

Institutional and economic determinants of the perception of opportunities and entrepreneurial intention

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ABSTRACT: This paper aims to identify the institutional and economic factors that influence the perception of business opportunities, and the latter's influence on entrepreneurial intention. We use an institutional approach for the Spanish Autonomous Regions for the period 2004-2010, based on the data available in the regional GEM reports, supplemented by data from the INE (Instituto Nacional de Estadística - Spanish National Institute of Statistics). By applying a structural equation model, we observed that the perception of abilities (self-efficacy) positively and significantly affects both the perception of opportunities and entrepreneurial intention, and that the perception of opportunities affects entrepreneurial intention.

JEL Classification: L26.

Keywords: entrepreneurship; business creation.

Determinantes institucionales y económicos de la percepción de oportunidades y de la intención emprendedora

RESUMEN: El presente trabajo pretende identificar los factores institucionales y económicos que inciden en la percepción de oportunidades de negocio, así como de ésta en la intención emprendedora. Se utiliza un enfoque institucional a nivel de las Comunidades Autónomas españolas en el periodo 2004-2010, en base a los datos disponibles en los informes GEM a nivel regional, complementados con datos obtenidos del INE. Aplicando un modelo de ecuaciones estructurales, se observa que la percepción de capacidades (autoeficacia) incide positiva y significativamente tanto sobre la percepción de oportunidades como sobre la intención emprendedora.

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Palabras clave: emprendimiento; creación de empresas.

1. Introduction

In order for new business initiatives to emerge, there must be certain factors that have a positive effect on entrepreneurial activity, *i. e.* which are conducive to the creation of new businesses. There have been three main approaches in the research undertaken in this area in recent decades (Álvarez and Urbano, 2012): 1) the *economic approach*, which argues that the creation of new businesses is due to purely economic factors (Audretsch and Thurik, 2001; Audretsch and Keilbach, 2004, Parker, 2004; Wennekers *et al.*, 2005); 2) the *psychological approach*, which only considers the individual psychological traits of individuals as determinants in the emergence of entrepreneurs (Carsrud and Johnson, 1989; Stewart *et al.*, 1999; Baron, 2000), and 3) the *sociological or institutional approach*, according to which sociocultural factors in the environment determine individuals' decisions to become entrepreneurs (Shapiro and Sokol 1982; Aldrich and Zimmer, 1986; Berger, 1991; Veciana, 1999; Busenitz *et al.*, 2000; Steyaert and Katz, 2004; Manolova *et al.*, 2008; Gómez-Haro and Salmerón-Gómez, 2011).

This paper analyzes the impact on the perception of business opportunities of various factors in the economic and institutional context, and the impact of this perception and the perception of abilities (self-efficacy) on entrepreneurial intention, based on the data available in the GEM reports, for the Spanish Autonomous regions (excluding the autonomous cities of Ceuta and Melilla) in the period 2004-2010, supplemented with data from the National Statistics Institute (INE). We thereby aim to obtain a better understanding of the economic and institutional aspects that influence entrepreneurial intention among the Spanish population at a regional level. The results obtained in the research, which are of a markedly exploratory and predictive nature, contribute to progress in the analysis of the environmental factors that shape perceptions of business opportunities, perceptions of individuals' own abilities for entrepreneurship, and the factors in these perceptions shaping intentions to create new businesses.

2. Economic and institutional factors determining entrepreneurial intention

The act of creating a business entails planned behaviour that can be predicted based on the intentions presented by the individual at a given time (Krueger *et al.*, 2000). Entrepreneurial intention can be defined as «the state of mind that directs at-

tention, expertise and action towards a business concept» (Bird, 1988: 442); *i. e.* it explains individuals' thoughts and actions as regards their willingness or intention to create a new business. The study by Carayannis *et al.* (2003) observed that macro-economic, sociocultural and politico-legal environmental factors (including the presence or absence of active institutional policies for business creation) have a major impact on entrepreneurial intention.

Of the three approaches (psychological, economic, institutional), in this paper we mainly use the institutional approach (North, 1990) applied to an analysis of the factors affecting entrepreneurial intention (Thornton *et al.*, 2011; Urbano, 2006; Veciana and Urbano, 2008, among others). However, some economic variables are also considered, like those included in the GEM model (Hernández Mogollón, 2012). Many studies show that the institutional approach is the most useful for analyzing the phenomenon of entrepreneurship (Gnyawali and Fogel, 1994; Vaillant and Lafuente, 2007, among others). Within this institutional framework, Gnyawali and Fogel (1994) consider five dimensions that determine entrepreneurial activity: *a*) government policies and procedures (the actions by which governments seek to influence the mechanisms and regulation of the market so that it operates efficiently); *b*) social conditions (favourable attitudes towards entrepreneurship and the existence of successful models of reference) and economic conditions (aspects such as economic growth, diversity of economic activity, unemployment rate, inflation rate, etc.); *c*) entrepreneurial knowledge and skills (the technical skills necessary to start a new business, acquired through business management training); *d*) financial assistance for entrepreneurship (financing facilities for starting the new business), and *e*) non-financial assistance (advice on conducting market research, preparation of the business plan, access to contacts and social networks). Shane and Venkataraman (2000) corroborate this approach by developing a model based on business opportunities, which considers the need to introduce the economic and institutional characteristics of markets into the conceptual framework.

