

# Do entrepreneurial role models influence the nascent entrepreneurial activity of immigrants?+

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# Do entrepreneurial role models influence the nascent entrepreneurial activity of immigrants?

## **Abstract**

*This paper examines how the influence of entrepreneurial role models in the individual's decision to become a nascent entrepreneur is moderated by their socio-cultural fit. By looking at the entrepreneurial activity of immigrants, the paper proposes that, because of their lower socio-cultural fit, immigrants are less likely to be influenced in their entrepreneurial activity by past and present entrepreneurs in the region where they live compared with the native population. Using a large database of 28,306 individuals in 50 Spanish provinces, the results confirm our hypothesis. The moderating effect of cultural distance and time of residence is also analyzed.*

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## ***Introduction***

For years the literature on the environmental determinants of entrepreneurial action has suggested that the presence of entrepreneurial role models in a region is one of the key factors fostering the creation of new firms (Bergmann and Sternberg, 2007; Fornahl, 2003; Gnyawali and Fogel, 1994, Sternberg, 2009; Wagner and Sternberg, 2004). A role model is a common reference to individuals who set examples to be emulated by others and who may stimulate or inspire others to make certain decisions (Bosma et al., 2012, Shapiro et al., 1978). It is understood that past and current entrepreneurs in a region are seen as role models and signal to other inhabitants in the region that creating your own business may be an attractive career alternative (De la Vega, Coduras, Cruz, Justo and González, 2006; Lafuente, Vaillant and Rialp, 2007). These entrepreneurial role models foster future entrepreneurial activity in the region by inspiring others to become entrepreneurs (Bosma et al., 2012). While the existence of entrepreneurial role models in a region is important, role models have been studied only to a limited extent by academics (Bosma et al., 2012).

The positive influence of the stock of entrepreneurs in a region on rates of entrepreneurship (Sternberg, 2009) rests on the implicit assumption that all the inhabitants see the local entrepreneurs as role models. In other words, it is believed that such role models exert a homogeneous influence on all the residents in the region. However, societies are heterogeneous and not everybody in a region may share the same view and perceive entrepreneurs in the same way. In this paper we challenge this assumption of homogeneity and make a contribution to the literature in showing that the influence of entrepreneurial role models in a region is not homogeneous across its population. More specifically, we argue that immigrants in a particular region are not as inclined as the native population to regard past and existing entrepreneurs in a region as inspirational role models. We would expect immigrants, in general, to show a lower

degree of what we call socio-cultural fit. By socio-cultural fit we mean an individual's understanding of and acquiescence to the social values, goals, norms and rules, as well as cultural symbols that predominate in their geographical region of residence. Factors such as the language spoken, education, religion and social status, among others, may influence an individual's degree of socio-cultural fit, and ultimately what they perceive and how they interpret what others do. Consequently, it is our contention that past and present entrepreneurs in a region have a low influence in the decision of residents with lower socio-cultural fit to ~~start-up a business~~ become nascent entrepreneurs; a low degree of socio-cultural fit impedes the perception of such role models. Following the widely accepted and used definition offered by the Global Entrepreneurship Monitor (GEM), a nascent entrepreneur is anybody who, alone or with others, is currently in the process of setting up a business that he or she will (partly) own and that has not yet paid wages or salaries for more than three months (Reynolds et al., 2005)

The literature on immigrants and immigrant entrepreneurship has long pointed to the difficulties they face in their host countries. Those difficulties have their origin in cultural, linguistic and even religious differences that provide the basis for socio-cultural fit. We argue that as immigrants show a lower degree of socio-cultural fit than the native population, we expect a weaker influence of past and present entrepreneurs in a region on the likelihood of immigrants becoming nascent entrepreneurs. Our "basic assumption" with regard to the notion of culture is, in Valsiner (2001)'s words, that "there exists a person within a context". More precisely, we recognize that immigrants live in a context (region) carrying their own culture and thereby with a lower degree of socio-cultural fit than native population. This degree of socio-cultural fit will improve as the time of residence and the exposure to the dominant culture increases.

