

# The New Venture Decision: An Analysis Based on the GEM Project Database\*

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## Abstract

The new venture decision is a crucial stage in the process of creating a new business and is influenced by a series of social, demographic, cultural and economic factors, amongst others. These factors have been the subject of several studies, though there is still no widely accepted agreement on exactly how they affect the decision to create a new enterprise. This study will provide evidence on which variables affect the new venture decision, as well as the extent of their influence based on the analysis of a sample of 7524 cases, using information obtained via the Global Entrepreneurship Monitor 2001 Project. At the same time, we provide evidence to show that there are differences in the way these variables affect new ventures born out of need or out of opportunity.

## Keywords

Entrepreneurship, business creation, entrepreneurial decision

## Introduction

During the last few decades, the phenomenon of entrepreneurship or “the business function” has gained unprecedented importance on a worldwide scale due to being regarded as a substantial source of new employment, innovation and economic growth (Audretsch, 2002; Reynolds, Levie and Autio, 1999; Veciana, 1999). Although there is still no complete consensus on the definition of this field of study, a large number of researchers coincide in the opinion that the creation of new enterprises is one of the principal outcomes of entrepreneurship.

The venture decision is a crucial stage in the process of creating a new business and is influenced by a series of social, demographic, cultural and economic factors, amongst others (Audretsch, 2002; Gartner, 1985; Shaper, 1984). These factors have been the subject of several studies, though there is still no widely accepted agreement on exactly how they affect the decision to create a new enterprise.

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Our aim is to shed light on which variables influence the decision to create an enterprise, and to what extent. In order to do this, we identified from among the variables included in the Global Entrepreneurship Monitor 2001 Project, those that, according to the literature used for research, have an impact on the process, to later go on to submit these variables to statistical contrast. We have also incorporated a segmentation of entrepreneurs according to their motivation for setting up a new business, as this could minimize the impact of certain factors in the new venture decision.

We will firstly present a theoretical review of the entrepreneurial decision as a process, taking Shapero's (1984) model of the entrepreneurial event as a reference, incorporating contributions from other authors such as Gnyawali and Fogel (1994), Krueger and Brazeal (1994) and Shane and Venkataraman (2000). Secondly we will put forward hypotheses related to the variables included within the framework of the GEM study and then present the methodology used for contrasting these hypotheses. We subsequently present the estimated regression models with the accompanying results and end with a discussion of the outcomes and the conclusions of the study.

## **Background**

From a microeconomic perspective, the first models that explain the entrepreneurial decision were based on the assumption that this decision is based solely on the willingness to accept/ aversion to risk so that, for a given wage scale, everyone would have the same attitude toward working on the payroll or assuming the entrepreneurial role and vice versa (Kihlstrom and Laffont, 1979). This model is largely considered to be unrealistic, as it considers everyone as "having the same aptitude" to function either as entrepreneur or employee (Veciana, 1999: 18). However, new microeconomic models on entrepreneurial behaviour include both objective and subjective variables such as gender, age, socioeconomic level, area of residence, perceptions towards risk and social attitudes toward the figure of the entrepreneur, amongst others (Ashcroft, Holden and Low, 2004).

From a psychological perspective, pioneering studies were aimed at determining personality traits that would separate entrepreneurs from non-entrepreneurs, as well as successful entrepreneurs from less successful ones (Gartner, 1985; Veciana, 1999). Although there are numerous empirical studies on this theme, the outcomes are contradictory and have been questioned not only because of their focus but also due to the methodology used, which has brought about a reduction in the number of studies on this topic in recent years (Veciana, 1999).

Later on, models were created on the entrepreneurial process that incorporated behavioural and situational factors (Gartner, 1985; Veciana, 1988). More recently, models of intention that focus on attitudes and the reasons behind them have been proposed as a more likely explanation for the entrepreneurial process (Gnyawali and Fogel, 1994; Shapero, 1984; Shapero and Sokol, 1982).

### ***The Entrepreneurial Decision as a Process***

The decision to start up a new enterprise is a process which is the fruit of two decisions: the decision to change the path of one's life and the decision to start up a new venture (Shapero, 1984). The decision to alter the path of one's life comes about as a result of personal change generated by some kind of "triggering event" which can be negative (job loss, immigration, feelings of frustration in the present job, etc) or positive (detection of an attractive business opportunity) (Veciana, 1988). The decision to start up a new business depends on the perception of the viability of the venture and the desirability of becoming an entrepreneur as a means of creating a new life.

The perception of viability is related to the existence of favourable conditions for starting a business project and the degree to which each individual believes they have the capacity to create business ventures. This is defined as the sum of technical and business (administrative) capabilities required to initiate and administer an enterprise (Gnyawali and Fogel, 1994). This perception is closely related to that of "self-sufficiency", which is the perception that one possesses the ability to carry out a specific job or a particular set of tasks (Bandura, 1986; Krueger and Brazeal, 1994). The level of self-sufficiency not only affects the decision to create a new enterprise but also can be a determining factor in the success or failure of the new organization (Bird, 1988). For example, excessive self-sufficiency can lead to the wrong decisions being made during the creation process and in the subsequent organizational development.