One of the factors that is most heavily emphasized by the institutional approach as a determinant factor in the development of entrepreneurial intention is individuals' *confidence in their own knowledge and entrepreneurial skills*. Self-confidence is defined as an individual's belief in their personal ability to organize and execute a project or a specific set of tasks that are necessary to achieve certain goals or intended outcomes, which in this case is the creation of a business. Self-confidence or the perception of one's own abilities for entrepreneurship has been theoretically and empirically related to the phenomenon of the entrepreneurial process, as a factor that encourages individuals to be entrepreneurial (Boyd and Vozikis, 1994; Krueger and Brazeal, 1994; Chen *et al.*, 1998; Burke *et al.*, 2002; Arenius and Minniti, 2005; McGee *et al.*, 2009). Some authors claim that an individual makes the decision to become an entrepreneur depending on their assessment of their skills (Arenius and Minniti, 2005). Individuals who have the most confidence in their own abilities have the most entrepreneurial intentions, while people lacking confidence in their abilities do not create businesses (Krueger and Brazeal, 1994; Arenius and Minniti, 2005; Wilson *et al.*, 2007). Accordingly, we propose the following hypothesis:

H1: *Individuals' perception of skills or confidence in their own knowledge and entrepreneurial abilities (self-efficacy) positively affects individuals' entrepreneurial intention.*

An important line of research in the field of entrepreneurship focuses on the connection between entrepreneurs and their *perception of their skills* for enterprise, and the identification of valuable business opportunities (Eckhardt and Shane, 2003; Shane and Venkataraman, 2000; Venkataraman, 1997). The identification and selection of suitable opportunities for creating new businesses is therefore the most important skill an entrepreneur can possess in terms of being able to succeed. An individual can only start a new business initiative if they recognise that there is a business opportunity capable of generating profits, and for this to be possible, the individual must have the cognitive properties that enable this assessment to be made (Shane and Venkataraman, 2000). Some research studies have shown that certain characteristics of individuals are related to the successful identification of opportunities (Ardichvili *et al.*, 2003); these characteristics include their level of optimism, understood as confidence in their self-efficacy for entrepreneurship, which leads the individual to see opportunities rather than threats in a given situation (Shane and Venkataraman, 2000). In other words, self-efficacy (confidence in the perception of the individual's own abilities) is considered a determinant factor in the ability to identify and evaluate business opportunities. This leads us to our next hypothesis:

H2: *The individual's perception of skills or self-confidence in their own knowledge and entrepreneurial skills (self-efficacy) positively affects the perception of business opportunities.*

Furthermore, the *perception of business opportunities* is directly related to entrepreneurial intention. One of the conclusions of the study by Arenius and Minniti (2005) is that the perceived ability to identify business opportunities is directly and positively correlated with the desire or intention to start a new business project. According to Roure *et al.* (2007), the identification of suitable business opportunities is an important and essential skill that the aspiring entrepreneur must possess, without which the intention to create a business is unlikely to emerge. In their study, Koellinger *et al.* (2007) identify the perception of business opportunities as the decisive event in entrepreneurial intention. Davidsson and Honig (2003) state that higher quality human capital is better at identifying business opportunities and successfully exploiting them. However, individuals' judgment of their ability to identify business opportunities has also been identified as one of the main cognitive factors affecting the entrepreneurial spirit or intentions (Baughn *et al.*, 2006). This means that if an individual feels that he/she possesses these skills, he/she may consider starting a new business initiative (Krueger *et al.*, 2000). This is the evidence based on which we set out the following hypothesis:

H3: *The perception of business opportunities has a positive effect on individuals' entrepreneurial intention.*

One of the most critical factors affecting the entrepreneurial process is the *ease of access to financial resources*. According to Levie and Autio (2008), financing is

recognized as the most important regulator of the allocation of efforts in entrepreneurial initiatives. Meanwhile, Leibenstein (1968) noted that the sophistication of credit systems encourages financing for entrepreneurial projects. Financing difficulties encountered by entrepreneurs are therefore regularly cited as a barrier to the creation of new businesses (Volery *et al.*, 1997; Kouriloff, 2000; Robertson *et al.*, 2003; Choo and Wong, 2006); as the lack of initial capital, the high cost of private financing, and the obvious difficulty with finding external resources, generally forces entrepreneurs to resort to public funding, through grants and/or low interest loans (Urbano, 2006). In short, the ease of access to sources of financing should be considered as a structural factor that influences entrepreneurial intention, which leads us to propose the following hypothesis:

H4: *Ease of access to sources of financing positively affects entrepreneurial intention.*