Consequently, we also analyze how the impact of the stock of entrepreneurs in a region varies with cultural distance and the immigrant's time of residence in the region. Within our framework

socio-cultural fit would be lower for individuals with high cultural distance and shorter time of residence in the region. Thus, we expect a weaker influence of entrepreneurial role models on the likelihood of being a nascent entrepreneur for those individuals with bigger cultural distances and shorter time of residence. As time of residence in a host region increases immigrants improve their degree of socio-cultural fits since immigrants, irrespective of their cultural distance, once have established in a region, begin to construct their (new) culture together with “the others” (Valsiner, 2001). As a result, immigrants, in particular those immigrants that more frequently interact with native population, will improve their socio-cultural fit over time and will be more exposed to the influence of entrepreneurial role models.

This paper makes ~~two main~~ several important contributions to the literature, in its examination of the heterogeneous impact of the stock of past and existing entrepreneurs in the region over the residents’ likelihood of creating enterprises and in presenting the concept of socio-cultural fit to understand such uneven influence. First, the paper provides new theoretical insights and evidence on how individual and environmental level variables interact to shape individual decisions to create a firm. Although several scholars have emphasized that the decision to create a firm is the result of a complex process in which both individual and contextual level factors play a key role (e.g. Gartner, 1985; Kessler and Frank, 2009; Mitchell et al., 2007; Shane, 2003; Van Gelderen, Thurik and Bosma, 2006), research has evolved mainly along two separate streams (Shane, 2003): the individual-centric stream which considers the individual characteristics relating to the observed entrepreneurial behavior and the environment-centric stream, which attempts to understand the environmental conditions that favor the entrepreneurial activity of regions. ~~Although the relatively recent~~ The elaboration of datasets covering large number of individuals in different environments have opened new opportunities to blend together these two separate but complementary streams of the literature. This has promoted research effort

with a broader perspective that considers factors that may affect entrepreneurship from different levels of analysis, developing a configurational view of nascent entrepreneurship (e.g. Kessler and Frank, 2009; Van Gelderen, Thurik and Bosma, 2006). However, while these papers take a necessary broad perspective to explain entrepreneurship, with the exception of a ~~only~~ few notable attempts ~~to do so have been made to date~~ (for example Bergmann and Sternberg, 2007; Gnyawali and Fogel, 1994; Wagner and Sternberg, 2004) none of them looked at the interplay between the individual and the context. In a recent article, Gartner and Shaver (2012) stressed the importance to better understand interactions among individual, firm, and environmental variables, or those moderating the effect of individual, firm, and environmental variables. The present article takes a step in that direction. Specifically, we develop an argument that explains how the influence of an environment level variable (i.e. role models in the region) on the individual decision to become a nascent entrepreneur is moderated by an individual level variable (i.e. level of socio-cultural fit attached to the immigrant or native condition of the individual).

Second, by looking at the entrepreneurial role models-immigrant interaction, the study provides new evidence on the factors that may influence the entrepreneurial activity of immigrants in a distinctive manner. As pointed by Davidsson (2006: 30), “the issues of ethnicity, minorities and immigrants have so far not been much analyzed in the nascent entrepreneurship research”. Third, it applies the concept of cultural distance, first developed in the domain of international management (Kogut and Singh, 1988), but also applied in the field of strategic management (Gomez-Mejia, Makri, and Larraza-Kintana, 2010) to the entrepreneurship field. The paper also adds to the literature on the culture-related determinants of entrepreneurial action (for example Mitchell, Smith, Seawright and Morse, 2000), offering insights on how the entrepreneurial role models-cultural distance interaction affects the likelihood of becoming an

entrepreneur. Finally, it also provides evidence of the role played by the immigrant's time of residence in the region.

The paper is organized as follows. In the next section we develop the hypotheses that summarize our conceptual proposal. Section three presents the database and the variables to be used in the statistical analyses conducted to test our hypotheses. The results are described in section four. Section five sets out our conclusions.

### ***Theoretical framework: hypotheses development***

The entrepreneurial activity of individuals is influenced by their personal characteristics but also by the environment that surrounds them (Shane, 2003). Access to financial funds, the presence of technically skilled labour force, population density or simply the degree of economic growth are among the environmental factors often cited in the literature as relevant for the understanding of the entrepreneurial activity of a region (for example Bergmann and Sternberg, 2007; Gartner, 1985; Reynolds, Storey, and Westhead, 1994; Tamásy, 2006). The existence of a social environment conducive to entrepreneurship has also been underlined as a key factor to explain the entrepreneur's decision to start up a new firm: "In fact, social factors may be equally important as availability of loans, technical assistance, physical facilities, and information" (Gnyawali and Fogel, 1994: 46).