The perception of desirability refers to how attractive the prospect seems of setting up in business as a life choice and is the consequence of the individual's position in a cultural, socioeconomic, family, educational and peer group matrix (Shapero, 1984). In this way, "social norms" become a crucial element that will influence the individual's perception of whether or not it is desirable to become an entrepreneur.

The "willingness to act" is another indispensable element in the process of the new venture decision, because, if the individual is not predisposed to this type of challenge, they will not be likely to act, despite the difficulties that other life choices may present (Shapero, 1984). The willingness to act is related to psychological characteristics and to the behaviour of entrepreneurs. The psychological focus on personality traits indicates that certain characteristics such as a notable need for achievement (McClelland and Winter, 1969), the ability to innovate (Schumpeter, 1934), the locus of internal control (Shapero, 1984) and the propensity to take risks (Brockhaus and Horwitz, 1986) are common in entrepreneurs. However, it is important to point out that these characteristics can also be found in individuals that are not entrepreneurs and it cannot thus be regarded as an exclusively entrepreneurial characteristic (Gartner, 1985).

Another fundamental element in the process of starting up a new venture is the existence of business opportunities (Gnyawali and Fogel, 1994), which must first be spotted by individuals who then assess them and eventually decide whether to exploit them or not. According to Kirzner (1979), only certain sections of the population will discover an opportunity. Shane and Venkataraman (2000) suggest

that there are two categories of factors that influence the chances of one or another person discovering particular opportunities: 1) the possession of previous, or inside, information that is necessary for identifying a business opportunity, 2) the cognitive characteristics necessary to assess these opportunities and subsequently make a decision on whether to exploit them.

There are diverse factors that affect the entrepreneurial decision. Some authors have carried out extensive reviews of the literature that indicate which factors have been studied and how they influence this process (both positively and negatively).

The Global Entrepreneurship Monitor Project (GEM) included some of these variables in its survey of the adult population, carried out in 2001. We will now present the analysis of these variables from a theoretical perspective, with the incorporation of their relation to the individual's main reason for wanting to create their own business, on the assumption that this is the result of a "triggering event" (Shapiro, 1984) that "pushes" the individual into deciding to start up their own company. This may be an adverse situation such as job loss or a deterioration in the role given to them in their firm, or it may be the simple detection of a sound business opportunity. In this sense, we shall consider the "entrepreneur born of necessity" as someone who's main motive for creating a business is the existence of adverse circumstances that allow this person no other choice than to follow this path, and the "entrepreneur born out of opportunity" as someone who decides to change the course of their lives when they come across a sufficiently attractive business opportunity (Reynolds, Camp, Bygrave, Autio and Hay, 2001). By incorporating this segmentation, it is our aim to observe whether differences exist in the way some variables influence the entrepreneurial decision when entrepreneurs are analyzed according to whether they are born out of necessity or opportunity.

### ***The Perception of Business Opportunities***

The first factor that interests us is related to one of the key elements in the venture-creating decision process: the perception of business opportunities. Kirzner (1979) describes the businessperson as someone who is capable of "staying alert". Only certain people are capable of spotting previously undiscovered business opportunities, without the need to go out and look for them. Thus, when groups of entrepreneurs and non-entrepreneurs are compared, it is only to be expected that the former group will perceive business opportunities where the second group does not, and consequently they do not make the decision to create a new business. We can now establish the following hypothesis:

*H1*: The perception of the existence of sound business opportunities has a positive influence on the decision to start up a new business.

### ***Aversion to Risk***

Aversion or a propensity to take risks, defined as the general tendency to take or avoid risks, is another factor related to the entrepreneurial decision that has been

frequently been studied in the relevant literature (Cooper and Gimeno-Gascón, 1992; Gartner, 1985; Gnyawali and Fogel, 1994; Veciana, 1999). When assessing the theme of risk, it is necessary to analyze two sides of the development of this concept: the level of perceived risk in the creation of any new firm and the perceived likelihood of failure if the business is unsuccessful.

Traditionally, theories on characteristics have proposed that entrepreneurs have a greater propensity to assume risks than non-entrepreneurs. However, results from empirical research have been contradictory, although it has been generally accepted that entrepreneurs assume moderate risks and do not significantly differ from managers or even the rest of the population (Brockhaus, 1980; Gartner, 1985; Pinillos, 2003). Consequently:

*H2:* An aversion to risk on the part of an individual has a negative effect on the decision to start up a new business.

Given that in the GEM Project, aversion to risk was evaluated through the perception of fear of failure, future expectations on the country's business conditions and expectations of the family's financial future, it is necessary to subdivide this general hypothesis into three subhypotheses:

*H2.1:* Fear of failure has a negative influence on the decision to start up a new business.

*H2.2:* Pessimistic expectations on the family's financial future have a negative influence on the decision to create a new firm.

*H2.3:* Pessimistic expectations on future business conditions of the country of origin have a negative influence on the entrepreneurial decision

In addition to this, we consider that the perception of risk levels on the part of people who create their own business out of necessity is different to that of entrepreneurs born out of opportunity. In businesspeople who are motivated by necessity, aversion to risk will have less of an influence on the decision to start up a new business, as this factor has less of a bearing when the entrepreneur has no choice but to follow that route. On the other hand, for those that have become entrepreneurs due to opportunity, aversion to risk will exert greater influence on the entrepreneurial decision as they have the freedom to "choose" and can thus weigh up the risk that each choice implies.