The institutional literature on entrepreneurship places particular emphasis on the role of the government as a key factor affecting the perception of opportunities, which can be broken down into three major aspects. First, the *government policies* that affect the entrepreneurial process, which is the interest shown by government bodies in entrepreneurship; or, like those defined by Lundström and Stevenson (2001:18) as «governments should focus their effort on creating a culture that validates and promotes entrepreneurship throughout society and develops a capacity within the population to recognize and pursue opportunity». Levie and Autio (2008) argue that government policy is a key determinant factor in the perception of the entrepreneurial opportunity. In fact, there is a general consensus that entrepreneurship is a phenomenon that can be addressed by policymakers, and that increased awareness and attention from policymakers should be positively associated with the allocation of efforts towards entrepreneurship (Audretsch *et al.*, 2007). This opinion was shared by Leibenstein (1968), who recommended that government policy should focus on improving market efficiency and providing an environment that responded to motivated entrepreneurs. It is thus suggested that the government should concern itself with entrepreneurs when designing and implementing policies (Levie and Autio, 2008). This allows us to set out the following hypothesis:

H5: *Government policy has a positive effect on the perception of business opportunities.*

Second, *regulation and legislation* related to entrepreneurship is considered part of the government's work. Kirzner (1985) showed that entry and exit barriers inhibit the entrepreneurial process. Government regulation, seen in terms of the bureaucratic aspects related to procedures for the creation of businesses, is commonly cited as a strong entry barrier that discourages the perception of opportunities and the entrepreneurial process (Van Stel *et al.*, 2007; Grilo and Irigoyen, 2006; Klapper *et al.*, 2006). This means that excessive regulation, high taxes and labour market rigidities tend to combine as major obstacles to business creation (Choo and Wong, 2006; Klapper *et al.*, 2006). For Verheul *et al.* (2001), one of the main policies that the government can promote, based on the demand for entrepreneurial activity, is one designed to

increase or promote the development of new business opportunities for potential entrepreneurs by the deregulation of certain specific sectors. Based on the above, we set out the following hypothesis:

H6: *Government regulation has a negative effect on the perception of business opportunities.*

The third aspect related to government action is *programmes fostering entrepreneurship*. Leibenstein (1968) recognized the crucial importance of fostering the entrepreneurial spirit; this could be undertaken by the government by implementing mentoring programmes and promoting professional services for entrepreneurs (Fischer and Reuber, 2003; Clarysse and Bruneel, 2007). Governments can facilitate the identification of business opportunities and the entrepreneurial process by offsetting entrepreneurs' shortcomings in their resources and abilities, through programmes of subsidies and financial aid, training programmes, providing information and advice, etc. (Dahles, 2005; Keuschnigg and Nielsen, 2004; Lorenzo *et al.*, 2008). These programmes reduce transaction costs in business creation (Shane, 2002) and improve the human capital of potential entrepreneurs (Fayolle, 2000; Delmar and Shane, 2003). This means that entrepreneurs can identify new valuable business opportunities more easily, because there is a strong tendency by public bodies to design measures to encourage entrepreneurship, improve the entrepreneurial climate and create a more innovative and creative society that takes advantage of opportunities in the market (Gómez-Haro and Salmerón-Gómez, 2011). In other words, public incentives are a factor considered by the entrepreneur at the start of any activity, especially in order to detect an opportunity in the market or to have an innovative business vision (Belso, 2004). Based on the above, we set out the following hypothesis:

H7: *Government programmes promoting entrepreneurship have a positive effect on the perception of business opportunities.*

Another key factor is *entrepreneurship education and training*. This is the process in which individuals acquire knowledge, skills, attitudes and values related to the creation and consolidation of businesses. As pointed out by Gómez *et al.* (2007), in Spain, training in aspects of business management and business creation at the various levels of education has to date been rather limited, which may negatively affect the rate of entrepreneurial activity. Indeed, as noted by Levie and Autio (2008), education and training in entrepreneurship is one of the most widely used means of encouraging entrepreneurial activity, because they are positively associated with expectations for growth of new businesses as a result of the improvement in the level of perception of business opportunities. As a result, specific training in entrepreneurship: *a*) improves the provision of individuals' instrumental skills for starting a new business (Honig, 2004; Wilson *et al.*, 2007), and *b*) improves individuals' cognitive ability to identify and assess business opportunities (Detienne and Chandler, 2004). Acs *et al.* (2009) state that the knowledge possessed by entrepreneurs, and especially the knowledge that they are able to generate, enables them to identify new business opportunities, and this depends on the training the individual concerned has received. This leads us to the following hypothesis:

H8: *More education and training in entrepreneurship positively affects the perception of business opportunities.*

Market dynamics refers to the level of changes taking place in the market targeted by the new company, *i. e.* the set of structural characteristics in the sectorial environment in which competition between businesses takes place. Thus, if the new activity is aimed at sector in which a great deal of changes are taking place, this may be the opportunity to find a niche or a good business opportunity, which will promote the creation of businesses; furthermore, the fewer the barriers to entry and exit, the greater the opportunities for finding a niche in which to develop a new business (Levie and Autio, 2008). According to Rumelt (1987), changes in the competitive environment create business opportunities, *i. e.* the more dynamic the market the entrepreneur is seeking to enter, the greater their perception of opportunities. The hypothesis related to this aspect is that:

H9: *A higher level of market dynamics positively affects the perception of business opportunities.*

Turning to economic factors, we first need to examine the *GDP per capita*. An increase in per capita income leads to higher levels of entrepreneurship, as the population's higher income level affects demand and therefore business opportunities. The research by Wennekers *et al.* (2002) considers per capita income as an economic predictor for start-up businesses, and Uhlaner and Thurik (2007) found that per capita income is a determinant for entrepreneurial activity. Levie and Autio (2008) included GDP per capita in their study as a determinant factor in the perception of business opportunities. Consequently, this gives us:

H10: *A higher GDP per capita positively affects the perception of business opportunities.*

The *regional unemployment rate* may influence the perception of business opportunities, due to the fact that the increase in unemployment leads to an increase in entrepreneurship out of necessity; although a high level of unemployment may also be linked to a situation of economic depression that makes the idea of creating a new company unattractive (Uhlaner and Thurik, 2007). According to Audrestch (2002), there is a negative relationship between unemployment and entrepreneurial activity; this is because at times of economic recession, with a drastic reduction in demand, there is a reduction in the perception of business opportunities. However, a long-term unemployment changes transforms this relationship from negative to positive by making self-employment a necessity (Evans and Leighton, 1990). There is therefore no agreement in the literature on the sign of the relationship between the unemployment rate and the perception of opportunities. We believe that this relationship must be negative, since although a higher unemployment rate may lead to an increased perception of business opportunities among entrepreneurs due to necessity, we believe that the negative effect of a decline in demand will prevail, leading to a reduced perception of business opportunities. It is therefore possible to set out the following hypothesis:

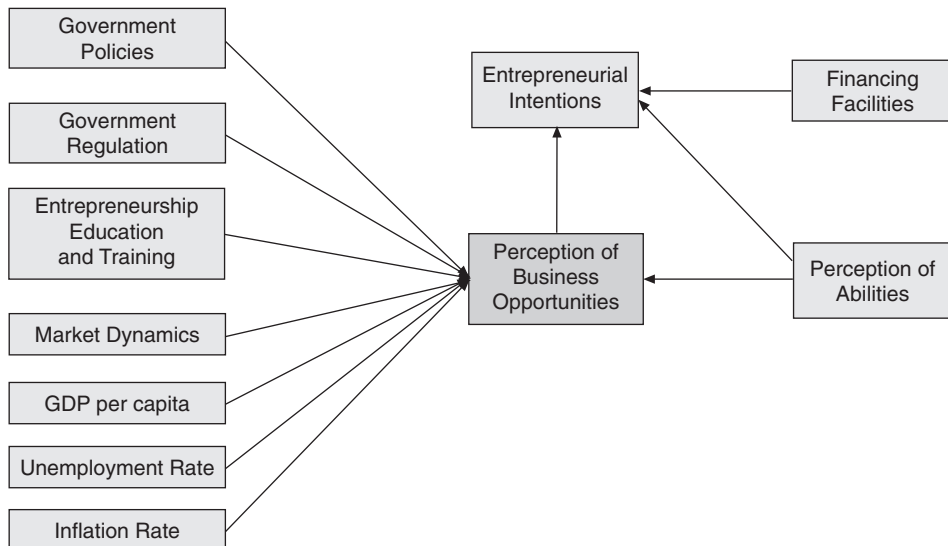
H11: *A higher unemployment rate negatively affects the perception of business opportunities.*

Another interesting economic factor is the *inflation rate*. According to Shapiro (1978) and Gibb and Ritchie (1982), a rise in inflation leads to higher levels of entrepreneurship, because of its impact on business opportunities for various products or services based on their relative prices. However, according to Georgiou (2009), inflation increases businesses' wage costs and erodes the purchasing power of consumers, which reduces the perception of valuable business opportunities among entrepreneurs. In other words, inflation increases the population's income inequality and reduces the reward entrepreneurship, becoming an obstacle to entrepreneurship (Perotti and Volpin, 2004). For Singh and DeNoble (2003), high inflation reduces access to capital due to higher borrowing costs; and as such inflation reduces the likelihood of entrepreneurship. There is therefore no clear position regarding the impact of inflation on the perception of business opportunities, but we tend to think that its effect must be positive, which is why we set out the following hypothesis:

H12: *A higher inflation rate positively affects the perception of business opportunities.*

Figure 1 shows the model to be analyzed, specifying the relationships between the different variables considered which underpin the hypotheses formulated.

Figure 1. Analysis model



3. Methodology

3.1. Data sources

The data for the empirical study have been obtained from two sources. First, we obtained the main indicators for entrepreneurship from the reports available from the GEM study of 17 Spanish autonomous regions (except the autonomous cities of Ceuta and Melilla) for the period 2004-2010, for both the results of the adult population survey (APS) and the consultation of the panel of experts (NES). These are complemented to the economic factors considered using the data from the INE (Instituto Nacional de Estadística - Spanish National Institute of Statistics). The variables obtained as mean values at a regional and annual level from the adult population survey (APS) in the GEM study, measured as a percentage of total population, are: FUTSUP (Entrepreneurial Intention), OPPORT (Perceived Business Opportunities), SUSKIL (Perception Capacity). The variables obtained as mean values of the experts' opinion (NES) consulted at a regional and annual in the GEM study, measured on a 5-point Likert scale, are: ki_a_sum (Financing Facilities), ki_b_su1 (Government Policies), ki_b_su2 (Government Regulation), ki_c_sum (Government Programmes), ki_d_su2 (Entrepreneurship Education and Training), ki_g_su1 (Market Dynamics). Finally, the INE provided data for the variables for each autonomous region and year: GDP per capita, Unemployment Rate and Inflation Rate.