The existence of a stock of individuals who decided to create their own firms (i.e. entrepreneurs) is considered one of the most relevant elements of these social conditions by the environment-centric stream of nascent entrepreneurship literature (Fornahl, 2003; Lafuente et al., 2007; Sternberg, 2009). Entrepreneurial role models have a profound influence on career decisions (Krumboltz et al., 1976), as their presence "in a community or country conveys a

message to the potential entrepreneurs that business is an attractive career option” (Gnyawali and Fogel, 1994: 49). Besides inspiring and motivating people to get started, the existence of past and current entrepreneurs in a region also has a positive effect on individual decisions to create a business because they make people confident of achieving a certain goal, and provide a knowledge base that allows prospective entrepreneurs to learn either by example, advice or support (Bosma et al., 2012)<sup>1</sup>. At the same time variations in the proportion of these role models across regions would signal differences in entrepreneurial culture. Regions with a high proportion of business owners have a different entrepreneurship culture or climate than regions with a low percentage of individuals who own a business. These cultural differences can potentially account for some of the observed differences in entrepreneurial activity among regions (Giannetti and Simonov, 2004). A high rate of new firm formation points to a climate favorable for start-ups (Wagner and Sternberg, 2004). This reasoning is also rooted in the cultural psychology perspective which views culture and personality as “mutually constitutive” and as “making each other up” (Markus et al, 1996; Miller, 1997). As such, those regions with higher proportions of business owners will stimulate, through the creation of a culture favorable for start-up, the launching of new firms by latent entrepreneurs while and these same time these new entrepreneurs reinforce such a prevalent culture. This will create a virtuous circle which would favor and stimulate individuals to be involved in the process of creating a new firm in those regions with higher proportions of business owners. Hence, it is expected that the existence of entrepreneurial role models in the region positively influences the likelihood to become a nascent entrepreneur. Thus:

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<sup>1</sup> Bosma et al. (2011) state that the “inspiration and motivation” as well as the “increasing self-efficacy” functions of role models result from role identification theory (Kagan, 1958; Bell, 1970) whereas the “learning by example” and “learning by support” are implied by social learning theory (Bandura, 1977, 1986; Gibson, 2004) .



~~The notion that past and current entrepreneurs in a region constitute entrepreneurial role models that favor the entrepreneurial activity of the individuals who live in the region, represents the starting point for our analysis, and as such is summarized in our first hypothesis.~~

*Hypothesis 1.* The existence of entrepreneurial role models in the region has a positive effect on the individual decision to become a nascent entrepreneur.

### **Socio-cultural fit: the case of immigrants**

While environmental factors or conditions in a region may favor or discourage global rates of entrepreneurial activity, not all individuals living in that region will respond equally to those environmental conditions. The possibility of a heterogeneous response by individuals to role models at the regional level has been omitted in the environment-centric literature, whose focus has always been to explain global rates of entrepreneurship. The recognition that individuals are heterogeneous is, on the contrary, a central element of the individual-centric stream. However, this stream has overlooked the environment and how the individuals respond to environmental characteristics. As noted before this individual – environment interaction needs to be better understood to enlarge our knowledge of nascent entrepreneurship (Garner and Shaver, 2012). In this setting ~~In particular,~~ it is our contention that ~~their~~ individual decisions to create an enterprise will not be influenced in ~~the same~~ a homogeneous way by the entrepreneurial role models in the region. As indicated earlier, role models are common references to individuals who set examples to be emulated by others and who may stimulate or inspire other individuals to make certain decisions (Bosma et al., 2012, Shapiro et al., 1978). Hence, whether an individual or group of individuals becomes a role model is a function of how others perceive them. Such a perception may depend on several factors. We argue that the socio-cultural fit of individuals greatly shapes those perceptions, as it encompasses key elements in defining a person's understanding of and

interaction with the surrounding environment. Specifically, in the case of the stock of entrepreneurs in a region, the degree of socio-cultural fit determines the extent to which an individual sees those entrepreneurs as inspirational role models. When socio-cultural fit is low, individuals are less likely to perceive entrepreneurs in the region as role models.