*H2a:* Aversion to risk has less influence on the decision to start a new business in the group of entrepreneurs born out of necessity than in the group of entrepreneurs born out of opportunity.

As with hypothesis H2, in this case it is necessary to put forward and assess a series of subhypotheses to verify the variables included in the GEM Project on the question of aversion to risk-taking:

*H2a.1:* Fear of failure has less influence on the new venture decision in the group of entrepreneurs born out of need than in the case of the entrepreneurs born out of opportunity.

*H2a.2:* Future financial expectations for the family have less influence on the new venture decision in the group of entrepreneurs born out of necessity than the group born out of opportunity.

*H2a.3:* Expectations on the country's future economic business conditions have less influence on the decision to create a new business in the group of entrepreneurs born out of necessity than those born out of opportunity.

### ***Relations with Other Entrepreneurs***

One of the factors particularly related to the perception of the viability of creating a new business is the existence of entrepreneurial role models in the individual's social surroundings. Shapero and Sokol (1982) point out those individuals that come from families where the parents are company owners are more likely to create new businesses, as they see that the creation of new enterprise may well be a viable professional option. Moreover, the presence of experienced entrepreneurs and successful role models in a community or country sends a message to other potential entrepreneurs that creating a business is an "attractive" career option (Gnyawali and Fogel, 1994). This assumption allows us to formulate the following hypothesis:

*H3:* The existence of entrepreneurial role models in the individual's social surroundings positively influences the decision to start up a business.

However, we consider that differences do exist, in this case, between entrepreneurs through necessity and entrepreneurs through opportunity because the existence of other entrepreneurs will enhance the perception of the viability of this alternative for both groups. We can consequently put forward the following hypothesis:

*H3a:* The existence of entrepreneurs in an individual's social surroundings equally affects the group of entrepreneurs through necessity and that of entrepreneurs through opportunity.

### ***The Ability to Create a New Business***

As we showed in the model representing the process of the new venture decision, the fact that individuals see themselves as capable of carrying out this task is a key element in making the decision to start up a new enterprise, and is related to the perception of "self-sufficiency" (Krueger and Brazeal, 1994). Therefore, the new venture decision will be influenced by the individual's perception of whether they perceive that they possess the necessary skills to initiate this task, regardless of the

type of triggering event that motivates this decision. Consequently, someone who feels they do not have the necessary skills, even if they are in a situation of extreme necessity, will look for any other possible alternative before choosing to create their own business, as they do not regard themselves as capable of taking on a task of such magnitude. We can consequently form the following hypotheses:

*H4:* The existence of entrepreneurs in an individual's social surroundings equally affects the group of entrepreneurs through necessity and that of entrepreneurs through opportunity.

*H4a:* The perception of having the necessary skills, knowledge and experience necessary to establish a new firm has a positive influence on the decision to create a new business, regardless of whether it is due to necessity or opportunity.

### **Academic Level**

One factor that has been the focus of a great deal of literature is the influence of academic level in the decision to start up a new business. There is contradictory evidence on the extent to which education can affect a person's decision to become an entrepreneur. While Storey (1994) and Yusuf (1995) discovered that the level of education had a positive effect, Lee and Tsang (2001), and Stuart and Abetti(1990) suggest that it has a negative effect. It is our view that education has a positive effect on the new venture decision as the current business climate demands a greater level of preparation and training to be competitive in today's market.

With regard to the groups of entrepreneurs through need or opportunity, we consider there to be no difference in the impact of academic level and the entrepreneurial decision, although we admit that it may affect the choice of the type of firm being established as, for example, someone with a university degree in engineering might opt to establish their firm in that area of knowledge, while those without this level of education might be less inclined to set up a business of this type. We can thus formulate the following hypotheses:

*H5:* A higher academic level has a positive influence on the decision to start up a new business.

*H5a:* A higher academic level has a positive influence on the decision to start up a new business, regardless of whether they create their own business for reasons of *necessity or opportunity*.

### **Level of Family Income**

The level of the family's income and its relation to the new venture decision has been analyzed from different perspectives. In our particular case, we consider that this variable may have an influence on the availability of funding for the business project, a topic considered to be one of the major obstacles to creating

new businesses. (Audretsch, 2002; Gartner, 1985; Veciana, 1999). From this viewpoint, some kind of relation between a high level of income and the decision to start up a business is to be expected, as individuals from this segment can count on resources to implement the firm's needs, which for someone with a smaller income would prove difficult to achieve and this, therefore, lowers their perception of the viability of creating a new business (Singh and Lucas, 2005). This allows us to propose the following hypothesis:

*H6*: A high level of income has a positive influence on the decision to start up a new business.

When comparing entrepreneurs born of necessity or opportunity, it might be that the influence of the level of income on the new venture decision is less in the case of entrepreneurs through necessity in the sense that, were they to find themselves in an adverse situation, the individual may be inclined to create their own firm, regardless of their level of income, by looking for other sources of finance. This outlook coincides with the findings of Evans and Leighton (1989), who found that workers with low incomes are forced to look for alternatives of self-employment when they are excluded from the traditional job market. We can thus propose the following hypothesis:

*H6a*: The level of income has less influence on the group of entrepreneurs born out of necessity than on the group of entrepreneurs born out of opportunity.