Because the GEM reports did not report on the level of Spanish autonomous regions with any regularity until 2004¹, we chose this year as the starting point for data collection. However, because the various autonomous regions were gradually included in the GEM, data are not available for all of them in the early years of the period analyzed. As such, there were only 103 observations available for our empirical study, when the total population would be 119. As a result, working at a confidence level of 95%, and assuming the hypothesis of maximum uncertainty, the sampling error ranges between ± 0.025 and ± 0.06 , depending on whether or not the population size is known. Table 1 presents the mean values, standard deviation and correlation coefficients between the variables considered in the study carried out.

3.2. Method of estimation

Structural equation models allow the statistical relationship between variables to be analyzed, considering the simultaneity of regression equations, where the same variable can take the role of an independent variable in some regressions and a dependent variable in others. In structural equation models, the approach based on variances or *Partial Least Squares* (PLS) is a technique that has been the subject of

¹ For a discussion of the evolution of the GEM project in Spain and how its network of regional teams operates, see De la Vega *et al.* (2007).

Table 1. Mean, standard deviation and correlations between variables

Variable	Mean	Standard Deviation	Correlation															
			1	2	3	4	5	6	7	8	9	10	11	12				
1. Entrepreneurial Intention	6.13	1.95	1															
2. Perception of Business Opportunities	25.77	8.94	0.281**	1														
3. Perception of Entrepreneurial Skills	46.69	6.74	0.282**	0.247*	1													
4. Facilities Access Financing	2.49	0.39	0.122	0.316**	-0.031	1												
5. Government Policy	2.75	0.33	0.130	0.286**	-0.041	0.542**	1											
6. Government Regulation	2.71	0.35	0.190	0.405**	0.104	0.589**	0.336**	1										
7. Government Programmes	3.08	0.34	0.027	0.219*	0.022	0.570**	0.658**	0.638**	1									
8. Entrepreneurship Education and Training	2.72	0.23	0.215*	0.172	0.069	-0.022	0.185	0.380**	0.335**	1								
9. Market Dynamics	2.29	0.28	0.037	-0.403**	-0.059	-0.088	0.012	-0.038	0.030	-0.028	1							
10. Regional GDP per capita	22,242.99	4,480.13	0.045	-0.151	0.048	0.242*	-0.087	0.141	0.150	-0.184	-0.076	1						
11. Regional Unemployment Rate	11.94	5.56	-0.069	-0.446**	0.018	-0.560**	-0.197*	-0.469**	-0.375**	-0.086	0.402**	-0.458**	1					
12. Regional Inflation Rate	2.35	1.92	0.228*	0.455**	0.042	0.345**	0.133	0.333**	0.143	0.066	-0.052	0.069	-0.428**	1				

* p < 0.05

** p < 0.01

increasing interest and use among researchers in recent years (Fornell, 1982; Barclays *et al.*, 1995; Hulland, 1999; Haenlein and Kaplan, 2004). Unlike covariance-based models (CBM), PLS estimates do not imply a statistical model and therefore avoid the need to make assumptions about the distribution of the variables (Fornell and Bookstein, 1982). Moreover, according to Johansson and Yip (1994), as each structural sequence in the causal subsystem is estimated separately, very small sample sizes can be accepted. As stated by Barroso *et al.* (2007), following Chin *et al.* (2003) the objective of PLS modeling is to predict dependent variables, which is why PLS is better suited to predictive applications and theory development (exploratory analysis), although it can also be used to confirm the theory (confirmatory analysis). Structural equation models have also been widely used in the social and behavioural sciences in recent decades, including the application of the PLS technique in the study of entrepreneurship. These include some recent research, including the studies by Lanero (2011), who analyzes an explanatory model of entrepreneurial intention among university students; the study by Etchebarne *et al.* (2010), who analyze the relationship between companies' entrepreneurial orientation and their export performance, and the study by Zapico *et al.* (2008) which examines the effect of motivation due to entrepreneurs' self-employment on entrepreneurial intention.

Because the number of observations in our study is relatively small, with variables with an unknown distribution (an absence of normality), and because the study was carried out on a distinctly exploratory and predictive basis, we used the PLS technique because we believed that it is best suited to the characteristics of the data and the research approach. The program SmartPLS 2.0 (Ringle *et al.*, 2005) was used for the estimates.

4. Results

The PLS estimation of the structural model is shown in table 2. The significance of the estimated structural coefficients was performed using a *bootstrap* approach (Chin, 1998) with 900 subsamples from the original sample size. The explanatory power of the model is evaluated through the explained variance (value of R^2) of the dependent variables, where the model accounts for 13.1% of the variance in entrepreneurial intention and 57.7% of the perception of business opportunities; these are both higher than the minimum required level of 10% suggested by Falk and Miller (1992). Following Chin and Newsted (1999), this approach was complemented by the Stone-Geisser test for predictive relevance (Stone, 1974; Geisser, 1975), which presented a positive Q^2 statistic for all dependent variables, showing evidence of predictive relevance.

