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## **SOCIAL FACTORS AND NEW VENTURE DECISIONS. AN ANALYSIS BASED ON THE STUDY OF COGNITIVE FACTORS\***

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## **Abstract**

The main goal of this study is to analyse the influence of social capital (the set of networks that influence individuals by interacting with them) and two cognitive characteristics in individuals (self-efficacy and fear of failure) on new venture decisions. A study was carried out on social capital and on cognitive factors with a view to drawing up a set of hypotheses allowing analysis of the relations between these concepts and the decision to set up a business initiative. The hypotheses were then tested on a sample of 28,888 individuals belonging to the Spanish working-age population drawn from the GEM 2009 report. The results indicate that, although both social and cognitive factors have a direct influence on new venture decisions, social factors also influence cognitive factors so that the latter act as mediating variables between social factors and the new venture decision.

## **Key words:**

Social capital; cognitive factors, new venture decision

## **JEL classification:**

L-26; M-13; C-83

# **SOCIAL FACTORS AND NEW VENTURE DECISIONS: AN ANALYSIS BASED ON THE STUDY OF COGNITIVE FACTORS**

## **INTRODUCTION**

Entrepreneurship can be broadly defined as the set of social networks and the cognitive factors an individual has which lead him or her, rather than others, to perceive opportunities and take them up. It has already been stated in the literature on business creation that perceiving an opportunity may spark a wide range of responses in the perceiver (Baron et al, 2005). Firstly, not all individuals perceive opportunities in the same way, if they perceive them at all, and of those that do perceive them, not everyone decides to take up such opportunities. It is for this reason that skill in identifying and taking up new business opportunities has been defined as an entrepreneurial skill (Ardichvili et al, 2003) and even as a competitive advantage (Álvarez et al, 2001).

While the impact of the decision to take up a business opportunity can be analysed from a more economic point of view, it is difficult to determine which factors influence this decision even though many authors have tried to shed light on this topic (Ostgaard et al, 1996; Baron et al, 2003; Liao et al, 2005; Decarolis et al, 2006). On the one hand, some studies carried out in recent years locate these factors in social relations, in the way they are built up and maintained (Baron et al, 2003), and some authors have even considered social relations to be an asset for firms that have them and know how to use them efficiently (Liao et al, 2005). On the other hand, other authors stress cognitive factors in potential entrepreneurs. Studies such as those by Bandura et al (1986) and Wood et al (1989) analyse these cognitive factors and how they interrelate with the environmental and social factors that influence and delimit the actions taken by different agents. In summary, business creation is considered to be the result of interaction between social networks and cognitive factors. As business opportunities increase in a social network, business creation will increase only if individuals are predisposed to create enterprises (Burt, 1992; De Carolis et al, 2006). So, cognitive factors can explain why social capital has a greater effect on business creation in some entrepreneurs than in others (De Carolis et al, 2006). Social Cognitive Theory (Bandura, 1986; Wood et al, 1989) considers that social environments play an important role in the formation of individual cognitive factors and, therefore, in the conduct of individuals. This approach supports the vision of entrepreneurship proposed by Venkataraman (1997) and Shane et al (2000) as “the nexus of two phenomena: the presence of lucrative opportunities and the presence of enterprising individuals”.

The main goal of this study is to analyse how social capital and cognitive factors (auto-efficacy and fear of failure) affect new venture decisions. The importance of these factors as determinants of business creation has been acknowledged in the literature (Kahneman et al, 1979; Bandura et al, 1986; Ellis, 2000; Decarolis et al, 2006; Keil et al, 2007; Patulny et al, 2007). However, this study makes two important contributions to the existing literature. Firstly, it helps explain why social capital may have a positive impact on some individuals and not on others when setting up a new business venture. Secondly, by using social cognitive theory (Wood et al, 1989), it helps increase knowledge on cognitive entrepreneurial factors by analysing how interaction between these factors and social factors influences the new venture decision.

With this aim, in section 2 we first review the literature on social capital, cognitive factors and decisions on taking up what is perceived as an opportunity. In section 3, the research method and the results obtained are described. Finally, the main conclusions are drawn, the limitations of the study are explained and some suggestions are made for future research.