By definition, low socio-cultural fit implies a limited understanding of and acquiescence to the social values, goals, norms and rules, as well as cultural symbols that predominate in each geographical region. Hence, when socio-cultural fit is low individuals are relatively isolated from the stimulus of the surrounding socio-cultural environment. In such cases, the stock of current and past entrepreneurs in a region is less likely to achieve the status of role model (that is be seen as inspirational examples). First, individuals with low socio-cultural fit simply may not be aware of their existence and activity. Second, these individuals may not understand what the role of entrepreneurs is in that society. Third, they may not agree with the generally positive image their society has about entrepreneurs (that is may not agree with the view of entrepreneurs being an “icon” of progress and social wellbeing). Finally, individuals with low socio-cultural fit may see entrepreneurs as a different social group (as a social elite), one that they do not belong to, and therefore may not identify with them (Tajfel and Turner, 1979).

Immigrants show a lower degree of socio-cultural fit and consequently are less exposed to and influenced by the entrepreneurial role models in their regions of residence. An immigrant is defined as a foreign-born individual ( Baycan-Levent and Nijkamp, 2009; Hammarstedt, 2004). The literature analyzing immigrants and particularly the one exploring their economic and entrepreneurial activity indicates that these individuals face several barriers in their host countries. Those barriers hinder immigrants’ social integration, leaving them relatively isolated from the local community (Bonacich, 1973; Vinogradov and Elam, 2010). Immigrants arrive to the host country carrying their own culture. The differences in culture and cultural and even in

religion between the immigrants and host country natives can be cited as part of ~~religious differences vis-à-vis the host country are among the forces that cause~~ these difficulties (Vinogradov and Elam, 2010). Language can be another source of barriers for newcomers. Language enables interpersonal communication and access to social and economic networks. Often immigrants move to countries that speak a language different from their mother tongue. This difference can increase immigrants' isolation and obstruct their adaptation and cultural assimilation to the host environment. In addition, newcomers often show ignorance of government regulations, poor understanding of local market forces and consumer behavior, lack the ability to source information, show difficulties in marshalling the necessary resources and have poor business networks (Clydesdale, 2008; Levie, 2007).

The above mentioned cultural, religious and language barriers will result in immigrants showing a lower socio-cultural fit compared with the native population. First, those barriers hamper the immigrants' capacity to understand the surrounding socio-cultural environment, and also increase social isolation (Bonacich, 1973; Levie, 2007). Second, it is likely that immigrants will identify themselves with their ethnic group and try to keep their distance from other social groups which they perceive they do not belong to. According to social identity theory (Tajfel and Turner, 1979), identity is a self-categorization based on the individual perception of classes in the social world. Given those barriers, immigrants are more likely to identify themselves with their ethnic group and engage in actions aimed at accentuating differences, seeking to reinforce their social self-image even at the expense of negatively stereotyping others (Rao, Davis, and Ward, 2000). In other words, immigrants, in particular those that interact less with native population, may rise group and personal barriers that protect their own culture from external influences. This process may result in lower acquiescence to the dominant social norms and cultural symbols in their region of residence.

As a consequence of this claimed lower degree of socio-cultural fit, immigrants are less exposed to the social characteristics of the environment that surrounds them. Thus the positive influence of entrepreneurial role models of a region in a resident's likelihood of becoming a nascent entrepreneur (as per Hypothesis 1) is lower for immigrants. This contention is reflected in our second hypothesis.

*Hypothesis 2.* The influence of entrepreneurial role models in the region on the likelihood of becoming a nascent entrepreneur is smaller for immigrants than for natives.

### **Cultural distance**

Socio-cultural fit of immigrants may vary with the cultural distance between the immigrant's country of origin and the host country. At a national level, culture is an aggregate of individual values (Tihanyi et al., 2005). More precisely, individuals share common values and norms (for example the role that men and women must play in society and the way in which young people are to be educated) which, in turn, shapes the views of individuals equally. Cultural distance – that is, differences between national cultures – between the home and the host country may play a role in determining the degree of socio-cultural fit. Different cultures hold different beliefs and understand social relationships in a different manner (Hofstede, 1980). Thus, cultural distance signals differences in mind-sets and values that may be central to understanding socialization processes in hosting countries. Socio-cultural fit will be higher for those coming from countries that are culturally close to the hosting country. While the entrepreneurial mind-sets may not change across cultures (Mitchell et al., 2000), there are cultural differences that may be manifested in higher or lower degrees of socio-cultural fit. To the extent that culture proximity is related to language, it may also be possible to observe lower idiomatic barriers for those who migrate from countries that are close in cultural terms. For example, according to Hofstede

(1980) Spanish-speaking countries share cultural similarities. We therefore expect a weaker influence of entrepreneurial role models on entrepreneurial activity as the cultural distance of the individual increases, and, in its turn, a stronger influence as the degree of socio-cultural fit increases. This idea is summarized in our third hypothesis.