### **Occupation**

Occupation is another variable that has been related in the literature to the decision to start up a new business, although there is no consensus on the extent of its influence.

Certain studies on self-employment suggest that the unemployed are more likely to take the entrepreneurial decision than those that have a steady job (Audrestch, 2002; Evans and Leighton, 1990). Equally, other empirical studies have shown that people in full-time work are less convinced by the idea of starting up their own business than the unemployed, part-time workers or students. However, relations between occupation and the new venture decision were found to be tenuous (Davidsson, 1995); this contradicts what was discovered by Reynolds, Carter, Gartner and Greence (2004), who suggest that people in full or part-time work are more likely to set up their own firms than the unemployed or those employed in other categories or work. In our view, we consider that unemployment has a positive effect on the entrepreneurial decision, as the jobless may consider this alternative as a new occupation and therefore:

*H7*: Unemployment has a positive effect on the individual's decision to create a new business.



When comparing the groupings of necessity and opportunity, we believe that, for the group of entrepreneurs born out of necessity, unemployment will have a greater effect on the decision to start up a new business, as it leaves few or no other alternatives. Whereas, in the case of the group born out of opportunity, independently of what they do for a living, they will take the decision to create a new enterprise moved by the desire to exploit an attractive opportunity. Therefore:

*H7a.* Unemployment has a greater influence on the group of entrepreneurs born out of necessity than on the group born out of opportunity.

## Research

The data used in this analysis is taken from the survey on the adult carried out in 2001 by the Global Entrepreneurship Monitor (GEM), the results of which are available to the general public and includes the participation of 29 different countries. A representative sample of at least 2000 people was taken in each of the participating countries and a total of 74000 completed surveys were collected during the months of June and July, 2001.

The survey of the adult population was made up of a series of questions that allowed the sample to be divided up into groups according to whether they were involved or not in new venture activities, or were company owners or business angels. Individuals could thus be classified into the following groups:

- **Emerging entrepreneurs:** This group is made up of individuals who had actively attempted to set up a business in the last 12 months, future proprietors and company owners who had been paying salaries for three months or less.
- **New businesspeople:** those that had been owners/managers of a new, operative firm and had been paying salaries or profits for a maximum of 42 months.
- **Non-entrepreneurs:** those that neither indicated involvement in any of the aforementioned activities, nor had been business owners for more than 42 working months.

At the same time, it is possible to identify individuals involved in the processes of business creation according to their main motive for becoming an entrepreneur or company owner, either through “necessity” or “opportunity”. The group of businesspeople born out of necessity is made up of people who have been forced to create a new firm due to adverse circumstances as an alternative answer to their economic problems, whereas the group born out of opportunity is made up of those who have been mainly motivated by the desire to take advantage of a sound business opportunity at a particular moment

## **Sample**

A sample of cases from the GEM Project survey of the adult population was analyzed in order to obtain a suitable, balanced model. The inclusion of all the cases of non-entrepreneurs (62893) and emerging entrepreneurs (3762) in the regression allowed us to obtain an “apparently” close fit to the prediction for the decision to start up a new business, obtaining levels of 95%. However, if we observe carefully the detailed coefficients for cases in each of the categories included in the analysis, it can be seen that the model lacks validity, as 100% precision can be obtained in cases where the right decision was made NOT to create a new business (as there is a high frequency), and 0% for the decision to set up a new business, which may lead to incorrect conclusions being drawn on the topic of study.

The final sample, obtained via sampling not based on probability for convenience, includes all the cases of emerging entrepreneurs contained in the database (3.762) and an equal number of cases of non-entrepreneurs, giving us a total of 7524 cases. The cases of non-entrepreneurs were chosen randomly in relation to the numbers of emerging entrepreneurs registered for each country. Once the regression model was calculated, it was applied to the remaining 59131 cases that were not included to prove the validity of the model.

## **Statistical Analysis**

The chosen analytical technique for examining the study of relations between dependent and independent variables was logistical regression, which was carried out using the statistical program SPSS 11.0. This is the most appropriate technique for assessing the proposed hypotheses as it allows us to predict and explain a dependent categorical binary variable via a group of independent covariables, amongst which not only qualitative (categorical) but also quantitative variables can be included, as in our case (Ferrán, 1996). We calculated three regression models using this technique. The first with the emerging entrepreneurs as a reference and the remaining two correspond to the groups of emerging entrepreneurs born out of necessity and opportunity, respectively

The supposed existence of multicollinearity, which is a basic ingredient for the application of logistical regression, was assessed through the calculation of the values of tolerance levels and the inflation levels of variance (FIV) of the variables included. The results obtained confirm the absence of multicollinearity, as tolerance level values of 0,541 and 0,951 were obtained, along with a maximum FIV value of 1,849, which is far below the minimum value required for the application of this technique.

The calculated correlations (Table 1) show values close to zero, which suggests that there is no linear relation between the independent variables or that the degree of association between them is extremely low.

