

DOI: 10.7819/rbgn.v16i52.1615

SUBJECT AREA: PEOPLE AND INTELLECTUAL CAPITAL MANAGEMENT

## Immigrants' Perception of Business Opportunities in Spain: the impact of general and specific human capital

*A Percepção de Oportunidades de Negócios por Imigrantes na Espanha: o impacto do capital humano geral e específico*

*La percepción de las oportunidades de negocios por inmigrantes en España: el impacto del capital humano general y específico*

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Received on February 24, 2013 / Approved on October 6, 2014

Responsible Editor: João Maurício Gama Boaventura, Dr.

Evaluation Process: *Double Blind Review*

### ABSTRACT

Perceiving business opportunities is an important part of entrepreneurship. This study analyzes how immigrants' general and specific human capital influences their likelihood of perceiving business opportunities. Analysis focuses on comparison between a group of immigrants and a group of Spanish citizens. Data from the 2008 Global Entrepreneurship Monitor (GEM) was used. Logistic regression was used to analyze data. Results revealed that both immigrants' and Spanish citizens' human capital such as education is not significant to perceiving opportunities. Much to the contrary: the impact of specific human capital on perceiving opportunities is in general significant to both groups. This research reveals which specific types of human capital are relevant in the process of perceiving opportunities amongst immigrants. This paper is a novelty because it introduces a theoretical approach to the

perception of opportunities within the universe of new businesses established by immigrants in Spain.

**Keywords:** Opportunity. Perception. Immigrants. Human capital.

### RESUMO

A percepção de oportunidades de negócios tem um papel muito importante. O presente estudo analisa a influência do capital humano geral e específico de imigrantes em seu país de acolhimento. A análise compara um grupo de imigrantes com um grupo de espanhóis. Para o estudo, foram utilizados dados do *Global Entrepreneurship Monitor* (GEM) de 2008. A técnica utilizada para a análise dos dados foi regressão logística. Os resultados revelaram que o capital humano – como a educação dos imigrantes e dos espanhóis – não é relevante para a percepção de oportunidades de negócios. Pelo

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contrário, o impacto do capital humano específico na percepção de oportunidades de negócios é em geral relevante para ambos os grupos. Este estudo revela quais tipos específicos de capital humano são relevantes ao processo de percepção de oportunidades por imigrantes. O artigo inova ao oferecer um enfoque teórico à percepção de oportunidades no âmbito da criação de empresas por imigrantes na Espanha.

**Palavras-chave:** Oportunidade. Percepção. Imigrantes. Capital humano.

## RESUMEN

La percepción de las oportunidades de negocios juega un rol muy importante. Este estudio analiza cómo el capital humano general y específico que poseen los inmigrantes influencia en la probabilidad de percibir oportunidades emprendedoras en el país de destino. El análisis se desarrolla comparando el grupo de inmigrantes con los autóctonos. Para el estudio se utilizan datos del *Global Entrepreneurship Monitor* (GEM) del año 2008. La técnica utilizada en el análisis de los datos fue la regresión logística. Los resultados revelaron que el capital humano, como la educación que poseen los inmigrantes y los autóctonos, no es significativo para percibir oportunidades de negocios. Por el contrario, el impacto del capital humano específico en la percepción de oportunidades de negocios, en general, es significativo para ambos grupos. Este estudio revela qué tipos específicos de capital humano son relevantes en el proceso de percibir las oportunidades entre los inmigrantes. Este artículo es novedoso porque introduce el enfoque teórico de la percepción de oportunidades en el ámbito de la creación de empresas por inmigrantes.

**Palabras clave:** Oportunidad. Percepción. Inmigrantes. Capital humano.

## I INTRODUCTION

Looking at entrepreneurship as a process implies recognizing that the perception of

business opportunities is the first step and the milestone of entrepreneurship. This means that the existence of opportunities plays an important role in this process (SHANE, 2003). In general, some prior studies on the perception of business opportunities highlighted the importance of prior knowledge upon the recognition of opportunities (SHANE, 2000), the alertness of individuals (KIRZNER, 1973) and the network-based approach (ARENIUS; MINNITI, 2005), among others (ARENIUS; MINNITI, 2005; SHEPHERD; DETIENNE, 2005; UCBASARAN; WESTHEAD; WRIGHT, 2008). These studies have doubtless enlarged knowledge and understanding of the identification of opportunities; however, perception of business opportunities is still necessary to immigrants.

Prior studies on immigrant entrepreneurship have focused on business creation, and less attention has been paid to the perception of business opportunities. In this sense, the influence of general and specific human capital upon the perception of business opportunities among immigrants is not well understood. Moreover, there is a need to better understand how the perception occurs in different settings. For this reason, this study aims to add to the literature on immigrant entrepreneurship the understanding of how immigrants' specific and general human capital plays a role in the process of perceiving business opportunities in the host country. An immigrant's human capital has a particular configuration and characteristics because it is acquired in different socio-economic contexts. So, studying the human capital of immigrants is important because immigrants participate actively in the economy of the country.

This study uses data from the 2008 *Global Entrepreneurship Monitor* (GEM). This database has information on immigrants and natives that allowed us to classify them in general and specific human capital. This human capital can influence the perception of opportunities, independently of whether these opportunities are exploited or not (SHANE; VENKATARAMAN, 2000). In effect, some authors have stated that well-educated people are more likely to perceive

and exploit business opportunities. Information and skills that education and experiences provide are relevant to improve entrepreneurial judgment, by enhancing the analytical ability of recognizing opportunities.

Education and experiences are known as general human capital, which constitute the prior knowledge of individuals, acquired over time (HAYEK, 1945; VENKATARAMAN, 1997). Also, managerial-business experience and entrepreneurial training (AMARAL; BAPTISTA; LIMA, 2011; ARRIBAS; VILA, 2007; LE, 2000) are considered as specific human capital, when controlling for their demographic characteristics. In general, our results reveal different impacts of specific and general human capital upon the perception of business opportunities among immigrants and natives in Spain.