*Hypothesis 3.* The influence of entrepreneurial role models in the region on the likelihood of becoming a nascent entrepreneur increases as the individuals' cultural distance decreases.

### **Time of residence**

Time of residence in the region is another factor that may determine the degree of socio-cultural fit of an immigrant. Over time immigrants will not only learn about local culture or social relationships but they will also start constructing “a new culture” together with others in a context in which person and culture are “make each other up” (Vasliner, 2000). Then, the disadvantages and barriers faced by immigrants tend to disappear, or at least to reduce, over time, leading to improvement in socio-cultural fit. This will be particularly true for those immigrants that more frequently interact with native population.

In addition, time in the region allows immigrants to gather better knowledge of labor market characteristics, government regulations, bureaucratic processes and resource networks (Levie, 2007). Language-related barriers also tend to disappear as time enables the newcomer to learn the local language, thus increasing their communication capacity. Better communication skills increase immigrants' chances to meet new people, in particular, the native population. Meeting new people provides the immigrant with new sources of information about the goals, norms, rules and values that govern social exchange and life in the region of residence. The immigrant not only goes through a process of acculturation and assimilation to the new environment (Borjas,

1986), learning about the surrounding socio-cultural context but they also participate in the ongoing process of culture construction.

Throughout this process the newcomer is likely to have reduced the barriers that hinder the previously defined socio-cultural fit. Consequently, as time of residence in a region increases, local past and present entrepreneurs are more likely to be seen as entrepreneurial role models and their influence on the entrepreneurial intentions of the immigrant will increase. Our final hypothesis reflects this idea.

*Hypothesis 4.* The influence of entrepreneurial role models in the region on the likelihood of becoming a nascent entrepreneur increases as the immigrant's time of residence increases.

Figure 1 captures the model of relationships implied by our hypotheses.

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INSERT FIGURE 1 ABOUT HERE

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## ***Methods***

### **Database**

The database contains both personal and regional variables. Individual observations were gathered from the ~~Global Entrepreneurship Monitor (GEM)~~ survey run in Spain in 2006. This dataset contains a sample of 28,306 individuals interviewed using the same methodology that GEM applies across more than 40 countries.<sup>2</sup> This large sample of the adult population (18-64 years of age) was designed to be representative of the Spanish regions. Consequently, individuals

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<sup>2</sup> The complete interview schedule can be downloaded from the GEM website ([www.gemconsortium.org](http://www.gemconsortium.org)).

from the 50 Spanish provinces are represented in the database. Provinces are administrative divisions that, among other things, are used as statistical units by the Instituto Nacional de Estadística (INE).<sup>3</sup> The INE measures several factors at the provincial level that may be relevant to determine start-up activity.

The GEM dataset identifies the respondent's province of residence. The database used to develop these analyses matched up information on individuals and regions (that is provinces). This allows us to advance in the integration of ~~blend~~ the individual and the environment-centric research streams of entrepreneurship, by merging individual level as well as regional or environmental level information.

### **Variable measurement**

This paper analyses what determines an individual's decision to become ~~an entrepreneur, it~~ focuses in particular on what the GEM project defines as a *nascent entrepreneur*. A nascent entrepreneur is anybody who is currently in the process of setting up a business that he or she will (partly) own and that has not yet paid wages or salaries for more than three months (Reynolds et al., 2005). The variable nascent entrepreneur takes the value 1 if the interviewed person fits this definition and 0 otherwise. The proportion of nascent entrepreneurs in Spain in 2006 was 3% (De la Vega et al., 2006).

Figure 2 shows the variation in the percentage of nascent entrepreneurs across the Spanish regions (province). This variation suggests that regional factors may play a role in explaining nascent entrepreneurial activity, beyond the explanatory power of personal characteristics.

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<sup>3</sup> This is the Spanish National Bureau of Statistics. Spanish provinces are classified as NUTS-3 in Eurostat. The Nomenclature of Territorial Units for Statistics, (NUTS, for the French nomenclature d'unités territoriales statistiques), is a geocode standard for referencing the administrative divisions of countries for statistical purposes within the European Union.

