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## Regional differences in the influence of Role-Models: Comparing the Entrepreneurial Process of Rural Catalonia

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### Abstract

The paper examines the impact of entrepreneurial Role-Models upon the entrepreneurial process in rural areas with strong entrepreneurial history versus those that are not necessarily characterised by such a tradition. To attain this objective, we adopt a socio-cultural institutional approach to entrepreneurship. We carry out a Rare Events 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 Spain is in large part explained by the presence of entrepreneurial Role-Models favouring entrepreneurial activity in rural Catalonia, an area with strong entrepreneurial tradition.

JEL classification: M13, B52, R58.

Keywords: Rural entrepreneurship, informal institutional factors, Role Model.

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## 1. Problem Statement

Contrary to the configurations found in the rest of Spain and in most of Europe (REGIDOR, 2000; TÖDTLING and WANZENBÖCK, 2003; WAGNER and STERNBERG 2004), many parts of rural Catalonia benefit from better economic performance than do urban areas of Catalonia. The average per capita income in many parts of rural Catalonia is higher than that found in its main urban areas<sup>1</sup>. More importantly for the purpose of this study, in Catalonia, entrepreneurial activity levels in rural areas more than triple those found in urban areas. Entrepreneurial activity in rural Catalonia is also significantly greater than levels found in rural areas of the rest of Spain<sup>2</sup>.

The findings in rural Catalonia support the links identified in the entrepreneurship literature between entrepreneurial activity and economic growth (STOREY, 1994; WENNEKERS and THURIK, 1999). Catalonia's rural counties experiencing greatest entrepreneurial activity benefit from highest disposable family incomes per capita, and they also show the most dynamic economies<sup>3</sup>.

Entrepreneurship is no longer an abstract concept. It has now become a common objective that has entered the agendas of most policy makers of all administrative echelons, up to the most remote rural localities. There is increasing demand and interest in placing 'Entrepreneurship' (new business formation) as a key element within the development and revitalisation process of lagging European areas. This preoccupation has made its way to the public departments responsible for rural development (ROSELL et al., 2001). The entrepreneurial spirit, enterprise creation, and modernisation and expansion of existing businesses have become key topics within rural development

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3 policy, which has changed from a sector specific to a territorial approach (BRYDEN  
4 and HART, 2004). This has mostly developed from an endogenous shift in perspectives  
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6 towards rural development resulting from the realisation that important relocation of  
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8 businesses and industry towards rural areas could hardly be achieved (BECATTINI et  
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10 al., 2002). Employment and entrepreneurial development in rural areas must  
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12 fundamentally come as a result of the initiatives of the local inhabitants (ROSELL and  
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14 VILADOMIU, 2001).  
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22 Emphasis on entrepreneurship as a possible tool for rural development efforts is the  
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24 result of a recent transformation in the nature, content, and administration of rural  
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26 policies in many EU and OECD countries in what has been called the New Rural  
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28 Paradigm (OECD, 2006). This transition has largely been triggered by the realisation  
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30 that agriculture, which was previously the main focus of rural policy, is losing its  
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32 relative economic and social significance. Rural areas are now believed to have an  
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34 *'increasingly important environmental and recreational function to fulfil'* (EUROPEAN  
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36 COMMISSION, 1997b: 8). More specifically, the measures addressing new business  
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38 formation assistance in rural areas are found in the European Commission document  
39  
40 (1997b) and implemented under the article 33 of the Council Regulation (EC) No  
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42 1257/1999 of May 17, 1999, on support for rural development from the European  
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44 Agricultural Guidance and Guarantee Fund.  
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53 The diversification of the productive base of rural areas has therefore become one of the  
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55 best-established objectives of rural development policy in Europe (EUROPEAN  
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57 COMMISSION, 1997a). Through diversification, it is primarily aimed to maximise  
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59 local natural, cultural, and human resource utilisation with rural population outflow  
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3 prevention through employment and income generation being a subsequent objective.  
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5 As a consequence, special attention is placed on the determinant factors in the creation  
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7 and development of alternative activities to agriculture, together with the maintenance,  
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9 modernisation, and growth of these alternative activities (FRANCES, 2002). It is in this  
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11 environment that the role of the entrepreneur gains a particular relevance, since the  
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13 farmer is called upon to become an entrepreneur by widening the farm's activities (on  
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15 and off the farm): "from the agrarian farm to the rural enterprise" (EUROPEAN  
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17 COMMISSION, 1997b: 8).  
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25 But just as the European Union is finally beginning to pay more attention to rural  
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27 development beyond simple agricultural support, and just as the opinion is beginning to  
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29 install itself that business creation and development may be the best strategy for rural  
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31 development, new reports from different international sources are now questioning the  
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33 benefits of entrepreneurship support for the economic development of rural areas. The  
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35 2002 Global Entrepreneurship Monitor (GEM) report for the USA (NECK et al. 2003)  
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37 concluded that entrepreneurship was mainly an urban phenomenon, where the highest  
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39 entrepreneurial density is to be found. The authors of the report concluded that  
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41 'entrepreneurship in rural areas may not be the best mechanism for economic growth'  
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43 (NECK et al. 2003: 31). In a scenario where politicians and policy makers need to see  
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45 quick and positive results to public investments, such doubt, coupled with the generally  
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47 slow, gradual, and often intangible benefits of entrepreneurship support policy, may just  
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49 be enough to break the momentum that rural entrepreneurship support had gathered.  
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58 Classical and contemporary economic thinking has consistently portrayed urban  
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60 agglomerations as the preferred setting for conducting business. It has been argued that

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3 urban centres offer greater division of labour (SMITH, 1776), larger ('pooled') labour  
4 market supply (MARSHALL, 1920), greater provision of non-traded inputs  
5 (MARSHALL, 1920), easier and cheaper access to markets (HOOVER, 1948), greater  
6 availability of complimentary services (MYDRAL, 1957), better infrastructures  
7 (JACOBS, 1969), and greater volumes of demand (KRUGMAN, 1981, 1991).  
8 However, improvements in transport infrastructure, communication, and information  
9 technologies have brought about an important reduction in the physical and psychic  
10 distance separating rural and urban areas. Although much of the formal institutional and  
11 infrastructural disadvantages in Europe have been alleviated, most rural areas have not  
12 experienced the appropriate and consequent convergence towards the entrepreneurial  
13 activity levels found in urban areas. Evidence is beginning to mount which would  
14 indicate that many rural areas are 'entrepreneurial laggards' not just because of their  
15 physical disadvantages, but also because of the inappropriate socio-cultural traits of  
16 their informal institutional framework making them non-conducive for effective  
17 entrepreneurial activity (FORNAHL, 2003).

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41 A recent study (OECD 2003) of the influence of entrepreneurship over local economic  
42 development conducted by Alister Nolan for the OECD involving 30 countries  
43 concluded that stimulating entrepreneurship can provide an alternative to paying  
44 unemployment insurance in rural areas, but that the direct employment and growth  
45 effects in these areas are modest and often favour specific segments of the population.  
46 According to the study, there are many obstacles that hinder entrepreneurship in rural  
47 areas, influencing both the extent and form of entrepreneurial activity and its prospects  
48 for survival. The study concludes that informal institutional factors, such-as the lack of  
49 positive entrepreneurial examples (Role-Models) and limited networks are some of the  
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3 most important barriers that restrain rural entrepreneurship (OECD 2003). In the  
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5 absence of entrepreneurial Role-Models, economic agents are not as propelled to take  
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7 the different decisions needed to become an entrepreneur.  
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12 This view, however, which would tend to dilute the impact of entrepreneurship in rural  
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14 areas, does not appear to be consistent with the experience of rural Catalonia.  
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19 Would it then be that, contrary to the conclusions of the OECD mentioned above, rural  
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21 Catalonia benefits from an institutional framework which includes entrepreneurial Role-  
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23 Models that other laggard regions lack? Could it be that entrepreneurial Role-Models  
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25 affect entrepreneurial activity in rural Catalonia in ways that differ from other rural  
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27 areas? Can Role-Models be behind the exceptional entrepreneurial performance of rural  
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29 Catalonia? Can Role-Models be behind the exceptional entrepreneurial performance of rural  
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31 Catalonia?  
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36 Thus, the main objective of this research is to follow-up on the determination and  
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38 comparison of the levels of entrepreneurial activity in rural Catalonia versus that of  
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40 rural areas for the rest of Spain. We want to determine whether entrepreneurial Role-  
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42 Models have the same impact, across regions, upon the different stages of the  
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44 entrepreneurial process. Consequently, we aim to evaluate the specific influence that  
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46 entrepreneurial Role-Models are having upon the superior entrepreneurial activity levels  
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48 found in rural Catalonia.  
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54 The main contribution of the study indicates that there is a significant difference  
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56 between entrepreneurial activity levels in rural Catalonia, an area characterised by a  
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58 strong industrial tradition. We report that the distinctions in the case of rural Catalonia  
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3 are mainly due to the presence of informal institutional factors, emphasising the impact  
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5 of positive entrepreneurial examples (Role-Model effect) upon entrepreneurial decision  
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7 process.  
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12 The paper is organised as follows. Section 2 presents the theoretical framework and the  
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14 literature review. Data and research methodology are introduced in section 3. A  
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16 discussion of the results is offered in section 4 and; final conclusions are displayed in  
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18 section 5.  
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## 22 23 24 2. Theoretical Framework and Literature Review