## 1. THEORETICAL FRAMEWORK

### 1.1. Social capital and new venture decisions

In recent years, attention has been drawn, from different points of view, to the influence of certain assets of a social nature, such as networks of contacts, rules for reciprocity, values, cooperation and trust, on economic activities (Fukuyama, 1995; Barro, 1996; Putnam, 2000; Baumol, 2002; Guiso et al, 2004; North, 2005). The social assets that arise out of the stable relationships maintained by individuals, groups and organisations in society are usually identified by the concept of social capital (Bourdieu, 1986; Coleman, 1988, 1990; Putnam et al, 1993; Putnam, 2000). The term 'social capital' is now being widely used (Casson et al, 2007) to describe all the assets that facilitate social relations and economic exchanges (Grootaert et al, 2002).

This concept of social capital refers to the social networks and rules of reciprocity associated with them (Putnam, 2000, p. 9) and stems from the stable relationships of individuals, groups and organisations in society. Like physical capital or human capital, it is a production resource that facilitates cooperation by economic agents in achieving their shared objectives. While physical capital is reflected in equipment and facilities and human capital in training and experience, social capital is reflected in the strength of the network of contacts maintained by economic agents (Coleman, 1988). Social capital is accumulated by a process of investing valuable resources, especially time, in developing and strengthening social relationships (Lin, 2001). Investment in social capital generates economic returns which improve social relationships, facilitate access to information, stimulate cooperation and generate mutual trust.

Social capital is an asset that can be created and exploited at both individual and collective levels (Bowles et al, 2002). In a specific social context, individuals acquire social capital through deliberate actions and may use it to obtain economic returns. But the capacity for doing this depends on the type of social obligations, connections and networks available (Bourdieu, 1986).

The literature points to two types of social capital:

- *Bonding Social Capital*: This focuses on the group as the unit for analysis and covers relations within that group (Leana, 1999; Adler et al, 2002). This type of capital is generated between similar individuals (Byrne, 1971) who are linked by strong bonds allowing objectives shared by the group to be achieved.
- *Bridging Social Capital*: This focuses on the individual as the unit for analysis and studies individual social relationships and how such relationships can be used to obtain individual benefits. This approach aims to explain how individual success depends on the contacts and connections that social networks provide for individuals (Leana, 1999; Adler et al, 2002).

In the literature on entrepreneurship, bridging social capital predominates over bonding social capital because of its importance for business creation. Burt (1992, p. 57) suggests that social capital creates an advantage “in that social structures increase imperfect competition by creating business opportunities for some individuals and not for others”. Both the literature on business creation (Birley, 1985; Aldrich et al, 1986; Uzzi, 1996; Walker et al, 1997) and studies carried out from the point of view of social capital (Burt, 1992; Nahapiet et al, 1998; Tsai et al, 1998; Adler et al, 2002) emphasise the importance of connections and networks for establishing new businesses and for innovation in general.

So the prior literature indicates that for entrepreneurs with greater connections and social networks it is easier to find the resources they need to develop their business projects. For individuals having strong social links with the suppliers of the resources they need to set up a new business (such as other entrepreneurs), it is easier to take up any opportunities perceived (Aldrich et al, 1986). The available evidence leaves no room for doubt regarding the impact that informal social networks, which facilitate the funding of new business projects (*business angels*), may have for taking up opportunities (Shane et al, 2002). Such networks may be more efficient than formal legal structures for facilitating certain investments needed for setting up a business (Arrow, 1972). This is because of the trust generated in environments in which there is a high level of social capital, which helps reduce the risk perceived by individuals.

So social capital may have a positive influence on a new venture decision because it facilitates the acquisition of resources and the organisation of efforts for setting up the new business. Membership of social networks and relations of trust complement the efforts made by the potential entrepreneur to mobilise resources for putting the business idea into effect. We therefore pose the following hypothesis:

**H<sub>1</sub>:** Social capital has a positive influence on new venture decisions.

## **1.2 Cognitive characteristics and new venture decisions**

Cognitive characteristics are inherent in human beings because each individual will behave in a different way in response to a single stimulus. This generates “behavioural asymmetries”, which are fundamental in new venture decisions. The theoretical background to these characteristics has been laid down in Social Cognitive Theory (Wood et al, 1989) which relates cognitive characteristics to entrepreneurship. Therefore, and in line with the literature in this field, this study considers two cognitive characteristics which influence the new venture decision: self-efficacy and fear of failure.