Variations in the rates of nascent entrepreneurial activity respond to different and potentially complex reasons, that involve both individual as well as context related factors. Among the set of reasons that may be cited to explain the variation in nascent entrepreneurship rates, we would point the historical differences between regions in economic structure and development that are reflected, among other things, in the differences in the proportion of employers and self-employed individuals (i.e. entrepreneurial role models), the focus of the present article.

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INSERT FIGURE 2 ABOUT HERE

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The variable *entrepreneurial role models* is measured by the proportion of employers and self-employed people among the working population in the region. This variable captures the stock of past and present entrepreneurs in the region, serving as proxy for the regional entrepreneurial milieu.

Within the GEM project an immigrant is anyone born outside the country under study, in this case Spain. This is consistent with definitions of immigrant used in previous studies (for example Hammarstedt, 2004; Levie, 2007). Immigrant status is measured through a dummy variable that takes a value 1 when the respondent is an immigrant and 0 otherwise.

The *cultural distance* measure is based on the cultural distance index developed by Kogut and Singh (1988). It uses Hofstede's four cultural attribute scores (that is, individualism, masculinity, uncertainty avoidance and power distance) to compute for each individual a score of the cultural distance between the country of origin and the host country (that is Spain). The cultural distance (CD) for each individual in the database was calculated as follows (as per Kogut and Singh, 1988):

$$CD_{os} = \sum_{i=1, \dots, 4} [(D_{io} - D_{is})^2 / V_i] / 4,$$



where  $D_{io}$  reflects the value assigned to the individuals' country of origin (o) on cultural dimension i, on Hofstede's web page ([www.geert-hofstede.com](http://www.geert-hofstede.com)).  $D_{is}$  is the value allocated to Spain in the same data source for cultural dimension i.  $V_i$  is the variance of the index for cultural dimension i. The score  $CD_{os}$  is higher, the greater the cultural distance between the country of origin and Spain. It takes value 0 for individuals born in Spain.

To capture *time of residence* we compute a dummy variable that takes value 1 for immigrants that have been in Spain for less than five years. The five year cut-off to identify recent immigrants has been used in previous research on immigrant entrepreneurship (Levie, 2007). Examination of the distribution of immigrants according to their time of residence shows that half of them had lived for six years or less in Spain. In particular, 857 out of the 1619 immigrants in the sample had been in Spain for six years or less and 576 of them reported residence of less than five years.

Based on previous research we control for several individual characteristics, as well as for key environmental variables. In terms of personal variables we measure gender, age, education, fear of failure and the presence of role models at the micro level (Bergmann and Sternberg, 2007; Hammarstedt, 2004; Levie, 2007). *Gender* is a binary variable that takes the value 1 for males and 0 for females. *Age* is a continuous variable that indicates the age of the respondent; the square of this variable is also included in the models estimated later to account for the potential inverted U-shaped effect of age on the propensity to become an entrepreneur. *Education level* is a dummy variable that takes the value 1 for bachelor graduates and 0 otherwise. *Fear failure* is another dummy variable that in this case approximates the individual's tolerance towards risk (van der Zwan et al., 2012). It takes a value 1 when the person declares that fear of failure will prevent him or her from starting a business. It takes a value 0 when his or her answer is no. The last personal variable is named *know entrepreneur* and to some extent captures the person's

network of interpersonal relationships. This variable takes the value 1 when the respondent states that in the past two years she or he has personally known someone who started a business and 0 otherwise. In a sense, it reflects the respondents' exposure to entrepreneurial initiatives. Our focus is on the stock of role models at the regional level. But individual action may also be influenced by the existence of role models at the micro level. To better gauge the influence of entrepreneurial role models at the macro level, we control for the existence of entrepreneurial role models at the micro level through the "know entrepreneur" variable.

As to the regional (that is provincial) variables, we control for GDP per capita, population density, population growth, GDP per capita growth and unemployment growth (Bergmann and Sternberg, 2007; Reynolds et al., 1994). *GDP per capita* reflects the value of the GDP per capita of each province in 2006. A population density/agglomeration effect is also included. These effects are captured in the models through *population density*, which is measured as the number of inhabitants per km<sup>2</sup>. Two variables are used to capture changes in demand: *population growth* and *GDP per capita growth*. The former is measured as the average yearly change in the province's population in the period 2004-2006; the latter as the average yearly change in the province's GDP per capita in the same period. The fourth variable in the set of regional factors – *unemployment* – is calculated as the average yearly change in unemployment rates in the 2004–2006 period. Initially the regional rate of unemployment in 2006 was also included in the estimations. However, this variable did not prove to be significant in any of the models and correlated strongly with other variables. The regional rate of unemployment was therefore removed from the final models.