### 25 26 27 2.1 Institutional approach to entrepreneurship research

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29 A growing number of academics are demonstrating that a theoretical framework based  
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31 on a socio-cultural and institutional approach may be more appropriate for the study of  
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33 entrepreneurship and SMEs than conventional economic and psychological approaches  
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35 (GRANOVETTOR, 1985; NORTH, 1990; GNYAWALI and FOGEL, 1994;  
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37 MAILLAT, 1996; URBANO and VECIANA, 2001; UHLANER and THURIK 2004).  
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39 The main hard-core common to the theories falling under this approach is the basic  
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41 belief that the decision to create a new enterprise, and therefore to become an  
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43 entrepreneur, is conditioned by external or environmental factors. In other words, the  
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45 institutional framework and its socio-cultural factors are important determinants of the  
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47 levels of entrepreneurial activity in a specific time and place.  
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55 Examples of theories that adopt a socio-cultural or institutional approach have been  
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57 compiled and described in VECIANA (1999). In the mentioned article, the theories  
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59 under this and the other main approaches used for the study of entrepreneurship are  
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3 described in much greater length. We will therefore not venture into this task within this  
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6 paper.

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10 Of the theories within the socio-cultural or institutional approach, the Institutional  
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12 Economic Theory, developed mainly by DOUGLASS NORTH (1990), is one of the  
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14 most general, which encloses most of the specificities of the other theories falling under  
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16 the same approach. Together with the theoretical amplitude that the institutional  
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18 economic theory offers, the historical perspective and institutional embeddedness  
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20 argument which it offers are especially ideal for the objective laid out for this study, and  
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22 was therefore used as the theoretical backbone guiding our research.  
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29 Institutional economic theory develops a very wide concept of 'institution'. NORTH  
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31 (1990: 3) proposes that 'institutions are the rules of the game in a society, or more  
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33 formally, institutions are the constraints that shape human interaction'. Institutions can  
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35 be either formal - such as political rules, economic rules and contracts - or informal -  
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37 such as codes of conduct, attitudes, values, norms of behaviour, and conventions, or  
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39 rather the culture of a determined society. Since the main function of institutions in a  
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41 society is to reduce uncertainty by establishing a stable structure for human interaction,  
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43 NORTH attempts to explain how institutions and institutional framework affect  
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45 economic and social development.  
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53 According to NORTH (1995), formal institutions are subordinate to informal ones in the  
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55 sense that they are the deliberate means used to structure the interactions of a society in  
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57 line with the norms and cultural guidelines that make up its informal institutions. Policy  
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59 making that attempts to change the formal institutions of society will therefore have  
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3 little success if it does not first adjust the informal institutions in a compatible way. The  
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5 difficulties rise from the fact that, whereas a governing body can influence the evolution  
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7 of a society's formal institutions in a rather direct way, informal institutions are much  
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9 less tangible and usually fall outside the direct influence of public policy. They can be  
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11 moulded, but tend to resist change and take time to evolve towards new social norms.  
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17 This institutional evolution is especially important for the purpose of this study since  
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19 one of the main distinctions between rural Catalonia and rural areas of the rest of Spain  
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21 lies in the industrial history and entrepreneurial tradition of rural Catalonia, shared by  
22  
23 very few other rural areas of Spain. NORTH (1981, 1990) explains using an  
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25 institutional approach how there can exist 'radically differential' performance of  
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27 economies over long periods of time, due to the interactions between institutions and  
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29 organisations (economic, political, or social) that shape the direction of institutional  
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31 change.  
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39 Institutions determine the opportunities of society and in response organisations are  
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41 created to take advantage of these opportunities. As the organisations evolve, they alter  
42  
43 the institutions. The resultant path of institutional change, according to this author, can,  
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45 on the one hand, lead to a stagnant situation where institutions come to serve the sole  
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47 purpose and interests of maintaining existing organisations, or on the other hand, can  
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49 lead to a 'lock-in that comes from the symbiotic relationship between institutions and  
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51 evolving organisations as a consequence of the incentive structure provided by those  
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53 institutions and the dynamic feedback process by which human beings perceive and  
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55 react to changes in the opportunity set' (NORTH, 1990: 7).  
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3 NORTH followed-up his path dependency argument by describing the embedded  
4 character of informal institutions as a result of their cultural content. PILON and DE  
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6 BRESSON (2003) recently reinforced a similar argument in their study of innovative  
7 districts identifying local cultural ‘anchoring’ based on cultural similarities, cultural  
8 cohesiveness, and historical particularism and heritage making certain geographical  
9 areas more conducive to innovative entrepreneurial activity. Leaving the innovative  
10 character of entrepreneurship aside, the same argument holds within the theoretical  
11 framework established within the institutional economic theory.  
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24 Following SHAPERO (1971), VECIANA (1980), and SHAPERO and SOKOL (1982),  
25 who remarked the importance of positive examples over the decision to become an  
26 entrepreneur, FORNAHL (2003) proposed that amongst the institutional factors  
27 influencing entrepreneurial activity, the role of positive entrepreneurial examples is  
28 especially important in a rural (regional) context. The presence of entrepreneurial Role-  
29 Models, be it in a rural or urban setting, strongly influences the cognitive representation  
30 of economic agents and strongly influences their behaviour through the different  
31 decisions needed to become an entrepreneur (KRUEGER, 1993). The argument is that  
32 the ‘development and the related likelihood of discovering entrepreneurial opportunities  
33 and increasing the willingness to start a new firm is strongly influenced by positive  
34 examples, so-called Role-Models’ (FORNAHL, 2003: 50). These positive examples  
35 have two main effects, first, it may make it easier to discover and act upon  
36 entrepreneurial opportunities if other similar and successful business opportunities,  
37 identified by others, can serve as references. Second, entrepreneurial example leads to a  
38 (re-) allocation of cognitive attention to certain opportunities or business conceptions  
39 affecting the direction of the active search, and perception, of opportunities as well as  
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3 the confidence in ones own entrepreneurial possibilities. A positive example leads to an  
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5 increase in the likelihood that other agents also become entrepreneurs (SPEIZER,  
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7 1981), since the internal reaction of an individual influenced by a role-model is that “if  
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9 she/he can, why can’t I?” (VECIANA, 1980).  
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15 Thus, the higher the number of entrepreneurs, the higher the likelihood that other  
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17 agents, within a socially tight context, will change their propensity towards an  
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19 entrepreneurial career (GIBSON, 2004). Once a critical mass is overcome, the local  
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21 institutional framework evolves to include a new social cognitive perception that is  
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23 more fertile for entrepreneurial activity. Regions therefore differ in their entrepreneurial  
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25 propensity, according to FORNAHL (2003), because of ‘small historical singularities’  
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27 that lead to a situation in which regions develop different common cognitive  
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29 perceptions, influencing the diffusion of new positive examples (Role-Models). As a  
30  
31 consequence, the acceptance of entrepreneurial activity within the region becomes  
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33 socially embedded. The promotion of an entrepreneurial culture and positive attitudes  
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35 towards entrepreneurship can be encouraged by “providing role-models through the  
36  
37 ‘showcasing’ of success stories” (EUROPEAN COMMISSION, 2003: 21).  
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46 FORNAHL (2003) went on to develop a theoretical model of the entrepreneurial  