The aim of this study is to make the following contributions. First, we shall focus on the analysis of the immigrant community in Spain to study the influence of human capital, general and specific, on the perception of business opportunities. And second, we have focused our attention on the reality of Spain referring to immigrant entrepreneurship and the perception of business opportunities, because Spain is a young country in the immigration process (CARRASCO; JIMENO; ORTEGA, 2008; CONDE-RUIZ; GARCIA; NAVARRO, 2008; FERNÁNDEZ; ORTEGA, 2008) and also because it is the country with the highest rate of immigrants in the European Union over the last decades (OBLAK FLANDER, 2011).

The paper proceeds as follows. The next section is dedicated to reviewing literature on human capital, specifically as to general and specific human capital, as well as in the perception of business opportunities. Section 3 presents the theoretical framework and hypotheses. Section 4 displays the methodology and technique used for data analysis. Section 5 is devoted to empirical findings; Section 6 presents the discussion and conclusion; and Section 7 presents implications and future research lines.

## 2 THEORETICAL FRAMEWORK

### 2.1 Human capital: general and specific

The human capital theory refers to the acquisition of education and experiences by individuals. This resource provides individuals with knowledge that increases their cognitive abilities to perform activities in any field. The theory assumes that more human capital is better, because it can influence individuals in the choice of careers or even in attitudes towards engaging themselves in entrepreneurial activities (LUCAS, 1978). However, human capital has dimensions that have been classified as general and specific human capitals. For instance, BECKER (1962) distinguished between general and specific human capital. The author highlighted that general human capital refers to skills and knowledge which is transferable. His argument is based on general and specific training, where specific training increases productivity in companies and general training increases their marginal productivity. Following Becker's definition, concepts referring to general and specific human capital emerged in management (WEISBERG, 1996).

For instance, some authors used general human capital (GHC) referring to the personal characteristics of the entrepreneur that do not directly refer to his/her role in the business (ARRIBAS; VILA, 2007). So, formal education and work experience are considered as being GHC (ARRIBAS; VILA, 2007; UCASARAN; WESTHEAD; WRIGHT, 2008). Education is a common structure that provides individuals with skills and knowledge (ARRIBAS; VILA, 2007; DAVIDSSON; HONIG, 2003). Despite the fact that education is a dimension of general human capital, some studies have found positive effects upon the probability of engaging in entrepreneurial activities (LUCAS, 1978). In contrast, other authors have found negative effects upon entrepreneurship (KOELLINGER; MINNITI; SCHADE, 2007; REYNOLDS; BYGRAVE; AUTIO, 2003). Specifically, when tertiary education is analyzed, certain results showed that individuals have less chances of

engaging as entrepreneurs than those with primary or secondary education (AMARAL; BAPTISTA, 2007).

Work experience is also considered part of GHC and has usually been defined as the number of years involved in any work. For example, individuals who worked in managerial positions, those who created a business and those who worked in sectors such as trades and sales acquired different experiences from those who worked as clerks, machine operators and laborers, among others (LE, 2000). Therefore, this variance of experiences is not captured by defining the work experience of individuals.

On the other hand, specific human capital (SHC) refers to professional and training experiences (ARRIBAS; VILA, 2007). Some studies have used specific human capital referring to skills and knowledge which is less transferable (GIMENO et al., 1997). The accumulation of SHC takes place at work as well as in non-formal education, such as specific training courses. Some studies have considered vocational studies when referring to specific courses which are not formal education (CHAGANTI et al., 2008; DAVIDSSON; HONIG, 2003; LE, 2000). The ownership experience is considered another dimension of SHC (GIMENO et al., 1997). This kind of experience provides individuals with knowledge and skills referring to business (SPENDER, 1996), and allows them the perception of opportunities in the same sector or even in another. These individuals manage specific knowledge of the market and deal with suppliers and customers. In the same branch, there is the business manager, who, despite not being the owner, deals with all aspects of the business and knows the market as well as the owner.

## 2.2 Human capital and the perception of business opportunities

entrepreneurship is a process that begins with the perception of business opportunities, and after that the individual exploits them or not (SHANE, 2003). The perception of business opportunities is based on the approach

of the Austrian economy. KIRZNER (1973) suggests that only some may recognize specific opportunities in a given time, given that people have different idiosyncrasies and experiences of personal life. Shane and Venkataraman (2000) highlight that the perception of business opportunities could occur using the cognitive properties and characteristics that one possesses. Moreover, authors point out that possessing information is crucial, and then possession in terms of quantity relies completely on the experiences that individuals have had. For example, one can acquire information while studying, in a job, in the neighborhood, where one lives or in the country where one is living, or elsewhere. Consequently, all these resources that an individual acquires constitute the idiosyncratic general and specific human capital which influences in the perception of business opportunities (VENKATARAMAN, 1997).

In this manner, the perception of business opportunities was studied by certain authors, who used human capital as a factor to explain this process. (WESTHEAD; UCBASARAN; WRIGHT, 2009) conducted a study that focused on opportunity identification by habitual and new entrepreneurs who had prior business experience. This study compares the number of opportunities that both habitual and new entrepreneurs had identified; data was collected in Great Britain. The identification of opportunities was based on information that both groups looked for and human capital was considered a control variable. Education was used as a proxy of human capital.

## 2.3 Immigrant's general human capital

Literature on immigrant entrepreneurship and human capital revealed to be somewhat complex, because factors acquired by immigrants are analyzed considering migration periods, something that does not occur in general studies on entrepreneurship (VINOGRADOV; KOLVEREID, 2007). For this study, we do not consider this distinction because data is not available, but we dismantle the construct – human capital – into attributes (UNGER et al., 2011)

that could trigger the perception of business opportunities among immigrants.