As for the relationship between perceived skills and entrepreneurial intention (H1), the estimated parameter is clearly significant ($\beta = 0.23$; $p < 0.01$), and as such this hypothesis is acceptable. The relationship between perceived skills and perceived business opportunities (H2) also presents a significant parameter, albeit at a lower

Table 2. Hypothesis confirmation

<i>Hypothesis</i>	<i>Standardized b</i>	<i>t-statistic (Bootstrap) g. l. = 102</i>
H1. Perception of skills → Entrepreneurial intention	0.2339 ***	3.0031
H2. Perception of skills → Perception of Opportunities	0.2308 *	1.8975
H3. Perception of opportunities → Entrepreneurial intention	0.2032 **	2.2349
H4. Financing facilities → Entrepreneurial intention	0.0651	0.6715
H5. Government policies → Perception of Opportunities	0.2032 ***	2.7148
H6. Government regulation → Perception of Opportunities	0.2366 ***	2.7165
H7. Government programmes → Perception of Opportunities	-0.1481	1.3907
H8. Entrepreneurship training → Perception of Opportunities	-0.032	0.5315
H9. Market dynamics → Perception of Opportunities	-0.2741 ***	4.0188
H10. GDP per capita → Perception of Opportunities	-0.3336 ***	4.4439
H11. Unemployment rate → Perception of Opportunities	-0.2945 ***	3.0226
H12. Inflation rate → Perception of Opportunities	0.2453 ***	2.8843

R² (Entrepreneurial intention) = 0.131; R² (Perception of Opportunities) = 0.577.

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

confidence level ($\beta = 0.23$; $p < .10$), Meanwhile, the parameter between the perception of opportunities and entrepreneurial intention (H3) is also significant ($\beta = 0.20$; $p < 0.05$), meaning that this hypothesis can be accepted. However, in the relationship between financing facilities and entrepreneurial intention (H4), there is no evidence of a significant relationship between them ($p > 0.10$), meaning that this hypothesis cannot be accepted.

As regards the impact of institutional and economic factors on the perception of business opportunities, the estimated model shows that they can be considered as determinant factors, since they present the following significant parameters: H5, government policies ($\beta = 0.20$; $p < 0.01$); H6, government regulation ($\beta = 0.23$; $p < 0.01$); H9, the market dynamics ($\beta = -0.27$; $p < 0.01$); H10, regional GDP per capita ($\beta = -0.33$; $p < 0.01$); H11, the regional unemployment rate ($\beta = -0.29$; $p < 0.01$), and H12, the regional inflation rate ($\beta = 0.24$; $p < 0.01$); However, only hypotheses H5, H11 and H12 can be accepted, since in addition to presenting a significant parameter, they do so with the expected sign. By contrast, despite having significant parameters, H6, H9 and H10 must be rejected because they present the opposite sign to the one expected. Furthermore, the relationships between the perception of opportunities and government programmes to promote entrepreneurship (H7) and entrepreneurship education and training (H8) present parameters that are not statistically significant ($p > 0.10$), which means that both hypotheses must be rejected.

5. Discussion and conclusions

This study attempts to analyze, on a markedly exploratory and predictive basis, the impact of a number of institutional and economic variables on the perception of business opportunities, and the impact of this perception and the perception of entrepreneurial skills (self-efficacy) on entrepreneurial intention.

First, we must refer to the limitations of the study carried out. It is possible to make a clear distinction between two stages in the economic cycle during the period analyzed (2004-2010) —one of expansion until mid— 2007, and another of recession from that point onwards. This may distort the estimate obtained, because the data from the expansion phase are offset by those from the recession phase. Consequently, it would be useful to perform the analysis while distinguishing between the two periods. This would require more observations for each sub-period, which is currently not feasible due to the fact that the data used from the regional reports for the GEM project are available only for the years in question; and an analysis of a panel data model cannot be performed, since there are only 17 data (one for each autonomous region) for each year, which is an insufficient number of observations for the statistical requirements of such an approach.

Furthermore, the results obtained are not directly generalizable, as it is a study of specific regions, in Spain, with their own characteristics in a specific time period; similar studies should therefore be carried out with regions in other countries to obtain a series of stylized facts, if the results are the same. In addition, given the relatively low —albeit acceptable— value of the explained variance in each simultaneous regression (value of R^2) in studies like the one carried out here, especially in relation to the variable «entrepreneurial intention,» the explanation may be that because of the scope of the study, explanatory variables that may have a significant impact on the independent variables have been left out of our framework of analysis; specifically, those used by the psychological approach, since we do not focus on those psychological variables, but rather on studying the impact of institutional and economic factors on entrepreneurship. Dealing with a short period of time (2004-2010), defined by the availability of regional data from the corresponding GEM reports, means having to work with a relatively small number of observations, which means that our study is eminently exploratory, and as such it would be necessary to have a time series that is much longer to obtain confirmatory conclusions regarding the relationships between variables. With more observations it would also be possible to use the structural equation methodology to make multigroup comparisons, *i. e.* to analyze whether the behaviours differ among Spanish autonomous regions as regards the relationships between the variables considered. These limitations are in themselves future lines of research to be undertaken in subsequent studies.