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48 process in a regional context based on the assumption that the entrepreneurial event is  
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50 more than just a one-off decision, but rather is the result of ‘a development process  
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52 along different stages that are all important to explain entrepreneurial activities and their  
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54 change over time’ (FORNAHL, 2003: 48).  
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3 Many different versions of the entrepreneurial process can be found in the literature and  
4 these models have been developed from many different perspectives and applied to  
5 many different contexts. Not only do the different stages of the process differ from one  
6 author to another, but the objectives of the entrepreneurial process analysis also vary.  
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8 Whereas the entrepreneurial process has been used in research to expose the critical  
9 points and key success factors of the business creation process (BRUYAT and JULIEN,  
10 2001), others have used it to illustrate the different activities and functions that must be  
11 carried out at every step of the process (HISRICH et al., 2005). Recently the  
12 entrepreneurial process has been used to identify the different factors influencing  
13 decision-making throughout the process (FAYOLLE, 2004) as well as the success of  
14 entrepreneurs with their new business venture (GREENE and STOREY, 2004).  
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32 BYGRAVE (1995) developed an entrepreneurial process model with the aim to  
33 determine the critical factors that give birth to new enterprises. The entrepreneurial  
34 process is placed at the centre of a framework composed of personal, sociological, and  
35 environmental factors that influence the different steps of the entrepreneurial process  
36 and consequently the creation of new enterprises. Nevertheless, the importance of  
37 informal institutional factors stands-out, especially in the earlier stages of the process.  
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48 One of the most consistent factors included within BYGRAVE's entrepreneurial  
49 process model is the presence of entrepreneurial Role-Models because, according to this  
50 model, they play an important part in facilitating opportunity detection and business  
51 idea generation within the Innovation stage of the model. Role-Models also can act as a  
52 stimulus within the Triggering Event stage. Finally, the presence of positive  
53 entrepreneurial examples, according to BYGRAVE (1995) is very important during the  
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3 Implementation stage since 'knowing successful entrepreneurs makes the act of  
4 becoming one yourself seem much more credible'. Someone who is in close contact  
5 with an entrepreneurial Role-Model is more likely to develop the desire and confidence  
6 to create their own business.  
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15 A model applying a socio-institutional approach, and more specifically the institutional  
16 economic theory developed by NORTH (1990), to the entrepreneurial process has been  
17 developed by AHMADI (2003) in his study of immigrant entrepreneurship in Sweden.  
18 This simplistic model illustrates how the entrepreneurial process is influenced by both  
19 formal (regulative) and informal (cognitive/cultural) institutions throughout all stages of  
20 the process. The influence, according to this author, between institutions and process are  
21 bi-directional, in the sense that at the same time as the process is guided by the  
22 institutional environment, the process can modify the framework's institutions.  
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36 In order to carry out the empirical analysis included in this study, a new model has been  
37 constructed by placing the entrepreneurial process model developed for rural areas by  
38 FORNAHL (2003) within an institutional framework, as was done by AHMADI (2003).  
39 In order to better adjust to the objectives of this study, we will specifically limit our  
40 institutional framework to the influence over the business creation process of  
41 entrepreneurial Role-Models, (BYGRAVE, 1995; FORNAHL, 2003).  
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53 The entrepreneurial process, according to this stage model, recognises that agents differ  
54 in their knowledge and capabilities, their personal characteristics, their access to  
55 information and/or their cognitive representation (FORNAHL, 2003).  
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8 The model starts by recognising that not all individuals have intentions of becoming  
9 entrepreneurs and only a fraction of economic agents intend to become entrepreneurs in  
10 the short to medium term. The main difference between economic agents and those with  
11 entrepreneurial intentions is that those from the latter group are actively searching for  
12 entrepreneurial opportunities.  
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22 The decision to actively act upon an identified entrepreneurial opportunity marks the  
23 second stage of the entrepreneurial process. At this stage agents undertake specific  
24 activities aimed at establishing their own business. Access to this stage is not limited  
25 only to those with entrepreneurial intention, as many economic agents who may not  
26 have had any particular entrepreneurial intention may be forced into entrepreneurial  
27 activity because of the lack of labour market alternatives, equivalent to the 'push theory'  
28 of entrepreneurship (AMIT and MULLER, 1994). Another reason why entrepreneurial  
29 activity is not exclusive to those who are deliberately searching for opportunities is that  
30 often these opportunities can emerge and offer themselves to those economic agents  
31 who previously had not contemplated an entrepreneurial career (SHANE, 2000).  
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48 The third and final stage occurs when the actual business is founded and the agents take  
49 the jump and become active entrepreneurs. The entrepreneurial stage model considers  
50 several important factors explaining the development of the entrepreneur across the  
51 different stages until the entrepreneurial event actually occurs, but mostly contemplates  
52 socio-institutional factors and their effect upon individuals throughout the process.  
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3 Although there are many elements influencing the development of agents across the  
4 different stages of the entrepreneurial process, in a rural context with a tight social  
5 construct, positive entrepreneurial examples, Role-Models, act as an important stimulus  
6 leading agents through the different stages of the process. Consequently, Role-Models  
7 influence the cognitive perception of agents and leads to an imitative learning process  
8 that can influence the pass-over into each new stage of the model (FORNAHL, 2003).  
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20 The first decision influenced by Role-Models within the entrepreneurial process is that  
21 represented by block 'A' in Figure 1, which indicates a greater likeliness of economic  
22 agents to adopt entrepreneurial intentions when they have close personal knowledge of  
23 individuals who have recently become entrepreneurs. The presence of an  
24 entrepreneurial Role-Model, either in their family or in their direct social environment,  
25 can lead an economic agent to contemplate such a career alternative and help change  
26 their cognitive attention towards the search for possible entrepreneurial opportunities  
27 (SHANE, 2000). This leads to formulate the first hypothesis:  
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41 **H<sub>1</sub>:** If a rural agent personally knows a recent entrepreneur, he/she will be more  
42 likely to have entrepreneurial intentions.  
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48 The second step is initiated when an entrepreneurial opportunity is found. As previously  
49 mentioned, entrepreneurial opportunities are not exclusive to those agents with  
50 entrepreneurial intention, therefore this step can originate either from the group with  
51 entrepreneurial intention, therefore this step can originate either from the group with  
52 entrepreneurial intention or from the remaining economic agents in general. The stage,  
53 represented by block 'B' in Figure 1, is initiated when the agent becomes actively  
54 involved in entrepreneurial activities aimed at exploiting this opportunity by  
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3 establishing a business. Entrepreneurial Role-Models again play a key role in this stage  
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5 as it helps agents focus the attention of agents towards specific opportunities brought to  
6  
7 the surface by the Role-Model's activities, as well as it helps modify the cognitive  
8  
9 perceptions of the agents in a way that can favour the agent's decision to actively  
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11 undertake entrepreneurial activities aimed at establishing their own business  
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13 (VENKATARAMAN, 2004). From this argument comes the second hypothesis:  
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20 **H<sub>2</sub>:** If a rural agent personally knows a recent entrepreneur, he/she will be more  
21  
22 likely to engage in entrepreneurial activities aimed at creating a business.  
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27 Finally, the decision to actually establish a new business, where the agent takes the  
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29 jump and becomes a new entrepreneur, represented by block 'C' in Figure 1, is again  
30  
31 largely influenced by entrepreneurial Role-Models. According to FORNAHL (2003:51)  
32  
33 'the cognitive representation and the comparison with other existing entrepreneurs  
34  
35 influence the evaluation of the founding option'. The final decision to actually start-up a  
36  
37 new business is not always based on the objective results of market tests and feasibility  
38  
39 studies, (when these exist), but rather is most often based on the subjective evaluation of  
40  
41 the founding decision against other alternative career and life options (GIBSON, 2004).  
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43 'Positive entrepreneurial examples can lead to a bias in the evaluation and to an increase  
44  
45 in the likelihood of starting up a firm' (FORNAHL, 2003: 51). Consequently, the third  
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47 hypothesis emerges:  
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56 **H<sub>3</sub>:** If a rural agent personally knows a recent entrepreneur, he/she will be more  
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58 likely to start-up a business.  
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3 Therefore, rural areas may differ in the functioning of the described process in the way  
4 that historical singularities can lead to a situation where a particular region accumulates  
5 a critical mass of entrepreneurial Role-Models that can modify the informal, and  
6 consequently the formal institutional framework allowing entrepreneurial activity to  
7 have greater affect upon economic development.  
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11 We will apply this model to the rural Spanish context to test whether the influence of  
12 entrepreneurial Role-Models across the different stages of the entrepreneurial process  
13 affects economic agents of rural Catalonia in ways that differ from agents from rural  
14 areas of the rest of Spain.  
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## 29 2.2 Distinctiveness of Catalan institutional framework