**Table 1.** Correlations between independent variables. The Kendall Tau-b Coefficient

	1	2	3	4	5	6	7	8
1. Perceives opportunity	1							
2. Knows an entrepreneur	0,238*	1						
3. Possess the skills to create	0,278*	0,305*	1					
4. Fear of failure	0,079*	0,060*	0,183*	1				
5. Family future	0,237*	0,152*	0,197*	0,119*	1			
6. Country's future	0,150*	0,034*	0,037*	0,045*	0,288*	1		
7. Level of income	0,050*	0,176*	0,134*	0,067*	0,118*	0,019	1	
8. Academic level	0,073*	0,157*	0,102*	0,063*	0,097*	0,035*	0,238*	1
9. Occupation	-0,104*	-0,155*	-0,216*	-0,045*	-0,095*	0,008	-0,188*	-0,112*

\*The correlation is significant at 0.01 (bilateral).

### ***Dependent and Independent Variables***

The dependent variable in our study is the decision to start up a new business, measured via the variable “*suboanwc*”, where 0 indicates the decision NOT to create a business and 1 is the decision to start a new venture.

The independent variables included in our analysis are:

- *Relations with entrepreneurs (knowentq)*: This variable is measured using the question “*You know someone personally who started a business in the past 2 years?*”, and indicates whether an individual is acquainted with an entrepreneur or not. This variable is related to the perception of the viability of creating a business.
- *Perception of opportunities (oportq)*: This variable, which is also a dichotomy, tells us directly whether the individual does or doesn’t perceive the existence of business opportunities in the local area through the question “*Will there be sound opportunities for starting a new business in your local area in the next six months?*”
- *Perception of skills, knowledge and experience (suskill)*: This variable indicates whether the individual sees themselves as having the ability to create a new business or not. This perception was gauged in the questionnaire by asking: “*Do you possess the knowledge, skills and experience to set up a new business?*” The answer is related to self-confidence, although it should be mentioned that this is not a complete measurement of this extremely complex item, which may be influenced by overconfidence on the part of the individual and by other factors.
- *Fear of failure (fearfaiq)*: This variable shows whether an individual is afraid of failing in the creation of a new business. It can be considered as an approximate measurement of the aversion to risk. The question related to this item is

“*Would the fear of failure prevent you from starting up a new business?*” It is important to point out that overconfidence can reduce the fear of failure to a certain extent.

- *Perception of the family’s future economy (famfutuq)*: this variable allows the assessment of the individual’s perception of the family’s financial future, with the question: “*Looking to the future, do you think that in a year’s time, you and your family will be better off, worse or the same as you are today, financially?*” This is related to the individual’s aversion/willingness to take risks, as, at the moment of taking the entrepreneurial decision, they weigh up the effect of the decision on the family’s economic welfare.
- *Perception of the country’s economic conditions (ctrfutuq)*: This variable is measured via the question: “*Within a year, would you expect the country’s business conditions to be better, worse or the same as they are at the moment?*” The perception of business conditions is related to the individual’s aversion to risk-taking as it can be assumed that if business conditions are expected to be unsatisfactory, there might not be any risky investments and this will consequently restrict the founding of new firms

Besides the aforementioned variables, the GEM study gathered information on the level of income, occupation and academic level, all of which we have included in our analysis and have the following categories:

- *Level of income (gemhhinc)*: this variable indicates the interviewee’s level of income: high, medium or low.
- *Occupation (gemwork)*: this variable has the following categories: (1) part-time and/or full-time work; (2) only part-time; (3) retired; (4) housewife/husband; (5) student and (6) unemployed
- *Academic level: (gemeduc)*: This variable presents the following categories: (1) none; (2) a degree of secondary education; (3) completed secondary education; (4) postsecondary and (5) postgraduate.

## Results

The results obtained from the study allow us to contribute evidence on the influence of the different variables included in the models of the creation of new businesses using the three estimated models. In addition, the validation of Model 1 shows an extremely good fit which leads us to consider it as a reference for the estimation of the likelihood of whether an individual will decide to set up their own firm or not.

**Model 1: Emerging Entrepreneurs**

Model 1, estimated for the dependent variable *suboanw* has a total prediction capacity of 74.7% and can correctly predict a negative decision for 72.4% and a positive decision for 77% of the cases studied. This first model includes eight of the nine independent variables, with a level of significativity of less than or equal to 0.05. The results of this model are shown in Table 2.