### 2.3.1 Education

Education is one factor analyzed in immigrant entrepreneurship research. Formal education is seen as providing the skills to deal with changes in economic environments (HATCH; DYER, 2004). As mentioned above, education is a source of knowledge, skills, discipline, and motivation that individuals acquire in their center of study. Literature review on immigrant entrepreneurship revealed that most studies were made about entrepreneurship. This means that studies have focused their attention on the exploitation of opportunities rather than on the perception of business opportunities. In these studies, immigrants' education was considered relevant for creating a business in the host country. For instance, Borjas (1986) analyzed self-employment rates of immigrants compared to natives in the United States, and found that education had a positive and significant impact on self-employment rates in the sample. Another study carried out in Canada explained why certain immigrants engaged in self-employment and others did not. Outcomes showed that the odds of self-employment are increased for immigrants with higher education (LI, 2001).

On the other hand, there are studies that highlight the opposite; this means that a high educational level reduces the odds of becoming an entrepreneur. For example, analyzing the experience of Australia, Le (2000) found that the education of immigrants has a small and negative impact on the propensity for being self-employed. These previous studies on immigrant entrepreneurship show different results for the effect of education on entrepreneurship. As highlighted by Vinogradov and Kolvereid (2007, p. 366) "one can conclude that the effect of education depends on a context". So, considering that the influence of education on entrepreneurship is indeterminate and that the human capital of immigrants was not

studied in perceiving business opportunities, we hypothesized as follows:

**H1a:** Immigrants who possess a high level of education are more likely to perceive business opportunities than those with a lower level of education.

**H1b:** Natives who possess a high level of education are more likely to perceive business opportunities than those with a lower level of education.

### 2.3.2 Work Experience

Similarly to education, the work experience dimension has been studied in entrepreneurship and not yet in the perception process. Work experience is used as a part of human capital and, in fact, some studies have measured it in number of years. This experience is important because it provides individuals with knowledge and skills referring to a specific sector, and allows for the accumulation of knowledge and the domain of certain skills. For example, "a person might know of a storefront becoming vacant because she is a real estate agent and has early access to information about retail vacancies... even if other people have the same preferences as the real estate agent, the real estate agent has a greater likelihood of identifying an opportunity and of opening a clothing store..." (SHANE, 2003, p. 46). For this reason, work experience is associated with self-employment (BORJAS, 1986).

For instance, Le (2000) showed that the work experience of immigrants in the host country has a positive impact on becoming self-employed in Australia, which is similar to the study conducted in the Netherlands, which showed that experience acquired by immigrants in the host country is relevant to becoming self-employed (KANAS; VAN TUBERGEN; VAN DER LIPPE, 2009). The importance of acquiring experience in the host country depends on the credibility of employers in such experiences. Moreover, to have experience in a host country means to know the market, manage information referring to work permits, deal with local institutions and the



legislation of a particular country for becoming an entrepreneur, to mention but a few. Thus, based on the above, we hypothesize that:

**H2a:** Immigrants with work experience are more likely to perceive business opportunities than those without such experience.

**H2b:** Natives with work experience are more likely to perceive business opportunities than those without such experience.

## 2.4 Immigrant specific human capital

### 2.4.1 *Managerial-Business Experience*

Managerial business experience refers to the experience acquired either as the owner or as the manager of a business. Ownership is the experience that an individual acquires if he/she has a business, and it is an important dimension in the analysis of entrepreneurship. The owner acquires knowledge through the process of managing his/her own business (SPENDER, 1996). Managerial skills also enhance the reputation of the entrepreneur because they are recognized hierarchically. Entrepreneurs have broader social relationships because, as managers, they deal with customers, suppliers and other managers, which enlarge his/her business networks (SHANE; KHURANA, 2003). There also are some studies that have pointed out that business-ownership experience is influential in the process of identifying and pursuing business opportunities (SHANE; VENKATARAMAN, 2000; WESTHEAD; UCASARAN; WRIGHT, 2009).

In a similar way, managerial experience is highlighted in some studies for its relevant relations with entrepreneurship. Management experience is acquired by heading up an enterprise where individuals have developed specific skills because they are incumbent with the decision-making of the enterprise and identify what is required to earn profits. To do that, they have probably acquired special skills to understand the

specific market (WESTHEAD; UCASARAN; WRIGHT, 2009). Furthermore, individuals that have acquired specific human capital from management experience are able to perform environmental scanning, selecting opportunities and selecting strategies to be explored. They can also deal with the organization, management and leadership in the business (Unger et al., 2011). Therefore, we hypothesize that:

**H3a:** Immigrants who possess managerial-business experience are more likely to perceive business opportunities than those without such experience.

**H3b:** Natives who possess managerial-business experience are more likely to perceive business opportunities than those without such experience.

### 2.4.2 *Entrepreneurial Formation*

Human capital is made up of formal and non-formal education. Non-formal education refers to specific vocational and training courses that are not a part of a formal education structures (DAVIDSSON; HONIG, 2003). Usually, training courses are focused on specific groups of people who are in a vulnerable situation (AWOGBENLE; CHIJIOTE, 2010). For example, immigrants, unemployed people and women, among other minority groups, take specific training courses such as business creation, accounting, etc., to participate in the labor market.