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31 The decision to concentrate our analysis and contrast the rural areas of the Spanish  
32 autonomous community of Catalonia against rural areas in the rest of Spain has been  
33 based on several indications that rural Catalonia has a particular institutional  
34 framework, different from those found elsewhere in Spain. First, Catalonia has been  
35 historically the focus of industrialisation in Spain because of its diversified and strongly  
36 open industry (COSTA-I-FONT and TREMOSA-I-BALCELLS, 2003). Second,  
37 Catalonia has a distinct history that has placed it upon a different institutional  
38 evolutionary path than the rest of Spain. This distinctiveness is commonly recognised  
39 and was institutionalised within the Catalan Statutes of Autonomy (SPANISH CODE  
40 OF INTERNATIONAL LAW, 1979).  
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58 Although the Catalan government has been the main responsible of the industrial  
59 policies through its Ministry of Industry, Catalonia has claimed higher political self-  
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3 government to reinforce its industrial policies. In fact, this has been recently attained  
4 within the reforms to the Catalan Statutes of Autonomy. In fact, the first article of  
5 Catalonia's proposed Statute of Autonomy, which was backed by 90% of the Catalan  
6 parliament, states that 'Catalonia is a nation exercising self-government through its own  
7 institutions' (PARLAMENT DE CATALUNYA, 2005). The preamble to the mentioned  
8 document highlights the specificity of Catalonia's institutional history. Furthermore,  
9 AHEDO (2006) and BUESA et al. (2006) consider the Catalan distinctiveness to  
10 evaluate the industrial development and innovation capacity in Spain.  
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24 NORTH and THOMAS (1973) recognised that 'history matters' in economic growth,  
25 mainly because of the path dependence of institutions. The distinctive history of  
26 Catalonia, as compared to the rest of Spain, has set it upon its own particular  
27 institutional evolution, which may influence the propensity of Catalans towards  
28 entrepreneurial activity in different ways than what can be found in the rest of Spain.  
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39 Related to, and consequent, of Catalonia's particular historical evolution is Catalonia's  
40 proper cultural specificity. Apart from the clear cultural difference of rural Catalonia  
41 coming from the distinct Catalan language, commonly used by over 50% of the Catalan  
42 population, spoken by some 74% and understood by over 95% of Catalans, Catalonia is  
43 characterised by differential cultural traits (BUSQUETS I DURAN 2001). The value  
44 scale of Catalans differs from that found in the rest of Spain. The results of a recent  
45 study reported in BUSQUETS I DURAN (2001) determining the values considered as  
46 important to instil in children showed how the most important value for Catalans is  
47 independence, whereas, to the contrary, it is obedience in the rest of Spain. Other  
48 important values for Catalans are predisposition toward working hard, and a sense of  
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3 economics and saving, which is not the case in the rest of Spain. Contrary to Catalonia,  
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5 religious values and faith stand out as important in the rest of Spain. The same study  
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7 also reported differences in the religious, leisure and social practices of Catalans as  
8  
9 compared to the rest of Spaniards.  
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15 The distinctive cultural heritage of Catalonia, as compared to the rest of Spain,  
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17 translates to a different informal institutional construct, which may influence the  
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19 propensity of Catalans towards entrepreneurial activity in different ways than what can  
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21 be found in the rest of Spain. In fact, business creation in rural Catalonia is more  
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23 dynamic than its urban counterpart. Table 1 shows how the growth in the number of  
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25 enterprises over the five-year period from 1996 to 2001 has been far greater in rural  
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27 Catalonia (25.7%) than it has in urban areas of Catalonia (10.4%).  
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34 --- Insert Table 1 approximately here ---  
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39 An analysis of the most recent census results (2001) show that whereas the proportion  
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41 of the Catalan population living in rural municipalities was of 11.9%, these same rural  
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43 areas accounted for 12.9% of Catalan enterprises. As a result, we find that enterprise  
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45 density is greater in rural areas than it is in urban areas of Catalonia (7.5 as compared to  
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47 6.7 enterprises per 100 inhabitants, respectively). More importantly, when we analyse  
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49 the recent evolution in the number of enterprises, we clearly see how rural areas have  
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51 been more dynamic when it comes to entrepreneurial activity than have been urban  
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53 areas of Catalonia.  
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3 Finally, the entrepreneurial character and propensity of rural Catalonia clearly contrasts  
4 with that found in rural areas in the rest of Spain. According to the results of the GEM  
5 entrepreneurship observatory (VECIANA, et al., 2004), the proportion of the adult  
6 population of rural Catalonia involved in entrepreneurial activities in 2003 stood at  
7 11.44%, more than three times superior than the proportion found in rural areas of the  
8 rest of Spain (3.43%). Whereas rural Catalonia is more entrepreneurial than its urban  
9 counterpart (3.83% of the adult population of urban Catalonia), rural areas in the rest of  
10 Spain have an entrepreneurial activity level that is inferior to that registered for urban  
11 areas (4.30%).  
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### 27 3. Data and Methodology

#### 28 3.1 Data selection

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30 The data used to carry out this study come from the Catalan Global Entrepreneurship  
31 Monitor (GEM) for the year 2003. The GEM project began in 1998 as a joint initiative  
32 of the London Business School and the Babson College to create an international  
33 entrepreneurship research network. Today, more than 40 different countries have taken  
34 part in the research initiative, making it a world reference for research into the  
35 entrepreneurship phenomenon and a highly valued source of information for  
36 professionals and policy makers in each of the participating countries.  
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51 A recent article by REYNOLDS et al. (2005) offers a comprehensive description of the  
52 GEM project and its methodology. Concerning empirical applications that use GEM  
53 data, WENNEKERS and THURIK (1999), STERNBERG and WENNEKERS (2005),  
54 and WONG, et al. (2005) evaluate the relationship between entrepreneurship and  
55 economic growth. From a micro perspective, STERNBERG and LITZENBERGER  
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3 (2004), WAGNER (2004), and WAGNER and STERNBERG (2004) study  
4  
5 entrepreneurship, its determinants, and the policies that enhance this behaviour.  
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10 The sample used for this study was built based on a multiple stage sampling method.  
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12 The Kayser criterion (KAYSER, 1990) was used to identify rural and urban areas. This  
13  
14 criterion is based on demographic figures and it considers as rural those municipalities  
15  
16 that have a population of less than 5000 inhabitants. Using the Bellview Fusion  
17  
18 computer assisted telephone interview (CATI) system, the survey was conducted by a  
19  
20 leading professional market investigation and public opinion service firm selected and  
21  
22 monitored directly by the International GEM Consortium. First, a random selection of  
23  
24 municipalities was collected according to the mentioned population quotas. In a second  
25  
26 stage, telephone numbers corresponding to the different municipalities were randomly  
27  
28 obtained from the annually updated 'España Office v5.2' fixed and mobile telephone  
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30 database. Finally, persons between the ages of 18 and 65 (inclusively) were randomly  
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32 selected by the mentioned software.  
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41 The original database used to reach the aim of this research contained 1243 observations  
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43 from rural areas in Spain, including 292 (23.49%) and 951 (76.51%) from Catalonia and  
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45 the rest of Spain, respectively. However, in the interest of following a rigorous  
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47 methodology, only individuals for whom a complete dataset of the independent  
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49 variables can be constructed are included. Thus, data availability limits the rural sample  
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51 to 843 observations, 201 (23.84%) from Catalonia and 642 (76.16%) from the rest of  
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53 Spain.  
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### 3.2 Determinant factors

Entrepreneurial Intention measured within the GEM framework is determined by the declaration of intention by the respondents of the study's adult population survey. All respondents declaring their intent to create their own business over the next three years are included within our dependent variable. The level of entrepreneurial intention of rural Catalonia is higher than that of rural areas of the rest of Spain, but this difference is not statistically significant. The proportion of agents with entrepreneurial intention in rural Catalonia stands at 5%, as compared to a proportion of 3.3% for rural areas of the rest of Spain (Table 2).

The GEM study distinguishes between two types of entrepreneurial activity, pre and post start-up entrepreneurial activity. The dependent variable used to test our second hypothesis is based on the proportion of respondents who are involved in pre start-up activities. A person is said to be involved in pre start-up activities if he/she has undertaken over the previous 12 months any concrete efforts, (such as the development of a business plan, the search for finance, the establishment of a team of founding partners, etc.) aimed at starting a business without receiving any pecuniary reward for doing so. From Table 2 we observe that the level of pre start-up entrepreneurial activity in rural Catalonia (6.97%) is significantly higher than that of rural areas of the rest of Spain (2.65%).