### Self-efficacy:

Self-efficacy, understood as the judgement people make on whether they have the skills required to carry out a specific task and the belief that they are capable of using such skills to achieve the result they propose (Bandura, 1989) has been identified as one of the main cognitive factors affecting entrepreneurship (Scott et al, 1988; Chen et al, 1998; DeNoble et al, 1999; Segal et al, 2002). If a person feels in possession of such skills, he or she may consider setting up a venture (Krueger et al, 2000; Wilson et al, 2007) because self-efficacy affords the necessary impetus to potential entrepreneurs based on belief in their own capabilities. Krueger et al (2000) maintain that identifying

and taking up business opportunities depends on the individual's perception that the situation is controllable and positive because perception of self-efficacy is a substantial antecedent for recognising opportunities. Some research has been carried out relating self-efficacy to entrepreneurial intentions (Scott et al, 1988; Chen et al, 1998; DeNoble et al, 1999; Segal et al, 2002), so we pose the following hypothesis.

**H<sub>2</sub>:** Self-efficacy is positively related to new venture decisions.

#### Fear of failure:

Risk propensity (lack of fear of failure), or an individual's tendency to take risks, may affect the way in which individuals take decisions under conditions of uncertainty (Kahneman et al, 1979). Many studies have analysed the link between risk propensity and entrepreneurial behaviour (Brockhaus, 1980; Brockhaus et al, 1986; Palish et al, 1995; Busenitz et al, 1997) but without finding conclusive results. However, two recent meta-analyses on empirical studies which analyse the link between risk propensity and business creation reach the conclusion that, under certain circumstances, risk propensity is greater in entrepreneurs than in non-entrepreneurs (Stewart et al, 2001, 2004). So, individuals having a greater fear of failure, or less risk propensity, will be less entrepreneurial than those who have a greater tendency towards risk-taking. The latter will find it easier to take up any opportunities they have discovered. These ideas are covered by hypothesis H3:

**H<sub>3</sub>:** Fear of failure is negatively related to new venture decisions.

#### Cognitive characteristics as mediating variables between social capital and new venture decisions

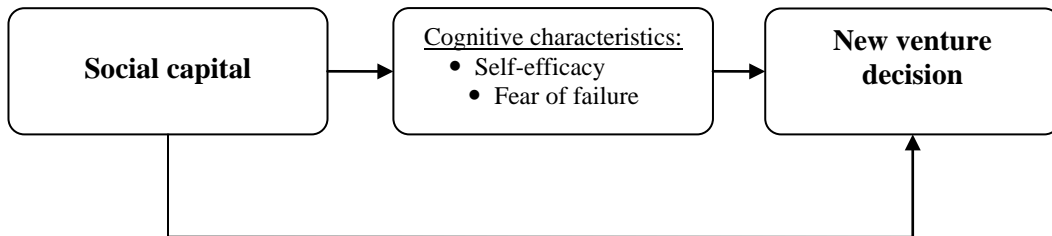
Membership of a social network or group may determine individual awareness (Moscovici, 1984). The opinions of individuals tend to be related to those of their closest contacts because people tend to relate with others who are similar to them (Burt, 1992). The theory of social information processing (Salancik et al, 1978) analyses the influence of social networks on the development of individual behaviour and attitudes. This theory emphasises the effects people have on other people they come into contact with. The theory of interpersonal attraction (Byrne, 1971) maintains that individuals with similar beliefs attract each other, thus increasing the set of attitudes and behaviour that they share. Both theories predict that individuals will have similar attitudes to those of the individuals with whom they interact.

Individuals' social relations can therefore determine their cognitive behaviour to the extent that people involved in close-knit social networks will tend to have a higher degree of self-efficacy and less risk aversion because they are aware that other individuals belonging to their same social group and, therefore, similar to them have been successful in setting up a business venture. Social networks therefore have a direct impact on individuals' self-efficacy and risk propensity. This idea, taken together with the comments made above allows us to establish that cognitive factors – in this case, self-efficacy and fear of failure – act as mediators between social capital and the new venture decision. This is laid down in hypotheses H<sub>4</sub> and H<sub>5</sub>. Finally, Figure 1 shows the research model proposed.