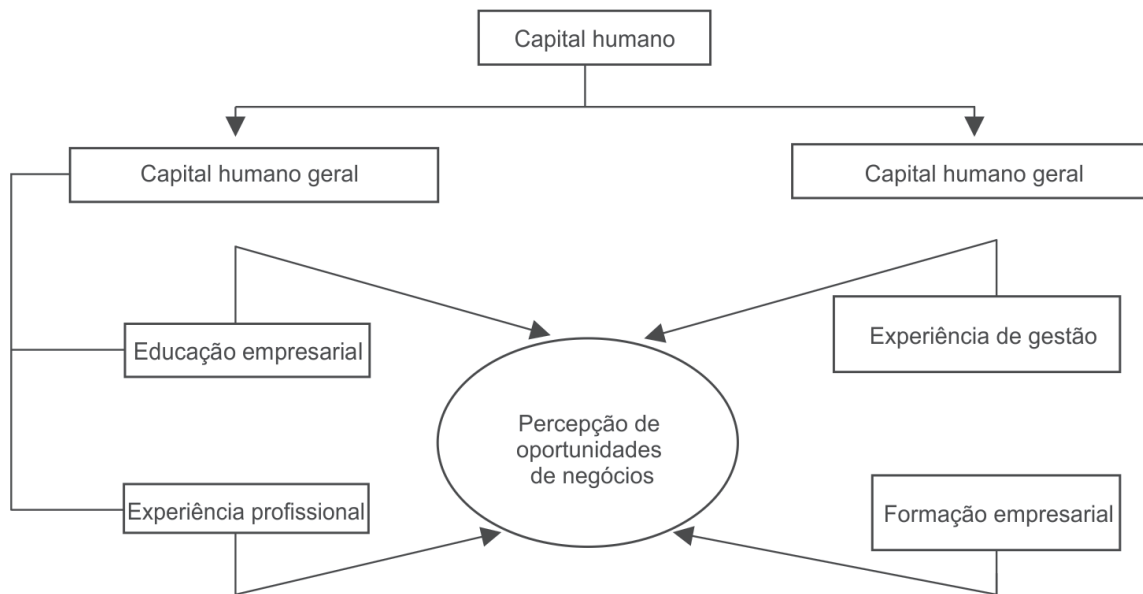
Also, entrepreneurial formation provides knowledge and skills to individuals. When the individual has some kind of entrepreneurial education or formation, he/she intends to reinforce and enlarge his knowledge to create a business (NECK; GREENE, 2011) or to improve the performance of his/her business. This argument is consistent with the limited scope of applicability that specific human capital has as a characteristic (COOPER; GIMENO-GASCON; WOO, 1994; UCASARAN; WESTHEAD; WRIGHT, 2008). This means that entrepreneurial

formation is oriented to developing specific skills and knowledge surrounding the business, but this specific knowledge loses its value outside of its particular domain. Therefore, we hypothesize that:

**H4a:** Immigrants who have entrepreneurial formation are more likely to perceive business opportunities than those immigrants without such training.

**H4b:** Natives who have entrepreneurial formation are more likely to perceive business opportunities than those immigrants without such training.

To summarize, Figure 1 shows the relationships between general and specific human capital with the perception of business opportunities.



**FIGURE 1** – Human capital and the perception of business opportunities

**Source:** Self-elaborated  
 Adapted: Becker (1962)

### 3 METHODOLOGY

#### 3.1 Data

To accomplish the objective of this study, the database of the Global Entrepreneurship Monitor (GEM) was used. The Global Entrepreneurship Monitor was founded by Babson College and the London Business School in 1999, with the aim of analyzing issues referring to entrepreneurship and its influence on economic growth. This database was assembled to facilitate

research across nations through the comparison of topics referring to entrepreneurship and the level of entrepreneurial activity (REYNOLDS et al., 2005).

Data used for this study came from the Spanish GEM for the year 2008. This data is a large stratified random sample of the Spanish population. The sample is stratified by 17 Spanish autonomous communities, plus two autonomous cities: Ceuta and Melilla. Respondents were contacted by telephone, using randomized direct dial technique by a leading professional

market investigation and public opinion service firm and monitoring by GEM consortium. Telephone numbers corresponding to different municipalities were randomly obtained from the annually updated "España Office V5.2" database of fixed and mobile telephones. The 2008 Spanish GEM sample has 30,879 observations from which 1,957 are immigrants and 28,922 are natives.

### 3.2 Variables

Variables selected for our study are detailed in Table 1. It shows the pooled sample of our study, which is formed by immigrants and natives. The 2008 Spanish GEM database contains 30,879 observations from which cases without information were dropped to avoid bias in the results. So, after dropping these cases, the full sample stands around 23,553 observations, in which around 22,066 observations correspond to native people and around 1,487 correspond to immigrants.

#### 3.2.1 Dependent Variable

Perception of opportunities: respondents were asked whether "in the next six months, there will be good opportunities for starting a business". This variable is measured as a binary variable assuming value 1 if the individual perceives opportunities and 0 otherwise. Our data showed that the level of perceiving opportunity by immigrants (0.32%) is higher than that of natives (0.26%); therefore this difference is statistically significant.

#### 3.2.2 Independent Variables

*Education:* the GEM project uses the variable "maximum education attainment" to

measure the level of education of individuals. All respondents interviewed gave their maximum level of education at the time of the survey. This variable was transformed in binary assuming 1 for individuals that have more than 12 years of education and 0 otherwise. Table 1 reveals that 31% of immigrants have more than twelve year of education compared to natives with 27% with the same years of education.

*Work experience:* was coded as binary variable assuming value 1 for individuals with active work status and 0 otherwise. According to our descriptive statistics, 80% of immigrants are active working compared with 73% of natives in the same situation. As it was explained in the theoretical framework work experience is part of general human capital, in this sense we are using this variable as proxy of work experience.

*Managerial-business experience:* Spanish GEM database considers the variable "owns or manages a business" which measures skills acquired by individuals. The values of this variable are 1 for individuals who acquired this kind of experience and 0 otherwise. Our data show that immigrants (14%) and natives (13%) have almost the same level of this experience.

*Entrepreneurial training:* this variable is determined by the answers of individuals who answer the question "have received some entrepreneurial formation in his life". This variable is binary assuming 1 if the individual had entrepreneurial formation and 0 otherwise. In Table 1 is observed that the level of entrepreneurial formation of immigrants (24%) is a bit higher than that of natives (21%).