The results of our study support the conclusion that for the Spanish regions as a whole in the 2004-2010 period, the perception of abilities (self-efficacy) positively

and significantly affects both entrepreneurial intention (H1) and the perception of business opportunities (H2). Predictive evidence for the hypotheses is consequently provided by Boyd and Voizikis (1994), Krueger and Brazeal (1994), Chen *et al.* (1998), Burke *et al.* (2002), Arenius and Minniti (2005) and McGee *et al.* (2009), among others.

One of the aspects that is most frequently mentioned in the literature on entrepreneurship is that among other factors, the intention or desire of individuals to create businesses is determined by the perception of valuable business opportunities (Arenius and Minniti, 2005; Roure *et al.*, 2007; Koellinger *et al.*, 2007). When this relationship was confirmed in our study (H3), this provided evidence that individuals' judgement of their own ability to identify business opportunities is one of the main cognitive factors affecting the entrepreneurial spirit or intentions (Baughn *et al.*, 2006). However, as it is not significant, the ease of access to financing sources (H4) does not appear to affect entrepreneurial desires or intentions, although the estimated parameter has the expected sign. A possible explanation for the result obtained lies in the fact that access to sources of financing by entrepreneurs may have a greater influence in times of recession, when it is an obstacle or barrier to entrepreneurship, but are not an influence in periods of expansion when access to funding for new business initiatives is easier. On the other hand, perhaps the ease of access to financing sources is more closely related to the decision to create a new business than to the prior intention to do so.

This study provides evidence that the perception of business opportunities is determined, in addition to the perception of abilities (self-efficacy) discussed above, by a high priority on entrepreneurship in government economic policy (H5) (Van Stel *et al.*, 2005; Wennekers *et al.*, 2005), and by two economic factors: *a*) the unemployment rate (H11), in the sense that the higher the percentage of the population that is unemployed, the lower the perception of business opportunities, *i. e.* as the purchasing power of the population is reduced, entrepreneurs identify fewer entrepreneurial opportunities (Uhlaner and Thurik, 2007), and *b*) the rate of inflation (H12), because as inflation increases, the perception of opportunities by entrepreneurs increases, in the sense that a higher level of prices for products and/or services may lead to increased expectations of earnings by the entrepreneur, which can clearly be seen as a business opportunity that allows for a high level of success in the new venture, thereby corroborating the approaches of Shapero (1978) and Gibb and Ritchie (1982).

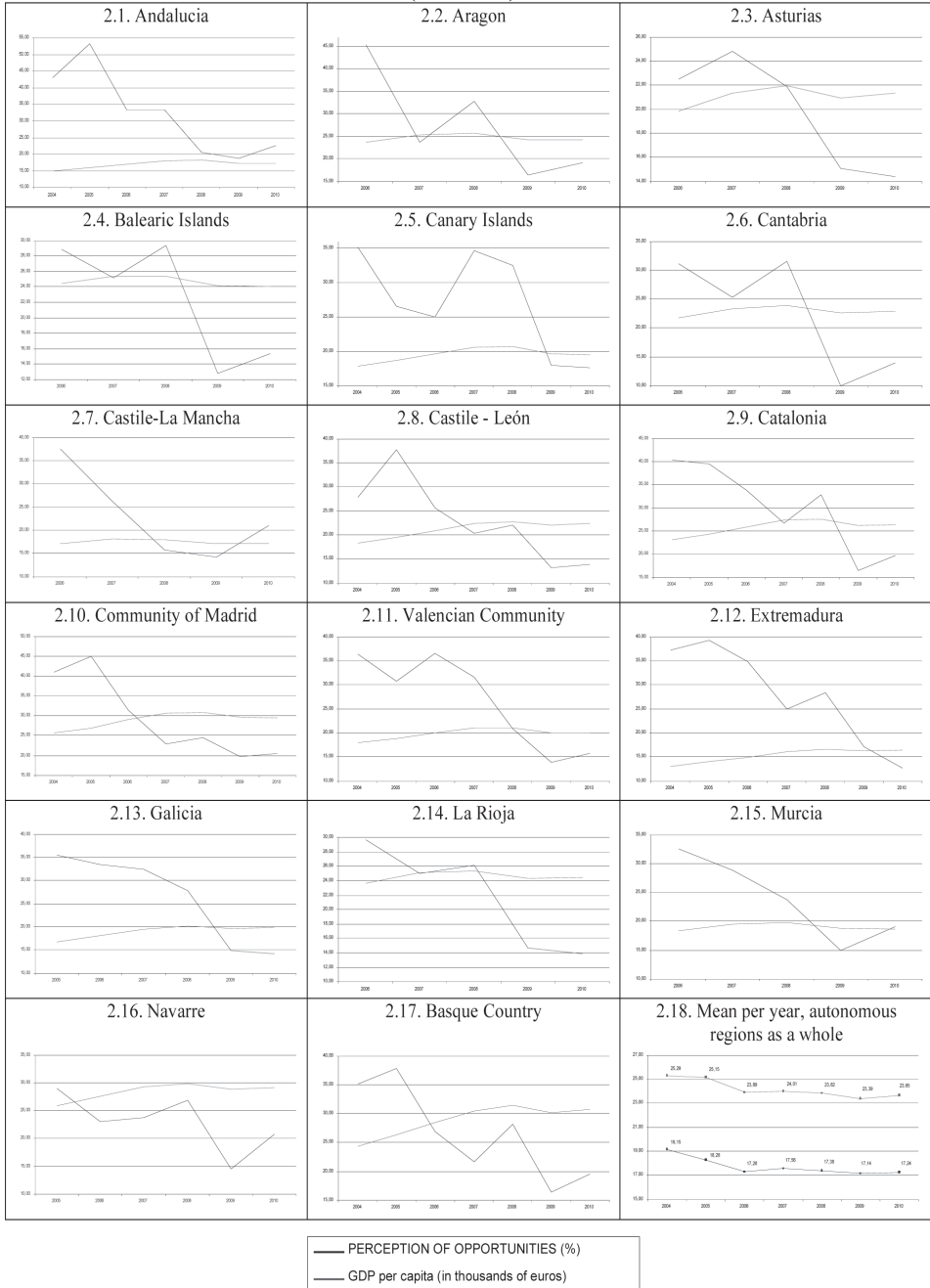
The degree of dynamism of the market (H9) has a significant relationship with the perception of business opportunities, albeit with a negative sign, contrary to expectations. In other words, contrary to the argument made by Levie and Autio (2008), when market dynamism increases, the perception of opportunities is observed to decrease. A possible explanation could be that the dynamism of the market, understood as the level of changes that occur in the market in which competition between companies takes place, can be both positive (it really means opportunities) or negative (it creates threats). In this respect, the relationship between the two variables would really be positive if the changes led to market opportunities, but negative if the changes