## **Methodological approach Data analysis**

Given the nature of the dependent variable, and following previous research on the individual-environment interplay (for example Arenius and Minniti, 2005; Chlosta, Patzelt, Kein and Dormann, in press) we estimate logit models that include an interaction term as an independent variable ~~are estimated~~. To avoid multicollinearity concerns, the continuous variables involved in the interaction are centered prior to its inclusion in the model and before the value of the interaction is computed. As it is custom, in the different specifications we present to test our hypotheses we first estimate a model that only contains the main effects of the independent variables, followed by a model that adds to the former the interaction effect. The logit models we specify estimate the probability of becoming a nascent entrepreneur as compared to non-nascent entrepreneurs. In our analyses non-nascent entrepreneurs are individuals who never intended or decided to start a business. This definition excludes current business owners. As they were nascent entrepreneurs at some point in the past, their inclusion in the group of non-nascent entrepreneurs may confound the analyses. Hence, we have removed them from our dataset.

Given that individuals are nested within provinces, our dataset is multilevel. To account for the potential noise that this multilevel structure may introduce in the estimations through biased standard errors, robust standard errors (Moulton, 1990) are computed and reported. In addition, multilevel models allows us to escape from the ecological fallacy which extrapolates the relationships estimated at one level of analysis (e.g. collectivities) to another level (e.g. individuals) (Grennes, 2012) as well as the reverse fallacy (i.e. using results across all individuals to make statements about the value differences between macro units –regions, countries-). These models carry out an analysis at the individual level acknowledging that clustering occurs in the population. More precisely, the multilevel technique provides a formal ways of achieving ecological inference with data representing multiple levels of analysis (Taras and Stell, 2009).

## **Results**

Table 1 shows the results of the logit models estimated to test Hypotheses 1 and 2. Hypothesis 1 stated the positive influence of entrepreneurial role models in the region on the likelihood of becoming a nascent entrepreneur. As can be seen in the results reported in Table 1, we find strong support for the positive influence of entrepreneurial role models in the region on individual intentions to become a nascent entrepreneur. The coefficient of the entrepreneurial role models variable is positive and highly significant in all equations. Note that this macro level effect is significant after having controlled for the presence of role models at the individual micro level or “the individual’s *egocentric* network structure to entrepreneurial activity” (Stuart and Sorenson, 2005) ~~(that is whether or not the individual knows an entrepreneur personally)~~.

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INSERT TABLE 1 ABOUT HERE

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The results of the analyses also support Hypothesis 2, which predicted a smaller effect of entrepreneurial role models in the region on immigrants’ likelihood of becoming nascent entrepreneurs. The negative and significant effect ( $\beta = -0.0847$ ,  $p = .007$ ) of the interaction term *Entrepreneurial role models x Immigrant* is consistent with this prediction. Note that the parameter estimate is significantly equal to that of the main effect of the variable entrepreneurial role models, but with the opposite sign. This means that in fact the entrepreneurial role models in the region do not affect the decision of immigrants to become nascent entrepreneurs.

To gauge a more precise picture of the interaction term just discussed, we plot the interaction displayed in Table 1. Entrepreneurial activity and entrepreneurial role models appear in the vertical and horizontal axes, respectively. As is the custom in these representations, low (one standard deviation below the mean) and high (one standard deviation above the mean) values of

entrepreneurial role models are taken into account (Chlosta et al., in press). Plots represent the influence of entrepreneurial role models for immigrants and native population (Figure 3).

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INSERT FIGURE 3 ABOUT HERE

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As can be seen in Figure 3, the chance to engage in entrepreneurial activities is, in global terms, higher for immigrants. However, consistent with our prediction, this effect is independent of the stock of entrepreneurs in the region. On the contrary, the likelihood of native residents becoming entrepreneurs rises with the presence of entrepreneurial role models in the region, such that the likelihood of becoming an entrepreneur in regions with a large stock of past and present entrepreneurs is virtually the same for immigrants and native inhabitants. Hence, and fully consistent with our proposal, Figure 3 clearly illustrates that entrepreneurial role models in the region positively influence natives' decisions to start an enterprise but have no effect on those of immigrant residents.