**TABLE 1** – Descriptive statistics of variables

Variable	Definition	Immigrant	Native	Full
Migrant	1=yes, 0=no	1	0	0.062641 (0.2423216)
Perception of opportunity	1=yes, 0= no	0.3197279 (0.4665298)	0.2643088 (0.4409745)	0.2677803 (0.4428119)
More than 12 years of education	1=yes, 0= no	0.3075335 (0.4615914)	0.2694802 (0.4436975)	0.2718765 (0.4449338)
Work experience	1= yes, 0= no	0.8013605 (0.3991117)	0.7310997 (0.4433981)	0.7355009 (0.4410755)
Time of residence	0 – 52 years	10.1517 (10.03626)	-	-
Managerial-business Experience	1 = yes, 0= no	0.1367347 (0.343684)	0.1283811 (0.3345213)	0.1289044 (0.3351013)
Entrepreneurial training	1 =yes, 0 = no	0.244898 (0.430173)	0.2151657 (0.4109466)	0.2170282 (0.4122307)
Gender	1 = male, 0=female	0.5380952 (0.4987163)	0.5003864 (0.5000112)	0.5027485 (0.5000031)
Age	18 – 64 years	37.59456 (11.23365)	41.88294 (12.30422)	41.61431 (12.28372)

Values in parentheses represent standard deviation

**Source:** self-elaborated

### 3.2.3 Control Variables

These variables are introduced with the objective to control some outcomes of the predictable variables referring to the perception of business opportunities. We considered *gender* important for our study, this variable is binary and has the value 1= male and 0 otherwise. The proportion of immigrant men is slightly bigger (54%) compared to native men (50%). An individual's *age* is another factor considered and is expressed in years between 18 and 64. Table 1 reveals that the average of the immigrants' age is 37.6, and that of natives is 41.8 years old. The variable *immigrant or Spanish* is binary and assumes 1 for immigrants and 0 otherwise. Moreover, *the time of residence* of immigrants was considered as control. This variable is numerical, ranging from 0 to 52 years. Finally, *Spanish regions* were considered to capture differences in opportunity sets across the country.

### 3.3 Econometric methodology

As our dependent variable is discrete, we may use ordinal least square regression – OLS – to test our hypotheses. Nonetheless, this kind of model has certain econometric problems, such as  $\mathcal{E}$  does not have a Gaussian distribution,  $\mathcal{E}$ 's variance is not constant, it is heteroscedastic and may predict probability values beyond the binomial values (1, 0) (GREENE, 2008). Considering that explained before, the hypotheses pointed out are tested using the logistic regression model.

In order to test our hypotheses, four logistic regression models for the samples are considered. Model 1 was run with the control variables; Model 2 considered control variables plus general human capital variables; in Model 3 variables referring to specific human capital and control are considered, and Model 4 was run with all, predictors and control variables. We ran three sets of binomial regression analysis, one for pooled data, i.e., immigrants and natives (Table 2) other only for immigrant's group (Table 3) and another for native's group (Tables 4). The odds ratio is reported for each predictor variable of our four models.

## 4 EMPIRICAL FINDINGS

### 4.1 Pooled sample

Table 2 shows the models for the pooled sample. Model 4 includes variables referring to general and specific human capital. In analyzing the pooled sample, we found that some control variables are significant in all models. In Model 4 was found that men are more likely to perceive business opportunities than are women. Also, results showed that younger people tend to perceive business opportunities than do older ones. One important thing in Table 2 is to see that the immigrant population in Spain is relevant for perceiving business opportunities compared to natives.

Analyzing general human capital, we found that the relationship between education

and the perception of business opportunities is not significant in Models 2 and 4. In this sense, no support was found for Hypothesis 1. Hypothesis 2 states that individuals who have work experience are more likely to perceive business opportunities

than those without this experience. The findings, in Model 4, for the pooled sample support this hypothesis; there is a significant relationship between the work experience of individuals and the perception of business opportunities.

**TABLE 2** – Logistic regression for pooled sample

Variables	Model (1)	Model (2)	Model (3)	Model (4)
	Control	GHC	SHC	Full
<b>General Human Capital</b>				
More than 12 years of education		-0.0244 (0.0340)		-0.0291 (0.0341)
Work status		0.147*** (0.0364)		0.125*** (0.0374)
<b>Specific Human Capital</b>				
Entrepreneurial Training			0.204*** (0.0355)	0.204*** (0.0356)
Managerial-business experience			0.122*** (0.0436)	0.0888** (0.0447)
<b>Control Variables</b>				
Gender	0.313*** (0.0298)	0.284*** (0.0308)	0.303*** (0.0299)	0.279*** (0.0308)
Age	-0.00380*** (0.00122)	-0.00397*** (0.00130)	-0.00350*** (0.00123)	-0.00363*** (0.00131)
Immigrant	0.263*** (0.0588)	0.263*** (0.0592)	0.258*** (0.0588)	0.260*** (0.0592)
Autonomous communities				
Andalusia (ref.)				
Aragon	0.668*** (0.0828)	0.667*** (0.0832)	0.667*** (0.0828)	0.668*** (0.0832)
Asturias	0.113 (0.0862)	0.120 (0.0866)	0.101 (0.0862)	0.111 (0.0866)
Balearic Islands	0.493*** (0.100)	0.487*** (0.101)	0.493*** (0.101)	0.490*** (0.101)
Canary Islands	0.240*** (0.0846)	0.242*** (0.0850)	0.238*** (0.0847)	0.241*** (0.0851)
Cantabria	0.596*** (0.0987)	0.606*** (0.0991)	0.600*** (0.0988)	0.611*** (0.0991)
Castile and Leon	0.0940 (0.0857)	0.0973 (0.0861)	0.0926 (0.0858)	0.0980 (0.0862)
Castile la Mancha	-0.371*** (0.0910)	-0.361*** (0.0916)	-0.367*** (0.0911)	-0.357*** (0.0917)
Catalonia	0.643*** (0.0828)	0.642*** (0.0831)	0.641*** (0.0828)	0.643*** (0.0831)
Valencian Community	0.265*** (0.0844)	0.270*** (0.0848)	0.266*** (0.0845)	0.273*** (0.0849)
Extremadura	0.437*** (0.0999)	0.439*** (0.100)	0.433*** (0.100)	0.439*** (0.100)
Galicia	0.436*** (0.0839)	0.441*** (0.0842)	0.435*** (0.0840)	0.440*** (0.0843)
Madrid	0.222*** (0.0849)	0.225*** (0.0853)	0.213** (0.0850)	0.219** (0.0854)
Murcia	0.214** (0.0852)	0.223*** (0.0855)	0.214** (0.0853)	0.224*** (0.0856)
Navarra	0.289*** (0.0868)	0.286*** (0.0872)	0.280*** (0.0871)	0.282*** (0.0875)
Country Basque	0.399*** (0.0842)	0.403*** (0.0846)	0.402*** (0.0843)	0.408*** (0.0847)
La Rioja	0.329*** (0.102)	0.331*** (0.103)	0.326*** (0.102)	0.331*** (0.103)
Ceuta	0.286** (0.130)	0.301** (0.131)	0.292** (0.130)	0.307** (0.131)
Melilla	-0.0780 (0.134)	-0.0779 (0.135)	-0.0725 (0.134)	-0.0721 (0.135)
Constant	-1.307*** (0.0809)	-1.314*** (0.125)	-1.375*** (0.0818)	-1.359*** (0.125)
Observations	23,553	23,467	23,553	23,467