**Table 2.** Estimated regression models\*

Variables	Model 1. Emerging entrepreneurs			Model 2. Emerging entrepreneurs through necessity			Model 3. Emerging entrepreneurs through opportunity		
	Coef.	Standard error	Wald	Coef.	Standard error	Wald	Coef.	Standard error	Wald
Perceives opportunity (NO)	-0,773	0,099	61,185	-0,764	0,193	15,631	-0,922	0,120	59,323
Knows an entrepreneur (NO)	-0,873	0,095	84,104	-1,017	0,187	29,712	-0,884	0,116	57,825
Possesses the skills to create (NO)	-1,414	0,099	205,484	-1,169	0,186	39,582	-1,602	0,124	167,592
Fear of failure (YES)	-0,380	0,100	14,415	-0,614	0,185	11,063	-0,331	0,126	6,882
Perception of the family's future			9,829						13,779
Worse	-0,235	0,161	2,140				-0,614	0,214	8,203
The same	-0,309	0,099	9,659				-0,378	0,122	9,646
Level of income			16,913			27,612			
Low	0,405	0,129	9,848	1,239	0,249	24,839			
Medium	-0,063	0,111	0,323	0,422	0,226	3,499			
Academic Level			24,135			14,155			22,880
Some secondary education	0,424	0,295	2,063	0,439	0,708	0,385	0,365	0,335	1,190
Completed secondary education	0,923	0,290	10,166	1,047	0,707	2,192	0,890	0,325	7,474
Post-secondary education	0,775	0,287	7,303	0,332	0,708	0,220	0,981	0,323	9,243
Occupation			118,583			26,477			93,420
Full or part-time work	0,839	0,133	39,733	0,518	0,232	5,006	0,965	0,170	32,130
Part-time work	0,893	0,173	26,527	0,724	0,322	5,045	1,055	0,219	23,155
Retired	-1,011	0,238	18,017	-0,941	0,423	4,942	-1,082	0,307	12,376
Home	0,349	0,219	2,538	0,425	0,354	1,440	0,126	0,318	0,157
Student	-0,327	0,260	1,580	-0,874	0,469	3,466	-0,038	0,325	0,014
Constant	0,526	0,309	2,894	0,489	0,736	0,440	0,471	0,350	1,809
Diagnostic of the model's fit									
-2 log of the verosimilarity	2874,725			826,744			1,880,377		
Cox and Snell R squared	0,288			0,256			0,339		
Nagelkerke R squared	0,383			0,341			0,452		
Chi-squared	930,978			224,345			800,311		
Total % correct	74,7			73,5			76,8		
% incorrect cases	72,4			71,8			75,8		
% correct cases	77,0			75,1			77,9		
Total cases included	2,746			618			1,934		

\*Level of significativity  $\leq 0.05$

This model suggests that the new venture decision is negatively affected by not knowing other entrepreneurs, the non-perception of opportunities and the perception that the individual does not possess the skills, knowledge and experience to create a new firm, all of which is analogous to what can be found in the literature and allows us to confirm hypotheses H1, H3 and H4.

With regard to the variables associated with aversion to taking risks, its negative influence of fear of failure on the decision to create a new business and the perceptions on the family's future finances are confirmed, thus supporting H2.1 and H.2.2. However, perceptions on the country's future economic conditions have indicated that this is not an important factor for entrepreneurs and so hypothesis H.2.3 remains unconfirmed. This may be caused by the difference between the figure of the entrepreneur and the investor, who assumes different criteria when taking investment decisions such as the economic conditions of the country concerned, while for entrepreneurs, other factors such as those analyzed herein exert greater influence over their decision.

Academic level has also shown itself to be influential in the decision to create a new business, indicating that lower levels of education positively and significantly affect the new venture decision, thus making it impossible to accept hypothesis H5. These results are consistent with the findings of Lee and Tsang (2001) and those of Stuart and Abetti (1990). Nevertheless, it should be underlined that the influence of this variable on the likelihood of creating a new business has a "U" shape, meaning that people who complete a secondary education are more likely to set up their own company than those who did not finish secondary education or those that have postsecondary studies.

The level of income significantly affects the entrepreneurial decision; however, it is not possible to draw conclusions on the direction of this influence and it is therefore not possible to confirm hypothesis 6. Evidence suggests that lower levels of income positively affect the decision to set up a business, thus confirming the results of Evans and Leighton (1989) and contradicting those of Singh and Lucas (2005); insofar as medium levels of income negatively affect the new venture decision.

Finally, with regard to the impact of the occupation variable, the results suggest that, on the one hand, full-time or part-time workers are more likely to decide to create their own business than the unemployed, which coincides with the work Reynolds et al. (2004); while people who are retired, housewives/househusbands and students are less likely to create a new business than the unemployed. Consequently, it is not possible to confirm hypothesis H7, which proposes that the unemployed are more likely to decide to set up their own businesses.

### ***Emerging Entrepreneurs Grouped by Necessity and Opportunity***

Models 2 and 3, which show emerging entrepreneurs born out of necessity and opportunity respectively, give prediction levels of 73.5% and 76.8%, differing slightly from the model on emerging entrepreneurs (74.7%). Moreover, it can be observed that segmentation improves the fit of the models, which can be seen by detailing the indicators of maximum verosimilarity, the  $R^2$ , and the Chi-squared

statistic, as shown in Table 2. The new models allow us to contrast the proposed hypotheses with regard to the existence of differences between these groups of emerging entrepreneurs.

Firstly, the results shown in Table 2 suggest that, both for entrepreneurs born out of necessity and those resulting from opportunity, the *non*-perception of business opportunities, not having other entrepreneurs in their social circle and the non-perception of skills has a negative impact on the decision to set up in business, as it does in the general model, which allows us to confirm hypotheses H3a and H4a. In addition, it is important to point out that the variable with the most influence over the decision to start a new business is found in this group and corresponds to the perception of whether they possess the skills, knowledge and experience necessary to start up a venture, which clearly shows the importance of the perception of self-sufficiency in the initial stages of the process of creating a new business.