The variable used to test our third hypothesis identifies the respondents who are involved in post start-up entrepreneurial activities. A person is considered to be involved in post start-up entrepreneurial activities if he/she is owner or co-owner of a business that has been paying salaries for a period of no more than 42 months. The level



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3 of post start-up entrepreneurial activity in rural Catalonia (4.98%) is significantly higher  
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5 than that of rural areas of the rest of Spain (0.9%) (Table 2).  
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10 --- Insert Table 2 approximately here ---  
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15 To determine the entrepreneur's profile we consider a set of independent variables  
16 commonly found in models trying to explain entrepreneurial activity (JOHANSSON,  
17 2000; UUSTITALO, 2001; DOUGLAS and SHEPARD, 2002; and WAGNER, 2004).  
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24 First we consider the individual's gender. Gender is an important factor explaining the  
25 different propensity levels of individuals towards entrepreneurial activity. Gender  
26 distribution of entrepreneurship also determines the character and societal impact of the  
27 resulting entrepreneurship (OECD, 2004). Depending on the gender system of an  
28 economy, women entrepreneurial activity levels are usually lower than men's and, at the  
29 same time, women's entrepreneurship tends to have a different industrial configuration  
30 than men's entrepreneurship (CARTER et al., 2001). Women also start and manage  
31 firms in different ways and for different motivations than do men (BRUSH, 1992).  
32  
33 Women often have access to "fewer resources, less knowledge and have in many  
34 countries a lower societal position than men" (OECD, 2004: 30), nevertheless, women's  
35 entrepreneurship has been recognised during the last decade as an important untapped  
36 source of economic growth (OECD, 2004). Thus, in our models we introduce a dummy  
37 variable for gender, taking a value of one if the individual is a man, and zero otherwise.  
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39 As it can be seen in Table 2, there is a statistically significant difference in the  
40 proportion of men in rural Catalonia as compared to those from rural areas of the rest of  
41 Spain.  
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3 The second factor considered is the individual's age. According to SINGH and VERMA  
4 (2001) the decision to become an entrepreneur is affected by different factors along an  
5 individual's life cycle. Labour economists, using income-leisure choice models, have  
6 usually attributed the choice of leisure to older workers (SINGH and DENOBLE,  
7 2003). This would indicate a gradual decline in the propensity of individuals towards  
8 entrepreneurial activity as they become older. This decline usually starts past a climax  
9 point around the late thirties, at which point most entrepreneurs enter into  
10 entrepreneurship following a period of labour activity (KATZ, 1994). The link between  
11 age and entrepreneurial activity is double sided, whereas older individuals usually have  
12 greater tangible and intangible resources essential for successful business creation,  
13 younger individuals often have the greater drive and the needed ambition to persevere  
14 through the entrepreneurial process. Therefore, we introduce individual's age, expressed  
15 in years, as well as its quadratic term, aiming to determine both the relation between age  
16 and the entrepreneurial process, and to test whether or not there is an inflexion point  
17 beyond which the probability to be involved in the different stages of the  
18 entrepreneurial process changes (non linear relationships).  
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43 It is widely recognised that education influences people's attitudes towards starting their  
44 own business (DONKELS, 1991; KRUEGER and BRAZEAL, 1994). Individuals with  
45 lower education levels may see in entrepreneurship an opportunity to advance,  
46 economically and socially, beyond the constraints imposed by their formal education  
47 (DONKELS, 1991). However, individuals with lower formal education may have a  
48 narrower scope of entrepreneurial opportunities available to them (KRUEGER, 1993).  
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60 As for individuals with higher educational attainments, on the one hand, they tend to  
have greater technical and managerial skills that open up a larger array of possible

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3 entrepreneurial opportunities (KRUEGER, 1993). On the other hand, greater formal  
4 education levels have also been associated with greater employment opportunities,  
5 leading to a higher opportunity cost of entrepreneurial activity (JOHANSSON, 2000).  
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7 Regarding the variable definition, formal education is considered using dummy  
8 variables distinguishing people who finish secondary and those who did not, as well as  
9 people with university studies.  
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20 Furthermore, we consider the self-confidence in one's own entrepreneurial skills as a  
21 dummy variable, taking a value of one if the person makes a positive assessment of  
22 his/her entrepreneurial skills, and zero otherwise. Several studies have recently used this  
23 variable in substitution, or together with, formal business training. These studies have  
24 found that entrepreneurial self-confidence explains an important part of the decision to  
25 become an entrepreneur (KRUEGER and BRAZEAL 1994, ARENIUS and MINNITI  
26 2004, KÖLLINGER et al. 2004, LEE et al. 2004). Respondents from rural areas of  
27 Catalonia demonstrate a statistically significant greater proportion of entrepreneurial  
28 self-confidence than what is found with respondents from rural areas of the rest of Spain  
29 (Table 2).  
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46 In addition, a second set of two dummy variables associated with the informal  
47 institutional framework of an area has been added. The informal institutional variables  
48 used are: 1) the belief in the existence of a social stigma over entrepreneurial failure;  
49 and, 2) the presence of entrepreneurial Role-Models, who have created new businesses  
50 over the past two years, within one's personal social circle.  
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3 The social stigma associated with business failure is an informal institutional factor that  
4 can act as an important obstacle to entrepreneurial activity (SIMON et al., 1999). We  
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8 have therefore added this variable to our model to see if the perception of social fear of  
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10 failure acts as an obstacle to entrepreneurial activity and whether this obstacle is  
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12 uniform across the analysed territories.  
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17 The Role-Model effect is a sociological phenomenon that has been widely studied  
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19 (SHAPIRO et al., 1978; GIBSON, 2004) and has been applied to entrepreneurship as an  
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21 informal institutional factor that can act as stimuli to entrepreneurial activity (SCHEIN,  
22  
23 1978; VENKATARAMAN, 2004). It should be mentioned that whereas most of the  
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25 literature on Role-Models considers that the positive effects of the phenomenon come  
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27 from multiple and cumulated contacts with positive entrepreneurial examples, our  
28  
29 analysis will limit itself to the personal knowledge of at least one recent entrepreneur.  
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31 The effect of the presence of a personal acquaintance that has successfully created a  
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33 business over the past two years should act as stimuli along the different steps of the  
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35 entrepreneurial process. Our model will try to determine if this is so and whether the  
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37 effect is equal amongst the different territories being analysed.  
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46 A significantly greater proportion of rural Catalan respondents have entrepreneurial  
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48 Role-Models within their personal social circles. To the contrary, no significant  
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50 difference is found between rural Catalonia and rural areas of the rest of Spain in what  
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52 relates to the perception of the existence of a social stigma towards business failure  
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54 (Table 2).  
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### 3.3 Method

To become an entrepreneur can be understood as a positive decision in a binary choice model. Thus, to identify the differentiating characteristics that affect the likelihood to become an entrepreneur in Catalonia and in the rest of Spain, one can perform a logit regression model estimated by maximum likelihood method expressed as follows (GREENE 2003),

$$\hat{p}_i(Y = 1, \text{Entrepreneurial decision process}) = \frac{e^{\hat{b}_0 + \hat{a} \hat{b}_n x_{ni}}}{1 + e^{\hat{b}_0 + \hat{a} \hat{b}_n x_{ni}}} = L(b'x) \quad [1]$$

After a logarithmic transformation, equation [1] can be expressed as a linear function of

the odds to become an entrepreneur  $\hat{W}_i = \frac{\hat{p}_i}{1 - \hat{p}_i}$ . The resulting expression follows:

$$\ln \hat{W}_i = \hat{b}_0 + \sum_{n=1}^N \hat{a} \hat{b}_n x_{ni} + e_i \quad [2]$$

where,

$\hat{b}_0$  = constant term

$\hat{b}_n$  = 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.

Nevertheless, as shown in Table 2 for the total sample, the individuals that express intention of creating their own business over the next three years, as well as those involved in pre start-up activities is only 3.68%. Also, only 1.90% of all persons considered in the total sample are involved in post start-up entrepreneurial activities.

Consequently, the fact that a person is involved in one of the different stages of the entrepreneurial process can be considered as a rare event<sup>4</sup>.

Therefore, the application of traditional logit models in samples where the binary dependent variable has much fewer ones (positive response) than zeros (no response) may lead to biased results due to the underestimation of the parameter estimates. Recently, KING and ZENG (2001a, and 2001b) developed a method for computing estimates in logit models that correct for the presence of rare events or small samples. This procedure, labelled rare events logit model, is based on the standard logit model, as presented in [1] and [2], but it uses an estimator that generates a lower root mean square error for coefficients.