involved threats to the business, as seems to be the case in the years analyzed, as a result of the impact of the recessive economic cycle. Additionally, another possible factor that may have an impact on this relationship is the different level of productive specialization in each Spanish autonomous region, which would mean that each one has a substantially different level of dynamism depending on the sectors in which they specialize, and that this in turn generates different perceptions of business opportunities depending on the sector and region. Another possible reason for the result obtained is that the market dynamics are measured in the GEM study based on the aggregation of experts' opinions, where the subjective assessment criteria of the experts consulted in each region are based on various parameters depending precisely on the different dynamism in the fields of specialization of each region.

The regional GDP per capita has a negative effect on the perception of business opportunities (H10); contrary to the expected result. One possible explanation could be the influence of the change in the trend in entrepreneurial intention or desire of the population and the change in the economic cycle (expansion until mid-2007 and recession since then) in that relationship, with a predominance of observations in which the perception business opportunities declines when GDP per capita increases, resulting in a negative correlation between the two variables, which in turn causes the negative (but significant) parameter obtained. Furthermore, the relationship between the variables of perception of business opportunities and GDP per capita presents uneven trends for each region. When they are considered together in our study, the positive trends in the different Regions are offset by negative trends in others, as shown in figure 2. However, if we consider the relationship between the two variables at a national level, *i. e.* the mean of all the autonomous regions for each year, there is a clear and obvious positive relationship (with a correlation coefficient of 0.95) between GDP per capita and the perception of business opportunities (see figure 2.18), that is fully consistent with the theoretical approaches set out above. Consequently, the negative relationship found between the two variables is due to the regional disaggregation performed in our study, which in our view ends up distorting the positive relationship that exists at a national level. This leads us to believe that there are different behaviours in each Spanish region as regards the impact of GDP per capita in the perception of opportunities and entrepreneurial intentions, which are motivated by other factors, such as different regional productive specializations, the cultural differences as regards entrepreneurship between the different Spanish regions, etc. This raises the need to continue investigating the regional differences in order to improve understanding of the entrepreneurial phenomenon.

A significant parameter is obtained for the government regulation variable (H6), but contrary to expectations, it has a positive sign, *i. e.* the more regulation, the greater the perception of opportunities, which is indeed surprising. One possible explanation for the result obtained is that Spanish business culture has had a long-standing and strong dependence on government supervision, meaning that Spanish entrepreneurs perhaps generally feel more comfortable with high levels of regulation that protect them from uncertainty. This is mentioned by Tortella (1994:333-334), when he says that «the weakness of the entrepreneurial spirit is emphasized by [...] the great pro-

Figure 2. Relationship between the variables of perception of business opportunities and GDP per capita, by Spanish Autonomous Regions for each year (2004-2010)



density of Spanish entrepreneurs to seek protection from the State to provide them with income and protect them from the competition».

By introducing a parameter that is not significant, government programmes promoting entrepreneurship (H7) do not affect the perception of opportunities. This could be explained by the fact that these programmes affect the entrepreneurial process after a time lag.

Finally, the entrepreneurship education and training that takes place in the education system has no influence on the perception of opportunities (H8); from which it follows that the training in entrepreneurship and business management that takes place in secondary and higher education is of relatively little use in promoting entrepreneurship among the younger generations, and therefore does not enable them—at least immediately—to perceive opportunities to create new businesses. In our view, the reason for this is twofold. On one hand, this training has an effect on long-term entrepreneurial activity, *i. e.* it provides the stimulus for some students to become entrepreneurs, which will not materialize until some years later, after they have gained experience in the labour market and perceive that they possess the necessary skills. On the other hand, as noted by García Tabuenca *et al.* (2008), higher education is not a necessary condition for entrepreneurship, and there is even some empirical evidence that identifies early academic dropout with success in business.

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