With regard to the variables related to aversion to risk-taking, the following results can be observed. Firstly, a significant, negative influence can be detected in both, due to fear of failure. However, if we examine the coefficients of the variable in both models, a greater negative influence of the fear of failure can be seen in the group of emerging entrepreneurs born out of necessity (-0.614) than in the case of the group of emerging entrepreneurs through opportunity (-0.331). It is therefore not possible to accept hypothesis H2a.1. Secondly, it can be observed that, in the group of entrepreneurs through necessity, the perception of the family's future finances is not a significant variable, whilst in the group of entrepreneurs born out of opportunity, the perception and prospect of worsening or simply maintaining the family's financial conditions will have a significantly negative effect on the decision to start up a new business. This shows less of an influence on the future expectations of the family's financial conditions in the group of entrepreneurs through necessity and allows us to accept hypothesis H2a.2. Thirdly, perceptions of the country's economic business conditions does not appear to have any kind of effect on either of the groups, as occurred in the general model, which leads us to reject hypothesis H2a.3.

Academic level in the decision to create a new venture shows the same behaviour as in Model 1 for both groups, which leads us to accept hypothesis H5a. However, the existence of differences in the coefficients obtained in the models for entrepreneurs through necessity and opportunity should be underlined, which indicates that a particular subcategory can have a greater impact on the decision to start up a new enterprise for one group or the other. An example of this is the coefficients corresponding to the postsecondary academic level, for which the model of entrepreneurs through necessity has a coefficient of 0.332, while for the group of entrepreneurs through opportunity, the coefficient has a value of 0.981, which indicates that this academic level has a greater influence over the latter group.

On the other hand, the level of income variable is not significant in the model of entrepreneurs born out of opportunity, while it is significant and has a positive influence on the entrepreneurs through necessity, which means it is not possible to accept hypothesis H6a. Evidence suggests that entrepreneurs through opportunity look for different financing alternatives that allow them to carry through their

**Table 3.** Results of the contrast of hypotheses

Hypotheses	Result
<i>H1.</i> The perception of the existence of sound business opportunities has a positive influence on the decision to start up a new business.	<i>Accepted</i>
<i>H2.</i> An aversion to risk on the part of an individual has a negative effect on the decision to start up a new business.	<i>Accepted</i>
<i>H2.1.</i> Fear of failure has a negative influence on the decision to start up a new business	<i>Accepted</i>
<i>H2.2.</i> Pessimistic expectations on the family's financial future have a negative influence on the decision to create a new firm.	<i>Accepted</i>
<i>H2.3.</i> Pessimistic expectations on future business conditions of the country of origin have a negative influence on the entrepreneurial decision	<i>Rejected</i>
<i>H2a.</i> Aversion to risk has less influence on the decision to start a new business in the group of entrepreneurs born out of necessity than in the group of entrepreneurs born out of opportunity.	<i>Rejected</i>
<i>H2a.1.</i> Fear of failure has less influence on the new venture decision in the group of entrepreneurs born out of need than in the case of the entrepreneurs born out of opportunity.	<i>Rejected</i>
<i>H2a.2.</i> Future financial expectations for the family have less influence on the new venture decision in the group of entrepreneurs born through necessity than the group born out of opportunity.	<i>Accepted</i>
<i>H2a.3.</i> Expectations on the country's future economic business conditions have less influence on the decision to create a new business in the group of entrepreneurs born out of necessity than those born out of opportunity.	<i>Rejected</i>
<i>H3.</i> The existence of entrepreneurial role models in the individual's social surroundings positively influences the decision to start up a business.	<i>Accepted</i>
<i>H3a.</i> The existence of entrepreneurs in an individual's social surroundings equally affects the group of entrepreneurs through necessity and that of entrepreneurs through opportunity.	<i>Accepted</i>
<i>H4.</i> The existence of entrepreneurs in an individual's social surroundings equally affects the group of entrepreneurs through necessity and that of entrepreneurs through opportunity.	<i>Accepted</i>
<i>H4a.</i> The perception of having the necessary skills, knowledge and experience necessary to establish a new firm has a positive influence on the decision to create a new business, regardless of whether it is due to necessity or opportunity.	<i>Accepted</i>
<i>H5.</i> A higher academic level has a positive influence on the decision to start up a new business.	<i>Rejected</i>
<i>H5a.</i> A higher academic level has a positive influence on the decision to start up a new business, regardless of whether they create their own business for reasons of necessity or opportunity.	<i>Rejected</i>
<i>H6.</i> A high level of income has a positive influence on the decision to start up a new business.	<i>Rejected</i>
<i>H6a.</i> The level of income has less influence on the group of entrepreneurs born out of necessity than on the group of entrepreneurs born out of opportunity.	<i>Rejected</i>
<i>H7.</i> Unemployment has a positive effect on the individual's decision to create a new business.	<i>Rejected</i>
<i>H7a.</i> Unemployment has a greater influence on the group of entrepreneurs born out of necessity than on the group born out of opportunity.	<i>Rejected</i>

business project because they perceive the existence of worthwhile opportunity. In the case of entrepreneurs through necessity, this variable has greater influence, probably because, bearing in mind their limited level of income, they see the creation of a business as an alternative to solving their situation. This goes some way to explaining why the results suggest that a low or medium income positively affects the decision to start up a new firm.