Considering the characteristics of the three dependent variables used in this study, we make use of the rare events logit model with clustered observations for estimating the parameter estimates. To test whether the presence of entrepreneurial Role-Models have an influence upon the different decisions of the entrepreneurial process we carry out the following model:

*Entrepreneurial*

$$\begin{aligned}
 \text{decision process}_i = & \hat{b}_0 + \hat{b}_1 \text{Control Variables}_i + \hat{b}_2 \text{Social Fear}_i \\
 & + \hat{b}_3 \text{Social Fear}_i \text{ ' Catalonia} + \hat{b}_4 \text{Role Model}_i \\
 & + \hat{b}_5 \text{Role Model}_i \text{ ' Catalonia} + e_i
 \end{aligned}
 \quad [3]$$

Control variables correspond to the entrepreneur's profile, i.e., gender, age, education, and the self-confidence in entrepreneurial skills. The variable Catalonia takes a value of one if the respondent resides in rural Catalonia, and zero otherwise. Further empirical

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3 evidence on the impact of the informal institutional framework upon entrepreneurial  
4 activities using rare events logit models can be found in WAGNER (2004).  
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10 Parameters estimated from the rare events logit model only indicate the direction of the  
11 effect of each explanatory variable on the response probability. To obtain a better  
12 understanding of the results, we also calculate the first difference, which is the change  
13 in the probability as a function of a specific change in a variable holding the rest of  
14 variables constant at their means. First differences for the variables related to the  
15 informal institutional factors are estimated as  $\hat{\gamma}_x = \Pr(Y = 1|X = 1) - \Pr(Y = 1|X = 0)$ . In  
16 accordance with our framework, we will accept the hypothesis linked to each of our  
17 dependent variables if  $\hat{b}_s > 0$  and demonstrates acceptable levels of statistical  
18 significance.  
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35 Finally, we also calculate the proportion of correctly classified (predicted) observations.  
36 This is done for the full sample as well as for those observations that have positively  
37 embarked in the considered steps of the entrepreneurial process (adopter) and those that  
38 have not (non-adopters).  
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#### 47 4. Empirical Findings

48 This section presents the results of the rare events logit models. The first set of three  
49 columns considers entrepreneurial intention as dependent variable. The second set  
50 considers pre start-up entrepreneurial activity as dependent variable. Finally, the last set  
51 presents the results for the rare events logit models when post start-up entrepreneurial  
52 activity is the dependent variable. The first model in every set does not take into  
53 consideration the individual's geographical origin in the analysis. Model two adds into  
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3 the analysis a dummy variable that distinguishes those respondents residing in  
4 Catalonia. Finally, specification three considers the joint impact of Catalonia and the  
5 informal institutional factors (social fear of failure and the presence of entrepreneurial  
6 Role-Models) upon the different dependent variables considered in the analysis of the  
7 entrepreneurial process. Models 2 and 3 allow for assessing whether pre start-up and  
8 post start-up entrepreneurial activities increase when considering the fact of residing in  
9 rural Catalonia, as well as when this distinctiveness is considered within the informal  
10 institutional factors.  
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24 When analysing the results for entrepreneurial intention, the included variables for the  
25 individual's educational level have a negative impact on the decision to become an  
26 entrepreneur, and this effect is statistically significant in the case of primary studies  
27 (Table 3). Because the omitted variable is university studies, the evidence indicates that  
28 individuals with higher levels of education are more likely to show entrepreneurial  
29 intention (DONKELS, 1991; KRUEGER and BRAZEAL, 1994). Also, we see that the  
30 presence of Role-Models and self-confidence in entrepreneurial skills exert a positive  
31 and statistically significant impact upon individual's entrepreneurial intentions. From  
32 Table 4 we observe that, holding other variables constant at their means, the positive  
33 perception about entrepreneurial skills increases the probability of entrepreneurial  
34 intentions by 2.728% ( $\hat{\gamma}_5 = 2.728\%$ ). In the case of the Role-Model, we know  
35 that  $\hat{\gamma}_8 = 3.413\%$ , i.e., holding the rest of variables constant, the presence of a Role-  
36 Model increases the probability of entrepreneurial intention by 3.413%. This is  
37 consistent with previous studies having use similar variables (ARENIUS and MINNITI,  
38 2004; KÖLLINGER et al., 2004; LEE et al., 2004; WAGNER, 2004).  
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8 The second column of the series that uses entrepreneurial intention as dependent  
9 variable reveals that residing in rural Catalonia does not yield any statistically  
10 significant influence over their entrepreneurial intention. From the third model it can be  
11 observed that the personnel knowledge of recent entrepreneurs has a positive and  
12 statistically significant influence upon entrepreneurial intention. The result for the first  
13 difference shows that this impact is equally strong in both Spanish and Catalan rural  
14 areas. Thus, holding the rest of variables constant, the knowledge of a recent  
15 entrepreneur increases the probability for entrepreneurial intention by  
16 3.122% ( $\hat{\gamma}_8 = 0.03122$ ). We therefore confirm  $H_1$  for the entire sample under analysis,  
17 including the Catalan observations.  
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39 As for the findings for pre start-up entrepreneurial activity, it can be seen in the first  
40 model that the only significant factor that positively affects the decision to be involved  
41 in pre start-up entrepreneurial activity in rural areas of Spain is entrepreneurial self-  
42 confidence. From model 1 in Table 4 we observe that, holding the rest of variables  
43 constant, the presence of entrepreneurial self-confidence increases the probability of  
44 being involved in pre start-up activities by 6.771% ( $\hat{\gamma}_5 = 0.06771$ ).  
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56 Nevertheless, the third column of this series indicates that, the influence of personnel  
57 knowledge of Role-Models upon the decision to be involved in pre start-up  
58 entrepreneurial activities is relatively greater for individuals residing in rural Catalonia  
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3 as compared to those living in rural areas of the rest of Spain (Table 3). Empirical  
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5 findings indicate that holding other variables constant  $\hat{\gamma}_9 = 0.04163$ , meaning that the  
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7 probability of being involved in pre start up entrepreneurial activities increases by  
8  
9 4.163% for individuals residing in Catalonia who know a recent entrepreneur (Table 4).  
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11 Consequently, we confirm  $H_2$  in the case of Catalonia, and reject this same hypothesis  
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13 in the case of rural areas in the rest of Spain.  
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20 The third series of columns in Table 3 uses post start-up entrepreneurial activity as  
21  
22 dependent variable. The results indicate that young individuals are more likely to be  
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24 involved in post start-up entrepreneurial activities. However, and in accordance with  
25  
26 KATZ (1994) the parameter estimates for both age and the squared term for age indicate  
27  
28 that the relationship between age and post start-up entrepreneurial activities is inverted  
29  
30 U-shaped. Given the results we can assert that age exerts a positive and statistically  
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32 significant effect upon post start-up entrepreneurial activities up to the threshold of 37  
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34 years old. For people over 37 years old the probability to be involved in post start-up  
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36 entrepreneurial activities decreases respect to age, and this result is also statistically  
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38 significant (Table 3).  
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46 From column 2 it can be observed that residing in rural Catalonia exerts a statistically  
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48 significant influence over the decision to participate in post start-up entrepreneurial  
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50 activities. This shows that there is a geographical distinctiveness of rural Catalonia over  
51  
52 post start-up entrepreneurial activity. The results emerging from Table 4 indicates that,  
53  
54 holding the rest of variables constant, the probability of getting involved in post start-up  
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56 entrepreneurial activity increases by 0.544% when the respondents live in rural  
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58 Catalonia as compared to those living in rural areas of the rest of Spain.  
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3 Finally, from the third column of this set it is possible to observe that the influence of  
4 the personnel knowledge of recent entrepreneurs upon the decision to be involved in  
5 post start-up entrepreneurial activities is relatively greater for individuals residing in  
6 rural Catalonia as compared to those living in rural areas of the rest of Spain (Table 3).  
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8 The result for the first difference shows that  $\hat{\gamma}_9 = 0.01181$ . This indicates that, holding  
9 the rest of variables constant, residing in rural Catalonia and knowing a recent  
10 entrepreneur increases the probability to be involved in post start up entrepreneurial  
11 activities by 1.181% (Table 4). We therefore confirm  $H_3$  in the case of Catalonia,  
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13 whereas we reject this same hypothesis in the case of rural areas in the rest of Spain.  
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## 28 5. Concluding remarks