**H<sub>4</sub>:** Self-efficacy mediates the link between social networks and new venture decisions.

**H<sub>5</sub>:** Fear of failure mediates the link between social networks and new venture decisions.

**FIGURE 1. Model proposed**



## 2. METHODOLOGY

### 2.1. Data compilation

The above hypotheses were tested based on the GEM 2009 Spain report, which includes information on all the Spanish regions. This report took information from 3 sources – a survey of a representative sample of the Spanish working-age population, a survey of experts in different areas such as finance, government policies and education, and other secondary sources such as the World Bank, the International Monetary Fund and the BBVA Foundation.

For this specific study, information was taken from the first of the above sources, that is, the Spanish Working-Age Population Survey (Adult Population Survey). This survey was carried out by telephone, between April and June, covering a random sample of 28,888 persons (14,663 men and 14,225 women), representing the Spanish population aged between 18 and 64 (sample error  $\pm 0.58\%$ ; confidence level 95%). From this sample, the opinion of 1,473 active entrepreneurs (62.6% are men and 37.4% women) has been gained, thus guaranteeing that the estimates and cross data which may be made from this information will have a sample error equal to or less than  $\pm 5\%$ .

### 2.2. Description of the model and the variables

Based on the theoretical model in the above section, the empirical model used to analyse the factors that determine the discovery of opportunities was a logistic regression using forward stepwise selection, structured as follows:

$$NEWVENTURE = \beta_0 + \beta_1 SOCIALCAPITAL + \beta_2 SELFEFFICACY + \beta_3 FAILURE + \beta_4 GENDER + \beta_5 AGE + \varepsilon$$

Individuals' decisions to set up a business (NEWVENTURE) were measured on the basis of answers from the whole of the population to the question as to whether formalities had begun to set up a business or whether they had set one up but wages had



not yet been paid for more than three<sup>1</sup> months. This question was included in the GEM project APS questionnaire. Answers provided a dichotomous variable taking value 1 when the individual stated that formalities had begun or that the business had been set up but wages had not yet been paid for more than 3 months and 0 otherwise.

The independent variables approximating the factors that determine the new venture decision are as follows:

- Social capital. The answer to the question as to whether they knew someone who had set up a business undertaking over the last 2 years was taken as the measure of social capital (SOCIALCAPITAL). It is to be expected that having entrepreneurial people within one's social circuit implies that one is present in a network or social environment that facilitates the dissemination of information among its members (Singh, 2000), strengthens cooperation and trust, and reduces the probability of opportunistic behaviour, all of which facilitate the development of new entrepreneurial opportunities (Hills et al, 1997).
- Self-efficacy. This (SELFEFFICACY) was measured by answers to the question as to whether they considered they had the knowledge and skills needed to set up a business activity. It is to be expected that people who perceive that they have such skills will find it easier to set up an entrepreneurial initiative than others who do not feel this (Scott et al, 1988; Chen et al, 1998; DeNoble et al, 1999).
- Fear of failure. To measure this, people were asked if they considered that fear of failure affected their decision to set up new entrepreneurial activities (FAILURE). In this case, it is expected that people who are risk averse will be less likely to carry out entrepreneurial activities (Roth, 2001, 2004).

Finally, two control variables were included. The gender effect was controlled using a dichotomous variable taking value 1 for men and 2 for women (GENDER), and the age effect was controlled by a continuous variable for the Spanish working-age population (AGE). The descriptive statistics and correlations for all these variables are given in Tables 1 and 2 respectively.

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<sup>1</sup> The exact question was: "Have you begun the formalities to set up a business or have you set one up but have not yet paid wages for more than three months?"

**TABLE 1: Descriptive statistics**

Variable	Mean	Std. Dev.	Min.	Max.	N
NEWVENTURE	0.02	0.15	0.00	1.00	28,888
SOCIALCAPITAL	0.33	0.47	0.00	1.00	28,751
SELFEFFICACY	0.51	0.50	0.00	1.00	28,004
FAILURE	0.52	0.50	0.00	1.00	28,258
GENDER	1.49	0.50	1.00	2.00	28,888
AGE	39.98	12.63	18.00	64.00	28,865

**TABLE 3: Correlations**

	NEWVENTURE	SOCIALCAPITAL	SELFEFFICACY	FAILURE	GENDER	AGE
NEWVENTURE	1.000					
SOCIALCAPITAL		1.000				
SELFEFFICACY		0.219***	1.000			
FAILURE		-0.045***	-0.126***	1.000		
GENDER		-0.093***	-0.121***	0.075***	1.000	
AGE		-0.166***	-0.030***	-0.010	0.020***	1.000

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

### 3. RESULTS

The results obtained from the analysis of factors determining new venture decisions are given in Table 3, using the SPSS statistics package.