The odds ratio is reported. Standard errors in parentheses, \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Source:** self-elaborated

In turn, regarding specific human capital, Hypothesis 3 states that immigrants who possess managerial-business experience are more likely to perceive business opportunities than immigrants without this experience. Significant relationship was found between managerial-business experience and the perception of business opportunities in Model 4, while in Model 3 the results show a stronger relationship between these variables. Therefore, Hypothesis 3 was supported. Hypothesis 4 indicates that immigrants with entrepreneurial training are more likely to perceive business opportunities than immigrants without this formation. The findings for pooled sample support this hypothesis; there is a significant relationship between entrepreneurial education and the perception of business opportunities.

#### 4.2 Immigrants and natives

Table 3 and Table 4 report the outcomes of logistic regression analysis referring to the immigrant and natives sample in Spain. Regarding the analysis of variables referring to general human capital, our results show that education is not significant for perceiving opportunities by immigrants and by natives. Nonetheless, work experience seems to play an important role when perceiving business opportunities. We found that the immigrant sample (Table 3) reports that immigrants with work experience are more likely to perceive opportunities than those who do not have this experience. Also, for native people, the relationship between work experience and the perception of opportunities is significant and stronger than for immigrants. We found that native people (Table 4) who had work experience are more likely to perceive business opportunities than natives who do not.

Results of specific human capital analysis report that the relationship between

entrepreneurial formation and perception of business opportunities is significant for immigrants and natives. That is, immigrants who had some kind of entrepreneurial formation are more likely to perceive opportunities than those who do not. Similarly, natives who had some kind of entrepreneurial formation are also more likely to perceive opportunities than those who do not have this formation. Consequently, Model 4 reports a significant relationship between entrepreneurial formation and perception of business opportunities for natives and immigrants, as shown in Table 4. In terms of the role of managerial-business experience, results showed that this experience is not significant for perceiving opportunities by immigrants. In contrast, natives who possess managerial business experience are more likely to perceive business opportunities than those who do not possess this experience. Therefore, Hypothesis 5 was not supported.

Finally, in terms of control variables, we found that gender is statistically significant for immigrants and natives, although the relationship with the perception of opportunities is stronger for natives. This relationship showed that immigrant men are more likely to perceive business opportunities than immigrant women are. For the native sample, we found a significant relationship between age and perception of opportunities. This relationship showed that older people are less likely to perceive opportunities when compared to their younger counterparts. Moreover, results showed that the time of residence of immigrants is not significant for perceiving business opportunities in Spain. And, finally, autonomous communities are more significant to natives than to immigrants when perceiving business opportunities.

TABLE 3 – Logistic regression for immigrant sample

Variables	Model (1)	Model (2)	Model (3)	Model (4)
	Control	GHC	SHC	Full
<b>General Human Capital</b>				
More than 12 years of education		0.103 (0.124)		0.0840 (0.125)
Work status		0.290** (0.151)		0.293** (0.154)
<b>Specific Human Capital</b>				
Entrepreneurial Training			0.396*** (0.131)	0.413*** (0.132)
Managerial-business experience			0.0599 (0.169)	-0.0182 (0.173)
<b>Control variables</b>				
Gender	0.261** (0.114)	0.231** (0.115)	0.248** (0.115)	0.223* (0.116)
Age	-0.00530 (0.00522)	-0.00676 (0.00534)	-0.00427 (0.00530)	-0.00534 (0.00540)
Time of residence	-0.00156 (0.00593)	-0.00213 (0.00597)		-0.00203 (0.00599)
Autonomous Communities				
Andalucía (ref.)				
Aragon	0.118 (0.336)	0.133 (0.338)	0.102 (0.337)	0.117 (0.339)
Asturias	-0.0677 (0.330)	-0.0559 (0.331)	-0.142 (0.332)	-0.129 (0.334)
Balearic Islands	0.129 (0.377)	0.173 (0.380)	0.113 (0.377)	0.158 (0.381)
Canary Islands	-0.0371 (0.314)	-0.0420 (0.316)	-0.0581 (0.315)	-0.0634 (0.317)
Cantabria	0.523 (0.400)	0.493 (0.402)	0.546 (0.401)	0.520 (0.404)
Castile and Leon	-0.395 (0.354)	-0.361 (0.357)	-0.428 (0.355)	-0.378 (0.359)
Castile la Mancha	-1.205*** (0.387)	-1.248*** (0.396)	-1.226*** (0.388)	-1.255*** (0.398)
Catalonia	0.138 (0.338)	0.0854 (0.340)	0.134 (0.339)	0.0827 (0.341)
Valencian Community	-0.0754 (0.339)	-0.0645 (0.340)	-0.0708 (0.340)	-0.0425 (0.342)
Extremadura	-0.148 (0.498)	-0.183 (0.500)	-0.122 (0.500)	-0.140 (0.502)
Galicia	0.170 (0.359)	0.211 (0.361)	0.210 (0.360)	0.260 (0.362)
Madrid	-0.222 (0.303)	-0.218 (0.304)	-0.290 (0.305)	-0.280 (0.306)
Murcia	-0.142 (0.348)	-0.140 (0.350)	-0.162 (0.350)	-0.146 (0.352)
Navarra	-0.125 (0.361)	-0.179 (0.363)	-0.177 (0.363)	-0.227 (0.364)
Country Basque	-0.139 (0.353)	-0.111 (0.355)	-0.160 (0.354)	-0.124 (0.356)
La Rioja	-0.0594 (0.415)	-0.0254 (0.420)	-0.0718 (0.416)	-0.0369 (0.421)
Ceuta	-0.0798 (0.599)	-0.108 (0.602)	-0.133 (0.602)	-0.168 (0.604)
Melilla	-0.311 (0.489)	-0.335 (0.494)	-0.304 (0.491)	-0.336 (0.495)
Constant	-0.562* (0.323)	-0.498 (0.490)	-0.686** (0.327)	-0.568 (0.492)
Observations	1,487	1,470	1,487	1,470