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30 Albeit the upward trend researching entrepreneurship, little is known of the factors that  
31 influence the decisions included in the entrepreneurial process in rural areas. Using a  
32 sample for the year 2003 of 843 Spanish individuals, 201 and 642 from rural Catalonia  
33 and rural areas in the rest of Spain, respectively; we performed a rare events logit model  
34 with clustered observations in order to identify the influence of entrepreneurial Role-  
35 Models upon the different stages in the entrepreneurial process.  
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46 The main contribution of this paper indicates that there is a significant difference in the  
47 influence of entrepreneurial Role-Models upon the different decisions of the  
48 entrepreneurial process in rural Catalonia as compared to rural areas of the rest of Spain.  
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50 The results from our first hypothesis indicate that entrepreneurial Role-Models have a  
51 significant positive effect upon entrepreneurial intentions (the first phase of the  
52 entrepreneurial process) of rural individuals throughout Spain. To the contrary, in the  
53 case of our second and third hypotheses measuring the influence of Role Models over  
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3 'pre' and 'post' start-up entrepreneurial activities (second and third phases of the  
4 entrepreneurial process), we found that the personnel knowledge of recent entrepreneurs  
5 only has a statistically significant positive influence over rural Catalans. Another  
6 important finding is that self-confidence in entrepreneurial skills appears as a  
7 statistically significant factor influencing all stages of the entrepreneurial process.  
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17 The academic implications of these findings lay mostly in the strong support in favour  
18 of a greater use of an institutional approach to the study of entrepreneurship, especially  
19 in what concerns differences in entrepreneurial activity levels across regions. From this  
20 research it can be concluded that informal institutions are the underlying backbone to  
21 entrepreneurial decision-making. Even in areas bounded by relatively homogeneous  
22 formal institutions and policy, entrepreneurial activity is often unevenly distributed as a  
23 consequence of varying informal institutional structures, mostly linked to historical  
24 events that set different areas upon distinct institutional evolutionary paths. This paper  
25 gives empirical support to a growing number of theoretical works that lay the basis for a  
26 similar premise. Regions with different informal institutional frameworks will react  
27 differently to identical formal institutions and policies.  
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46 This brings about important implications of the findings of this paper for policy-makers.  
47 Basically, the conclusions of the study leads to recommend that entrepreneurship  
48 support policy at local level must first establish the necessary informal institutional  
49 foundation within a community before attempting to apply formal institutional measures  
50 for the promotion of entrepreneurial activity. Formal support may be vain in the  
51 presence of an inappropriate informal institutional framework.  
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3 The results of the study specifically highlight the importance of entrepreneurial Role-  
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5 Models in an individual's personal social circle as a positive stimulus explaining uneven  
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7 entrepreneurial activity levels across different geographical areas. This would tend to  
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9 imply that entrepreneurship support policy should lay the grounds for a greater social  
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11 interaction on the part of existing entrepreneurs, promoting networking possibilities  
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13 with potential entrepreneurs, glorifying the role of the entrepreneur in the community,  
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15 as well as socially celebrating the entrepreneurial successes of existing entrepreneurs.  
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17 The local administrations must magnify the visibility of positive entrepreneurial  
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19 examples within their communities. Entrepreneurial Role-Models can help instil the  
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21 appropriate entrepreneurial atmosphere within a community's informal institutional  
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23 framework that will then permit formal entrepreneurship support policy to have a much  
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25 more potent impact upon local entrepreneurial activity levels.  
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34 For the entrepreneur, the implications of the study indicate that in all institutional  
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36 frameworks, entrepreneurial self-confidence is a driving force leading individuals  
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38 through the different stages of the entrepreneurial process. Entrepreneurial self-  
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40 confidence is a natural consequence of prolonged exposure to positive entrepreneurial  
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42 examples. An individual with entrepreneurial ambitions can gain the necessary  
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44 confidence in his/her own entrepreneurial skills by being in close personal contact with  
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46 individuals who have themselves successfully established their own businesses.  
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53 As with any cross-sectional study, the limitations of this paper lies in both the absence  
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55 of a longitudinal analysis that could have given a greater evolutionary perspective to the  
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57 study, and in the lack of sample diversity, limiting the analysis to only two  
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59 geographically bounded samples. A greater number of informal institutional variables,  
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3 as well as the introduction of certain formal institutional variables could have  
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5 complimented our analysis of entrepreneurial Role-Models. As a consequence, further  
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7 research should not only attempt to replicate a similar analysis in a different geographic  
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9 and territorial context, but should also attempt to enrich the institutional content of the  
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11 model as well as its longitudinal/historical perspective.  
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## Endnotes:

<sup>1</sup> Over half of Catalonia's rural counties benefit from a disposable family income per capita figure that surpasses that found in the Barcelonès (IDESCAT, Rbfd figures for 2000).

<sup>2</sup> Based on results from the GEM-Catalunya entrepreneurship observatory for the year 2003 for rural and urban municipalities using the Kayser criterion for determining rurality.

<sup>3</sup> Based on latest GDP figures for Catalonia measured at county level, IDESCAT.

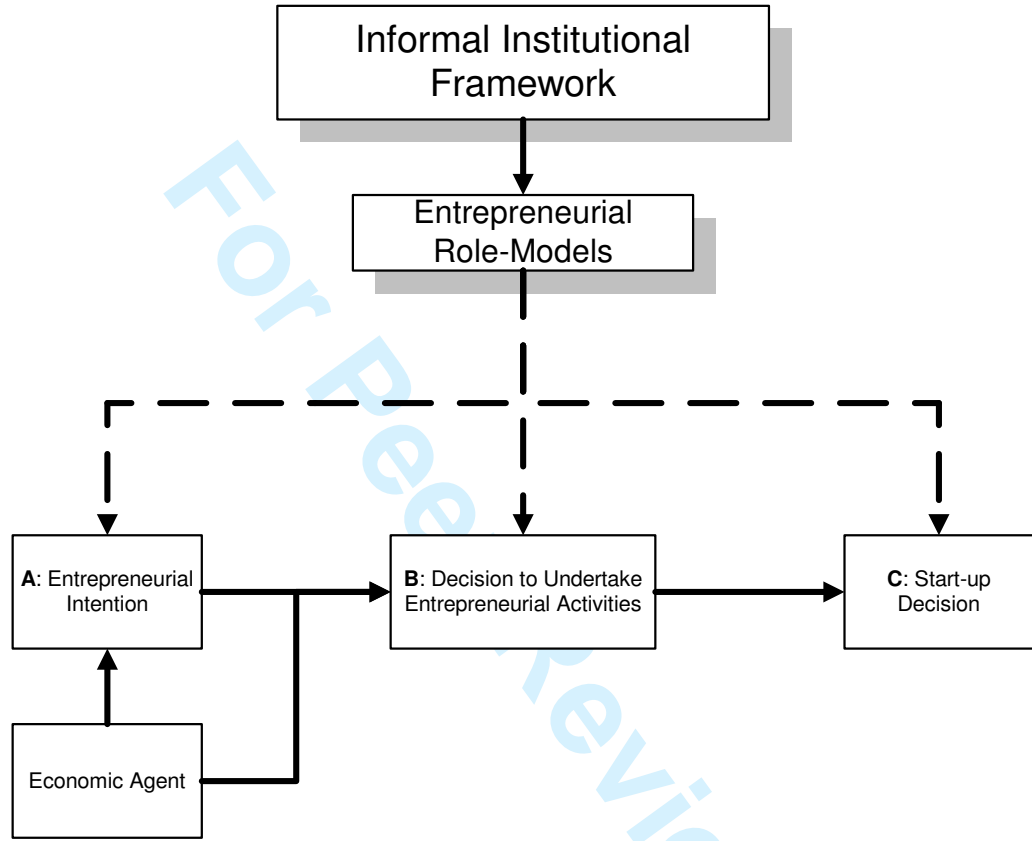
<sup>4</sup> We gratefully acknowledge one of the anonymous referees for remarking the importance on the use of a more accurate estimation method when in the data set the proportion of events can be considered as rare.



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APPENDIX: List of Figures and Tables

Figure 1: Stage model of entrepreneurial process



Source: Self-devised

Table 1. Evolution in the number of enterprises in Catalonia (1996 – 2001)

	<b>Enterprise density 2001 <sup>(a)</sup></b>	<b>Net growth <sup>(b)</sup> 1996 – 2001</b>	<b>Growth rate <sup>(c)</sup> 1996 – 2001</b>
Catalonia	6.8%	47305	12.3%
Urban Areas	6.7%	35440	10.4%
Rural Areas	7.5%	11865	25.7%

(a) Enterprise density is the ratio of total enterprises to total population. (b) Difference between the number of enterprises in 2001 and 1996. (c) Net increase in the number of enterprises from 1996 to 2001 over the number of enterprises 2001. Rurality measured according to the Kayser criterion at municipality level, (Kayser, 1990).

Source: self-devised from Catalan Statistics Institute (IDESCAT).

Table 2. Descriptive statistics of selected variables

Variables	Rural Catalonia	Rural areas of the rest of Spain	Full sample	Kruskal Wallis chi-test (medians)
Rural Catalonia	1.0000	0.0000	0.2384 (0.4264)	n.a.
Entrepreneurial intention	0.0498 (0.2180)	0.0327 (0.1780)	0.0368 (0.1883)	1.253
Pre start-up entrepreneurial activity	0.0697 (0.2552)	0.0265 (0.1607)	0.0368 (0.1883)	8.046 (***)
Post start-up entrepreneurial activity	0.0498 (0.2180)	0.0093 (0.0963)	0.0190 (0.1365)	13.407 (***)
Gender (1 for men, 0 otherwise)	0.8905 (0.3130)	0.4595 (0.4987)	0.5623 (0.4964)	115.421 (***)
Age (years)	42.2935 (12.9745)	41.7570 (12.6952)	41.8849 (12.7566)	0.387
Primary studies	0.3980 (0.4907)	0.3988 (0.4900)	0.3986 (0.4899)	0.000
Secondary studies	0.3831 (0.4874)	0.3769 (0.4850)	0.3784 (0.4853)	0.025
University studies	0.1990 (0.4002)	0.1636 (0.3702)	0.1720 (0.3776)	1.349
Self – confidence in entrepreneurial skills	0.5473 (0.4990)	0.3972 (0.4897)	0.4330 (0.4958)	14.025 (***)
Social fear for entrepreneurial failure	0.3483 (0.4776)	0.3988 (0.4900)	0.3867 (0.4873)	1.644
Personnel knowledge of recent entrepreneur	0.3682 (0.4835)	0.2944 (0.4561)	0.3120 (0.4636)	3.876 (**)
Number of observations	201	642	843	

Values in brackets represent the standard deviation. n.a. = non-applicable.