To test mediating links, the procedure followed was one proposed by Baron et al (1986) and accepted in the literature. According to these authors, the following steps should be taken:

1. The independent variable should significantly affect the dependent variable when the mediating variables (self-efficacy and risk propensity) are not included in the equation.
2. The mediating variables should significantly affect the dependent variable.
3. The independent variable should significantly affect the mediating variables.
4. The significant effect of the independent variable on the dependent variable should decrease when the mediating variables are added to the model.

Firstly, hypothesis 1 is verified because the coefficient for the variable that covers the possession of social capital by the population, SOCIALCAPITAL, is positive and statistically significant. Therefore, possession of social capital is positively related to the setting up of new business ventures. Having entrepreneurs in one's social circuit implies that one is present in a network or social environment that facilitates the dissemination of information among its members (Singh, 2000), strengthens cooperation and trust, and

reduces the probability of opportunistic behaviour, all of which facilitate the development of new entrepreneurial opportunities (Hills et al, 1997).

Secondly, the coefficient for the SELFEFFICACY variable is also positive and statistically significant. This result supports the second hypothesis, that is, that self-efficacy is positively related to the decision to set up a business. In other words, the greater the perception people have about whether or not they have the necessary knowledge and skills to carry out entrepreneurial activities, the more probable it is that they will actually set up a business (Scott et al, 1988; Chen et al, 1998; DeNoble et al, 1999).

The third of the hypotheses is also verified because the coefficient for the FAILURE variable was negative and statistically significant. We can therefore conclude that people who are afraid of failure, that is, are risk averse, are less likely to set up a business (Roth, 2001, 2004).

Hypotheses 4 and 5 consider the possibility that the above cognitive factors, that is, self-efficacy and fear of failure, act as mediating elements between the possession of social capital and the decision to set up a business. As shown in Models 4 and 5, the coefficient for the SOCIALCAPITAL variable is reduced, in comparison with Model 1, when the SELFEFFICACY and FAILURE variables are included in the model. It can therefore be concluded that both variables act as mediators between the possession of social capital and the decision to set up a business.

Finally, the control variables GENDER and AGE are statistically significant in all the models, indicating that it is young people, mostly men, who are most likely to set up a new business.

Regarding the indicators of the model's goodness of fit, the difference between the maximum verisimilitude function computed at the beginning and the end (final-2LL), which represents a fall in the estimation error once all the variables are introduced, follows a  $\chi^2$  distribution. This is used to test the null hypothesis that the improvement has been statistically equal to zero. The  $\chi^2$  values in all the models allow us to reject the null hypothesis. Thus, it can be concluded that the global explanatory value of the model is good and that the chosen set of independent variables makes an adequate discrimination between the Spanish persons who decide to set up a business and those who do not.

Moreover, measures similar to the coefficient for determining linear regression are proposed. Specifically, the two pseudo-R<sup>2</sup> measures usually used, though not without criticism, are the R<sup>2</sup> of Cox and Snell and the Nagelkerke R<sup>2</sup> coefficients which, in this case, reached values of 2.8-0.8% and 13.8-4%, respectively. This indicates that the logistic regression models estimated explain a fairly small percentage of the probability of setting up a business. This is reasonable, because each of the models estimated includes a very limited number of factors<sup>2</sup>.

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<sup>2</sup> In addition to the models presented, a saturated model including all the variables was estimated. In this case, the  $\chi^2$  value also allows rejection of the null hypothesis, and the Cox and Snell R<sup>2</sup> and Nagelkerke R<sup>2</sup> coefficients reached 3.2% and 15.6% respectively. These coefficients are still low, indicating that the probability that an adult individual will set up a new business depends on other factors in addition to those considered.

Table 4 covers the results that would be obtained if the mediating variables were to act as dependent variables. It shows that the independent variable in our original model (SOCIALCAPITAL) has a significant effect on SELFEFFICACY and FAILURE, so we can corroborate that another of the above-mentioned conditions is met.

