(0.564)</td>
<td>(0.570)</td>
<td>(0.572)</td>
<td>(0.572)</td>
<td>(0.407)</td>
<td>(0.467)</td>
<td>(0.471)</td>
<td>(0.471)</td>
</tr>
<tr>
<td>Personnel knowledge of recent entrepreneur</td>
<td>0.949(*)</td>
<td>1.071(*)</td>
<td>0.952</td>
<td>1.071(*)</td>
<td>-0.235</td>
<td>-0.235</td>
<td>-0.239</td>
<td>-0.239</td>
</tr>
<tr>
<td></td>
<td>(0.523)</td>
<td>(0.523)</td>
<td>(0.523)</td>
<td>(0.523)</td>
<td>(0.482)</td>
<td>(0.482)</td>
<td>(0.482)</td>
<td>(0.482)</td>
</tr>
<tr>
<td>Social reward for entrepreneurship</td>
<td>-1.822</td>
<td>-1.547</td>
<td>-2.097</td>
<td>-2.202</td>
<td>-5.638(***</td>
<td>-5.736(***</td>
<td>-5.673(***</td>
<td>-5.791(***</td>
</tr>
<tr>
<td></td>
<td>(1.621)</td>
<td>(1.621)</td>
<td>(1.678)</td>
<td>(2.061)</td>
<td>(1.167)</td>
<td>(1.190)</td>
<td>(1.201)</td>
<td>(1.226)</td>
</tr>
<tr>
<td>R² (Cox and Snell)</td>
<td>0.137</td>
<td>0.149</td>
<td>0.163</td>
<td>0.166</td>
<td>0.044</td>
<td>0.044</td>
<td>0.044</td>
<td>0.045</td>
</tr>
<tr>
<td>Number of cases</td>
<td>201</td>
<td>201</td>
<td>201</td>
<td>201</td>
<td>642</td>
<td>642</td>
<td>642</td>
<td>642</td>
</tr>
</tbody>
</table>

Values in brackets represent the standard error. Dependent variable: One if the person is identified as being involved in entrepreneurial activity. In the case of the educational level the omitted variable is primary studies. Rural Catalonia sample size = 201. Rest of Spain sample size = 642.

*, **, *** = Significant at the 0.1, 0.05 and, 0.01 level, respectively (two tailed).
Regarding the self-confidence that individuals have in their entrepreneurial and business skills, the results show that this factor is a relevant and consistently significant explanatory variable of entrepreneurial activity throughout both rural Catalonia and rural Spain.

When we look at the results of rural Spanish sample, we find that, contrary to the results obtained in the case of the Catalan sample, educational level does not exert a significant influence over entrepreneurial activity. Nevertheless, we do remain with a consistently positive and statistically significant influence of the entrepreneurial skill self-confidence variable on the adoption of entrepreneurial activities.

As we introduce the informal institutional variables, we see that the social fear of entrepreneurial failure shows no significant influence on entrepreneurial activity, i.e., in Spanish rural areas (excluding Catalonia) the stigma to business failure does not appear as a significant constraining factor to entrepreneurial activity. As a result we reject $H_1$ for rural areas of Spain (excluding Catalonia).

Contrary to the results obtained in rural Catalonia, the Role-Model variable, knowledge of a recent entrepreneur, does not exert a significant influence on the probability to become an entrepreneur. We therefore reject $H_2$ for rural areas of Spain, outside Catalonia. Also, the social praise and status variable does not have a significant influence on entrepreneurial activities. We again reject $H_3$ for rural areas in the rest of Spain.
5. Concluding remarks

Albeit the upward trend researching entrepreneurship, little literature is dedicated to understanding regional differences in the propensity of individuals to undertake entrepreneurial activity. Using a sample for the year 2003 of 843 individuals from rural areas in Spain, 201 from Catalonia and 642 from the rest of Spain, we perform a logit model that attempts to identify the differentiating factors that encourage entrepreneurial activity in rural areas.

The main contribution of the study indicates that the statistically significant difference between entrepreneurial activity levels in rural Catalonia and rural areas of Spain is in part explained by informal institutional factors, where the presence of positive entrepreneurial examples (Role-Model effect) is a prominent explanatory factor favouring Catalonia. Nevertheless, the results of the study suggest that the propensity towards entrepreneurial activity is conditioned by the evolution of the institutional framework.

Our empirical findings reveal that other informal institutional factors, in this case, the social stigma over business failure and the social praise and status that the community offers its entrepreneurs; are not as important explanatory variables as the Role-Model effect for explaining the propensity to become an entrepreneur.

These findings back the growing call for territorial specificity in the formulation and application of entrepreneurship support measures and promotion. Entrepreneurship support policies and programmes have mostly been laid out in a uniform fashion across political and administrative boundaries. Our findings demonstrate the need for greater
attention and adaptation of entrepreneurship support and promotion measures
distinguishing between rural and urban areas.

This study opens up a line for future research where new research could attempt to
overcome one of our main limitations by introducing a greater number of informal
institutional variables into the analysis. Future research could also jointly compare the
influence of formal and informal institutional factors upon entrepreneurial activity in
specific regional areas.

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