\*, \*\*, \*\*\* = Significant at the 0.10, 0.05, and 0.01 level, respectively (two-tailed).

Table 3. Rare Events Logit Results: Impact of Role-Model on entrepreneurial process in rural areas

Independent Variables	Entrepreneurial intention			Pre start-up entrepreneurial activity			Post start-up entrepreneurial activity		
	1	2	3	1	2	3	1	2	3
Rural Catalonia (1 if positive, 0 otherwise)		0.2860 (0.4103)			0.5438 (0.4101)			1.4448 (**) (0.6748)	
Gender (1 for man, 0 otherwise)	-0.0546 (0.3797)	-0.1542 (0.3880)	-0.1330 (0.4009)	0.5253 (0.3969)	0.3018 (0.4401)	0.2627 (0.4225)	0.7518 (0.6597)	0.1612 (0.7284)	0.3713 (0.7098)
Age (years)	-0.1090 (0.0871)	-0.1116 (0.0872)	-0.1109 (0.0896)	0.1293 (0.1196)	0.1227 (0.1226)	0.1275 (0.1273)	0.6815 (***) (0.2028)	0.8333 (***) (0.2611)	0.8337 (***) (0.2635)
Age squared (years)	0.0012 (0.0010)	0.0012 (0.0010)	0.0012 (0.0011)	-0.0016 (0.0015)	-0.0015 (0.0015)	-0.0016 (0.0015)	-0.0092 (***) (0.0028)	-0.0113 (***) (0.0036)	-0.0112 (***) (0.0035)
Primary studies	-0.9805 (*) (0.5070)	-0.9870 (*) (0.5068)	-0.9952 (*) (0.5099)	-0.3449 (0.4709)	-0.3435 (0.4637)	-0.4325 (0.4695)	1.6436 (1.1549)	1.8131 (1.2480)	1.6587 (1.2648)
Secondary studies	-0.3924 (0.4356)	-0.3963 (0.4381)	-0.3908 (0.4363)	-0.3007 (0.4964)	-0.3149 (0.5052)	-0.2876 (0.5041)	1.0336 (1.1067)	1.1694 (1.1767)	1.2175 (1.1689)
Self-confidence in entrepreneurial skills	0.9941 (**) (0.4357)	0.9676 (**) (0.4427)	0.9755 (**) (0.4590)	2.6063 (***) (0.7354)	2.5416 (***) (0.7266)	2.6001 (***) (0.7471)	2.2324 (**) (1.0309)	2.0413 (**) (1.0286)	2.1383 (**) (1.0576)
Social fear for entrepreneurial failure	-0.6382 (0.4441)	-0.6369 (0.4430)	-0.5878 (0.5379)	0.0967 (0.3991)	0.0834 (0.3974)	0.3493 (0.4841)	-0.6904 (0.6844)	-0.6361 (0.6887)	-0.2575 (0.8687)
Catalonia $\times$ Social fear for entrepreneurial failure			0.0328 (0.9452)			-0.4704 (0.7559)			-0.5123 (1.6078)
Personnel knowledge of recent entrepreneur	1.0759 (***) (0.3785)	1.0592 (***) (0.3761)	0.9775 (**) (0.4235)	0.4338 (0.3820)	0.3955 (0.3706)	-0.1712 (0.5103)	1.0734 (*) (0.5757)	0.9385 (0.5940)	0.2766 (0.7593)
Catalonia $\times$ Personnel knowledge of recent entrepreneur			0.3463 (0.5276)			1.3364 (**) (0.6311)			1.6772 (*) (0.9299)
Intercept	-1.2547 (1.6681)	-1.1881 (1.6611)	-1.1516 (1.6572)	-7.6737 (***) (2.7128)	-7.4967 (***) (2.7636)	-7.4535 (***) (2.8434)	-18.9746 (***) (4.0457)	-21.7516 (***) (5.2866)	-21.4740 (***) (5.3816)
Pseudos R <sup>2</sup>	0.1207	0.1222	0.1221	0.1640	0.1706	0.1840	0.2905	0.3337	0.3256
Log Likelihood	-116.7783	-116.5861	-116.5982	-111.0343	-110.1541	-108.3771	-56.2443	-52.8237	-53.4629
LR (chi2)	24.66 (***)	25.83 (***)	26.67 (***)	26.91 (***)	28.23 (***)	33.59 (***)	46.90 (***)	52.06 (***)	46.03 (***)
Correctly predicted (Adopters)	0.6774	0.6774	0.6774	0.8367	0.8710	0.9032	0.8750	0.9375	0.8750
Correctly predicted (Non-adopters)	0.7094	0.7229	0.7278	0.6170	0.6281	0.6355	0.8041	0.8198	0.8210
Correctly predicted (Full Sample)	0.7082	0.7212	0.7260	0.6251	0.6370	0.6453	0.8055	0.8221	0.8221
Number of cases	843	843	843	843	843	843	843	843	843

Robust standard errors are presented in brackets. Catalonian sample size = 201. Rest of Spain sample size = 642. \*, \*\*, \*\*\* = Significant at the 0.10, 0.05, and 0.01 level, respectively.

Table 4. Rare Events Logit Model: First differences in the probability to be involved in the Entrepreneurial Process

Symbol	Independent Variables	Entrepreneurial intention			Pre start-up entrepreneurial activity			Post start-up entrepreneurial activity		
		1	2	3	1	2	3	1	2	3
$\hat{\gamma}_1$	Rural Catalonia (1 if positive, 0 otherwise)		0.00867			0.01049			0.00544	
$\hat{\gamma}_2$	Gender (1 for man, 0 otherwise)	-0.00155	-0.00389	-0.00247	0.00845	0.00500	0.00500	0.00236	0.00025	0.00096
$\hat{\gamma}_3$	Primary studies	-0.02297	-0.02290	-0.02463	-0.00516	-0.00602	-0.00733	0.00736	0.00590	0.00630
$\hat{\gamma}_4$	Secondary studies	-0.00861	-0.00911	-0.00981	-0.00474	-0.00498	-0.00501	0.00395	0.00328	0.00410
$\hat{\gamma}_5$	Self-confidence in entrepreneurial skills	0.02728	0.02681	0.02802	0.06771	0.06588	0.06669	0.01141	0.00739	0.00899
$\hat{\gamma}_6$	Social fear for entrepreneurial failure	-0.01564	-0.01546	-0.01511	0.00148	0.00154	0.00569	-0.00226	-0.00124	-0.00064
$\hat{\gamma}_7$	Catalonia ´ Social fear for entrepreneurial failure			0.00138			-0.00562			-0.00089
$\hat{\gamma}_8$	Personnel knowledge of recent entrepreneur	0.03413	0.03362	0.03122	0.00793	0.00669	-0.00242	0.00464	0.00274	0.00063
$\hat{\gamma}_9$	Catalonia ´ Personnel knowledge of recent entrepreneur			0.01191			0.04163			0.01181
	Number of cases	843	843	843	843	843	843	843	843	843

(a) The first difference represents the change in the probability as a result of a discrete change from zero to one in the independent variable, i.e.  $\hat{\gamma}_x = \Pr(Y = 1|X = 1) - \Pr(Y = 1|X = 0)$ .  
 Catalanian sample size = 201. Rest of Spain sample size = 642.

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## Regional differences in the influence of Role-Models: Comparing the Entrepreneurial Process of Rural Catalonia

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### Abstract

El documento examina el impacto que tiene la presencia de recientes y exitosos emprendedores (Role-Model) sobre el proceso emprendedor en áreas rurales con una fuerte tradición emprendedora respecto de aquellas áreas rurales que no muestran dicha característica. Para alcanzar este objetivo se adopta un enfoque institucional y socio cultural hacia la creación de empresas, y se utiliza un modelo logit ajustado para eventos extraños sobre una base de datos española para el año 2003. La principal contribución del trabajo indica que la diferencia entre los niveles de actividad emprendedora en la España rural es en gran medida explicada por la presencia de modelos emprendedores que favorecen la actividad emprendedora en áreas rurales como Cataluña, una región que cuenta con una alta tradición emprendedora.

JEL classification: M13, B52, R58.

Keywords: Rural entrepreneurship, informal institutional factors, Role Model.

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