The odds ratio is reported. Standard errors in parentheses, \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Source: self-elaborated

**TABLE 4** – Logistic regression for native sample

VARIABLES	Model (1)	Model (2)	Model (3)	Model (4)
	Control	GHC	SHC	Full
<i>General Human Capital</i>				
More than 12 years of education		-0.0345 (0.0355)		-0.0377 (0.0356)
Work status		0.138*** (0.0374)		0.115*** (0.0384)
<i>Specific Human Capital</i>				
Entrepreneurial Training			0.190*** (0.0367)	0.189*** (0.0368)
Managerial-business experience			0.128*** (0.0451)	0.0971** (0.0463)
<i>Control Variables</i>				
Gender	0.318*** (0.0309)	0.289*** (0.0318)	0.308*** (0.0310)	0.286*** (0.0318)
Age	-0.00369*** (0.00125)	-0.00375*** (0.00133)	-0.00343*** (0.00126)	-0.00354*** (0.00133)
Autonomous communities				
Andalucía (ref.)				
Aragon	0.702*** (0.0853)	0.701*** (0.0857)	0.701*** (0.0854)	0.703*** (0.0858)
Asturias	0.116 (0.0897)	0.124 (0.0901)	0.107 (0.0898)	0.117 (0.0902)
Balearic Islands	0.512*** (0.104)	0.502*** (0.105)	0.513*** (0.104)	0.505*** (0.105)
Canary Islands	0.249*** (0.0884)	0.253*** (0.0888)	0.248*** (0.0885)	0.252*** (0.0889)
Cantabria	0.597*** (0.103)	0.609*** (0.103)	0.600*** (0.103)	0.613*** (0.103)
Castile and Leon	0.123 (0.0886)	0.122 (0.0891)	0.123 (0.0886)	0.124 (0.0891)
Castile la Mancha	-0.318*** (0.0936)	-0.308*** (0.0942)	-0.314*** (0.0937)	-0.304*** (0.0942)
Catalonia	0.673*** (0.0853)	0.675*** (0.0858)	0.671*** (0.0854)	0.675*** (0.0858)
Valencian Community	0.284*** (0.0872)	0.289*** (0.0876)	0.285*** (0.0872)	0.293*** (0.0876)
Extremadura	0.466*** (0.102)	0.469*** (0.103)	0.463*** (0.102)	0.468*** (0.103)
Galicia	0.452*** (0.0863)	0.456*** (0.0867)	0.450*** (0.0864)	0.455*** (0.0868)
Madrid	0.252*** (0.0892)	0.257*** (0.0896)	0.248*** (0.0892)	0.254*** (0.0897)
Murcia	0.235*** (0.0881)	0.244*** (0.0885)	0.236*** (0.0882)	0.246*** (0.0886)
Navarra	0.312*** (0.0896)	0.311*** (0.0901)	0.306*** (0.0897)	0.308*** (0.0902)
Country Basque	0.431*** (0.0868)	0.434*** (0.0873)	0.434*** (0.0869)	0.440*** (0.0874)
La Rioja	0.351*** (0.106)	0.351*** (0.106)	0.347*** (0.106)	0.350*** (0.106)
Ceuta	0.307** (0.133)	0.323** (0.134)	0.314** (0.133)	0.330** (0.134)
Melilla	-0.0689 (0.140)	-0.0675 (0.141)	-0.0638 (0.141)	-0.0616 (0.141)
Constant	-1.336*** (0.0833)	-1.347*** (0.129)	-1.400*** (0.0842)	-1.390*** (0.129)
Observations	22,066	21,997	22,066	21,997

The odds ratio is reported. Standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Source:** self-elaborated



### 4.3 Robustness check of models

Tests were carried out to assess models' robustness. For our models, the Model  $\chi^2$  test is considered. The Model  $\chi^2$  test compares observed values with theoretical or expected values. It is the difference between the  $-2\text{Log L}$  of the fitted model and the  $-2\text{Log L}$  of the null hypothesis

model. This test was used in some studies for the same purposes (ARENIUS; MINNITI, 2005; LE, 2000; LI, 2001). Also, in Table 5 is showed the Pseudo  $R^2$  which indicates the variance explained by our models. And finally, the overall hit rate is considered in order to test whether the addition of the predictor variables led to a significant improvement of the model.

**TABLE 5** – Robustness check of models

	Pooled	Immigrants	Natives
<i>Model <math>\chi^2</math></i>			
Control variables	427.75***	35.226**	384.135***
GHC	446.217***	42.045***	400.020***
SHC	469.953***	44.703***	419.687***
Full	483.673***	52.218***	430.719***
<i>Pseudo <math>R^2</math></i>			
Control variables	0.0156	0.0190	0.0151
GHC	0.0164	0.0228	0.0157
SHC	0.0172	0.0241	0.0165
Full	0.0177	0.0283	0.0170
<i>Overall hit rate</i>			
Control variables	73.27	68.26	73.60
GHC	73.22	68.30	73.57
SHC	73.27	68.66	73.60
Full	73.23	68.23	73.57

Table shows chi-squared values with degrees of freedom in parenthesis

Significant at 95% \*, significant at 99% \*\*

**Source:** self-elaborated

## 5 DISCUSSION AND CONCLUSION

Based on the findings above, logistic regression was used to predict the propensity of perceiving business opportunities by immigrants, and then, compare the results to that of native people. To do so, 2008 Spanish GEM data was used. Some variables referring to general and specific human capital were considered, in order to analyze the likelihood of these variables upon the perception of business opportunities. The discussion of this study is based on the comparison of results with other studies that focused on immigrant entrepreneurship. It is

because the perception of business opportunities is really unknown in immigrant entrepreneurship literature and in this sense we hope this study will be pioneering, contributing to the topic concerning immigrants' perception of business opportunities.