**TABLE 3. Factors determining the new venture decision**

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Coefficient	Wald	Coefficient	Wald	Coefficient	Wald	Coefficient	Wald	Coefficient	Wald
<b>SOCIALCAPITAL</b>	1.119***	187.844					0.748***	82.329	1.087***	174.731
<b>SELFEFFICACY</b>			2.994***	262.558			2.840***	233.984		
<b>FAILURE</b>					-1.029***	138.212			-0.990***	127.008
<b>GENDER</b>	-0.341***	17.744	-0.240***	8.686	-0.364***	20.119	-0.188*	5.313	-0.264**	10.464
<b>AGE</b>	-0.013***	15.014	-0.022***	37.970	-0.020***	40.300	-0.017***	22.154	-0.014***	16.910
R <sup>2</sup> Cox and Snell	0.009		0.025		0.008		0.028		0.014	
R <sup>2</sup> Nagelkerke	0.046		0.124		0.040		0.138		0.071	
X <sup>2</sup>	264.727***		708.564***		225.674***		792.597***		405.848***	
Global percent of correct predictions	97.70%		97.60%		97.60%		97.60%		97.60%	

Note: \*\*\*, \*\*, \* = Significant at 99%, 95% and 90%, respectively.

**TABLE 4. Mediating relations**

	<b>Model 1 (Dependent variable: SELFEFFICACY)</b>		<b>Model 2 (Dependent variable: FAILURE)</b>	
	Coefficient	Wald	Coefficient	Wald
<b>SOCIALCAPITAL</b>	2.984***	260.762	-1.030***	138.722
<b>GENDER</b>	0.476***	383.213	0.295***	151.676
<b>AGE</b>	0.004***	14.340	-0.002*	5.592
R <sup>2</sup> Cox and Snell	0.037		0.011	
R <sup>2</sup> Nagelkerke	0.05		0.015	
X <sup>2</sup>	1063.715***		318.997***	
Global percent of correct predictions	57.00%		54.00%	

Note: \*\*\*, \*\*, \* = Significant at 99%, 95% and 90%, respectively.

## **CONCLUSIONS, LIMITATIONS AND FUTURE LINES OF RESEARCH**

The results of this study show that the link between Social Cognitive Theory (Wood et al, 1989) and the literature on business creation (Bull et al, 1993; Ellis, 2000; Adler et al, 2002; Decarolis et al, 2006) provides a basis for explaining the factors that influence a decision to set up a business. It has been shown that belonging to a social group will affect new venture decisions, because this social capital will influence the individual, giving ideas, offering support and helping to compare information, finally having a positive impact on the individual's decisions and perceptions of new opportunities (Ostgaard et al, 1996; Liao et al, 2005; Decarolis et al, 2006).

Regarding the link between self-efficacy and the decision to set up a business, the results show that self-efficacy has a positive influence on business creation in line with the results obtained in prior studies (Scott et al, 1988; Chen et al, 1998; DeNoble et al, 1999; Segal et al, 2002). Regarding fear of failure, the link is negative because fear of failure will have a negative effect on an individual's decision to set up a business (Busenitz et al, 1997; Shane et al, 2000).

Finally, the main contribution of this study is that it finds that cognitive factors (self-efficacy and fear of failure) act as mediating variables between social capital and the decision to set up a business. Based on this idea, it can be stated that the reason why an individual belongs to a specific social group can be found in that person's cognitive factors (Byrne, 1971). When a group of people having a set of standard cognitive factors comes together (Burt, 1992), a specific social group awareness might arise (Moscovici, 1984). It might help a person to belong to a specific social structure inside which information flows constantly as a result of the trust generated and in which, based on the individual's cognitive factors, in this case self-efficacy and fear of failure, that individual may be able to perceive more opportunities and reach the decision to take them up.

One of the limitations of this study is the difficulty of measuring the variables used, making it necessary to use proxy variables. This could be corrected by drawing up a made-to-measure questionnaire including a broader range of items related to these variables. But this alternative would lead to a loss of data because fewer individuals would participate in the research, so full evaluation would be necessary.

For the future, it would be interesting to study further the factors that determine business creation, especially the links between them. New variables could be included in the model to see how their influence and any interactions between them help to explain the phenomenon of business creation.

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