Finally, when analyzing the occupation variable, it can be observed that that the direction of influence in the two categories is the same, i.e. full and/or part-time work and working at home has a positive and significant influence on the decision to create a new business, while retirement and full-time study have a significant and negative effect on this decision. On the other hand, if we look at the coefficients of these variables, they indicate a greater influence on the decision to start up a new business over the group born out of opportunity than that of necessity. For this reason, hypothesis H7a should be rejected. Table 3 shows a synthesis of the results obtained.

**Validation of Model 1**

For the validation of Model 1, which corresponds to emerging entrepreneurs, the model was applied to 59.131 cases from the sample, excluding the cases of new and veteran business owners.

By applying the model to the validation sample, the precision levels for prediction was obtained in 72.1% of the 21.621 valid cases that involved non-entrepreneurs. The total sample, which includes the sample from model 1 and the validation sample, obtained 72.36% of correct predictions, with a total of 72,08% correct predictions on who would make the decision not to set up in business and 77% correct predictions on who would start up a new business in the time period analyzed (Table 4).

It is our understanding that the usefulness of these types of models lies precisely in reaching a correct prediction on who will decide to start a new business and, at least, that the prediction percentages should be balanced with regard to the options of deciding whether to create or not.

**Table 4.** Predictive capacity of the regression model on the new venture decision

		Predicted		
		Will NOT decide to create a new business	WILL decide to create a new business	Percentage of correct predictions
Observed	Did NOT decide to create a new business	16.556	6.411	72,08%
	DID decide to create a new business	322	1078	77%
	Percentage of correct predictions			72,36%
Data of the samples used			No. of initial cases	No. of valid cases
Sample for Model 1			7.524	2.746
Validation sample			59.131	21.621
Total GEM ample			66.655	24.367

## Conclusions

The analysis carried out clearly shows the importance of variables that have been identified in the literature as being crucial to the entrepreneurial decision to create a new venture, such as the perception of business opportunities, knowing people who have decided to embark on a business project, the perception that they have the necessary skills to take on the task of creating a new firm, all of which have a significant and positive effect on the entrepreneurial decision, thus increasing the likelihood of such an event.

We have also been able to verify the negative influence of the fear of failure on the decision to start up in business, a variable which is fundamental when analyzing the topic of the entrepreneur's aversion to risk. At the same, it can be observed that entrepreneurs give special importance to financial expectations for the future of the family when it comes to taking the decision to create a new venture, to the extent that an adverse situation can inhibit the decision to start up a business. On the other hand, the variable related to expectations on the future of the country show little significant influence over the decision to set up in business, a result that contradicts the proposals laid down in traditional literature, where this parameter is an important element at the moment of taking investment decisions. One explanation for this might lie in the fact that the entrepreneur is not always the main investor in the venture; it may be that adverse business circumstances make rounding up the necessary capital to set up the firm difficult, but that this does not become an unsurpassable obstacle. Another possible explanation is that emerging entrepreneurs have already taken the decision to create the new firm, and so this parameter may have ceased to be so important. However, deeper analysis is necessary to verify this aspect.

In addition to this, we have found that a higher level of income has a negative effect on the new venture decision, and that the different occupations included in the study have a differing amount of influence on the decision to start up a new business. Therefore, it was established that people in full or part-time work are more likely to create a new firm than the unemployed, students or retired people.

It is also necessary to underline the existence of certain differences in the influence of variables such as the family's future financial expectations and the level of income when the sample is segmented into entrepreneurs through opportunity and necessity. This suggests that segmentation of entrepreneurs into those born out of opportunity and necessity may be an interesting avenue to follow in order to understand how these groups face up to the task of creating a new business, as it is likely that the processes are not identical. It could aid us in designing suitable mechanisms to support both entrepreneurs that set up a business through necessity to help them to overcome an adverse situation, as well as the group of entrepreneurs born out of opportunity, by fomenting a more proactive and not a reactive attitude amongst the general population towards the creation of new business, which may occur more often in the case of entrepreneurs through necessity.

The variables we have just quantitatively described have great explanatory value with regard to the creation of new business when they are incorporated into

a regression model such as the one we have calculated, reaching 72.1% of correct predictions on new venture decisions taken by individuals from a wide variety of countries.

If the sample is segmented by countries, and an independent model is calculated for each one, a great deal of variability can be observed in the variables included here and their values, though the rate of correct predictions does not overly differ, oscillating between 68.6% and 84.7%, giving higher values in countries with a smaller number of valid cases. Due to this fact, the global model and its level of precision is a reliable indicator of the validity of the data and leads us to the question of the search for new variables that are yet to be incorporated into the theoretical model and the GEM surveys. These variables could contribute to a greater explanatory capacity of the new venture decision.

The estimated regression models in the present study are intended to be used as a tool that allows us to predict, through certain characteristics, whether an individual is more or less likely to create a new business, always taking a population of entrepreneurs and non-entrepreneurs as a reference. However, the differences observed between the models when entrepreneurs are segmented into groups of those born out of necessity and opportunity suggest that it is important to incorporate this and other types of segmentation into research on the business function, with the aim of achieving a deeper understanding of this phenomenon. It is insufficient to divide the population into groups of entrepreneurs and non-entrepreneurs, it is also necessary to “*divide the world according to what we suspect might be the key parameters of variation between entrepreneurs and then go on to examine why some individuals that present certain variables or characteristics decide to become business owners or not*” (Sarasvathy, 2004, p. 712).

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