Interestingly, in the outcomes of this study, general human capital showed that education is not significant to perceiving business opportunities by both natives and immigrants in Spain. These results are consistent with some studies on immigrant entrepreneurship and in general entrepreneurship literature (DAVIDSSON; HONIG, 2003). For instance,

Fernandez and Kim (1998) showed that Asian people with high levels of education are less likely to become entrepreneurs in the United States. In the same line of thought, education acquired in the country of origin by immigrants in Australia has a small and negative impact on the propensity of being entrepreneurs (EVANS, 1989; LE, 2000). Similarly, Kanas, Van Tubergen and Van Der Lippe (2009) found a strong negative effect of education in order to be an entrepreneur among immigrants in the Netherlands. It seems that our findings can be aligned with some studies in entrepreneurship which found that most educated entrepreneurs are suitable to work as professionals in the general labor market (KANAS; VAN TUBERGEN; VAN DER LIPPE, 2009; LE, 2000). Our result could be discussed and better analyzed for the Spanish case.

Regarding the other component of general human capital, work experience resulted important for perceiving business opportunities for both immigrants and natives in Spain. We provided several arguments to explain the positive effect of work experience in the process of perceiving business opportunities. Despite our variable only indicating whether the individual was working or not, this means they had a relationship with a specific market and sector, which increases the likelihood of perceiving opportunities. In this sense, our results showed that the work experience of individuals is more relevant than is education for perceiving opportunities. As was mentioned before, our results are consistent with studies that showed that experience acquired in the host country is more relevant and increases the propensity of engaging in business activities (BORJAS, 1986). Interestingly, Kanas, Van Tubergen and Van Der Lippe (2009) analyzed variables comparing human capital acquired at home and in the host country. For instance, experience acquired in the host country was relevant and had a positive effect on the decision of becoming an entrepreneur among immigrants in the Netherlands. This result seems reasonable because immigrants need to accumulate host-country work experience and develop skills to know how the market works. Similarly, Le (2000)

compared the work experience at home and in the host country and saw that the experience acquired in the Australian labor market is associated with a higher probability of being an entrepreneur, while an overseas labor-market experience is associated with a lower probability. In our case, we cannot distinguish between the kind of experience acquired, however our results showed a positive effect on the perception of opportunities.

Regarding specific human capital, we found that entrepreneurial formation is significant and has a positive effect on the perception of business opportunities for both immigrants and natives. This result is interesting in the analysis of immigrants because, if they had some kind of entrepreneurial formation, it is implicit that they would have the intention of creating a business or managing one. However, this variable could be analyzed more in future research, taking into account the kind of entrepreneurial formation that immigrants have and how it influences in the perception of business opportunities in Spain.

Managerial-business experience, as was mentioned before, is the experience that the individual acquired by managing or owning a business. Surprisingly, that managerial business experience is not significant for perceiving business opportunities among immigrants, while such experience is significant and has a positive effect for natives in Spain. These results suggest that this experience is not relevant for immigrants in the Spanish context, may be because the way of managing in their country of origin is different to manage in Spain. Therefore, these results should be better studied with other groups of immigrants and in other contexts to explore their relevance to the perception of business opportunities.

To summarize, our results show that some factors of general and specific human capital are more significant than others. For instance, work experience is more relevant than is education for perceiving business opportunities, for both immigrants and natives. And, entrepreneurial training resulted in a very significant relationship to perceive opportunities among immigrants and natives, as compared to managerial-business experience which was relevant only for natives. We

should consider that these results shed a bit light and portray the case of immigrants and natives in Spain in the process of perceiving business opportunities.

## 6 IMPLICATIONS AND FUTURE RESEARCH LINES

The perception of opportunities is an important stage of entrepreneurship, as mentioned by Shane and Venkataraman (2000) as well as the inflow of immigrants into developed countries. The mix of both issues – opportunities and immigrants – was our concern in this paper. Studying this issue is important because the moving of international migration has become a feature of developed countries. So, these countries receive thousands of international migrants yearly, in this sense it is interesting to know the profile of immigrants that enter in Spain, for example. Immigration creates new wealth and jobs, contributing to the regional and economic development of the host country. Great proportion of immigrants in Spain are self-employees, this is showed in the report of the INE and social security.

Considering the results of this study, some future lines of research could focus on the kind of immigrants in Spain, for example EU-nationals and non-EU nationals. An interesting question could be researched in the future, how do non-EU and EU-nationals recognize the opportunities in Spain? Surely both groups will have differences in their behavior and motivation to look for business opportunities. Moreover, immigrants usually have particular human capital which is acquired in their home country. Thereby, future studies could consider the human capital acquired in the home and the host country by immigrants to compare their relevance on business creation.

A key point in our results was the entrepreneurial formation factor which was significant to immigrants and natives in Spain. So, if entrepreneurial formation influences the perception of business opportunities, more entrepreneurial training could be implemented

targeting immigrant community. So, this study let to know the human capital of immigrants and how it influences in the perception of opportunities. These findings will be of interest to both practitioners and politicians as they provide useful insights on the role of human capital in perceiving business opportunities. Moreover, policymakers could use this information to promote self-employment among immigrants, to decrease the rate of unemployment and, consequently, the payment of unemployment security.

This study is also susceptible of limitations. We analyzed the human capital of immigrants as a group because our data did not allow us to group them by country due to the small number of observations. Despite this limitation, a novel contribution of this study is to shed some light on the process of perceiving business opportunities among immigrants who settled in Spain.

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