Table 2 contains the result of the logit model estimated to test the effect of cultural distance advanced by Hypothesis 3. This stated that the influence of entrepreneurial role models in the region on the likelihood of becoming an entrepreneur increases as the cultural distance of the individual decreases. In order to test this hypothesis we replace the immigrant status dummy variable specified in the models in Table 1 with the cultural distance variable described above. Recall that this variable takes value 0 for natives. The estimated coefficient of cultural distance is positive and significant ( $\beta = 0.5116$ ,  $p = .000$ ), suggesting that the likelihood of entrepreneurship may increase with cultural distance. As implied by Hypothesis 3, the interaction of cultural distance and entrepreneurial role models is negative and significant ( $\beta = -0.0476$ ,  $p = .039$ ). This result provides strong support for Hypothesis 3.

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INSERT TABLE 2 ABOUT HERE

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Figure 4 further supports Hypothesis 3. Figure 4 represents the influence of entrepreneurial role models for individuals with high (one standard deviation above the mean) and low (one standard deviation below the mean) cultural distance. It shows that the influential role of the entrepreneurs in the region diminishes as the cultural distance of the individual increases.

~~In order to obtain a more precise picture of the interaction terms just discussed, we plot the interactions displayed in Tables 1 and 2. Entrepreneurial activity and entrepreneurial role models appear in the vertical and horizontal axes, respectively. As is the custom in these representations, low (one standard deviation below the mean) and high (one standard deviation above the mean) values of entrepreneurial role models are taken into account (Chłosta et al., in press). Plots represent the influence of entrepreneurial role models for immigrants and native population (Figure 2) and for individuals with high (one standard deviation above the mean) and low (one standard deviation below the mean) cultural distance (Figure 3).~~

~~As can be seen in Figure 2, the chance to engage in entrepreneurial activities is, in global terms, higher for immigrants. However, consistent with our prediction, this effect is independent of the stock of entrepreneurs in the region. On the contrary, the likelihood of native residents becoming entrepreneurs rises with the presence of entrepreneurial role models in the region, such that the likelihood of becoming an entrepreneur in regions with a large stock of past and present entrepreneurs is virtually the same for immigrants and native inhabitants. Hence, Figure 2 clearly illustrates that, as we proposed, entrepreneurial role models in the region positively influence natives' decisions to start an enterprise but have no effect on those of immigrant residents.~~

Similarly, Figure 3 shows that the influential role of the entrepreneurs in the region diminishes as the cultural distance of the individual increases.

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INSERT FIGURE 4 ABOUT HERE

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Finally, Table 3 contains the results of the model estimated to test the accuracy of Hypothesis 4. Hypothesis 4 anticipated an increase in the influence of entrepreneurial role models in the region on the likelihood of becoming an entrepreneur as the immigrants' time of residence in the region increases. To test this hypothesis, and consistent with previous research (e.g. Levie, 2007; Reynolds and White, 1997), we have replaced the original immigrant status dummy with another one that takes value 1 only if the immigrant has less than five years of residence in the region. We would expect a stronger negative effect of the *Entrepreneurial role models x Immigrant* interaction for these short-time residents. The estimated coefficient for this interaction ( $\beta = -0.1198, p = .022$ ) is greater than the one we obtained for all immigrants in Table 1 ( $\beta = -0.0847, p = .007$ ). While this difference is consistent with our prediction, the difference is not statistically significant, meaning that reductions in the time of residence do not imply significant increments in the influence of entrepreneurial role models. Therefore we find no support for Hypothesis 4. It is important to note that these results are robust to alternative cut-offs for the minimum time of residence (i.e. 5 years). For the sake of simplicity and coherent with previous papers, we decided to report only the results obtained with the 5 year cut-off.

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INSERT TABLE 3 ABOUT HERE

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As regards the effect of the control variables, we can observe that most of the personal characteristics are highly significant and have the expected signs. Importantly, the results are consistent across all the different models we estimated. Males are more likely to become nascent entrepreneurs than females, while individual fear of failure inhibits business creation. There is an inverted U-shaped relationship between age and the likelihood of becoming an entrepreneur. Immigrants are more likely to start a new business and ~~This result is similar to those obtained in several papers which have analyzed the relationship between immigrant status and the propensity to engage in firm creation (Baycan Levent and Nijkamp, 2009; Hammarstedt, 2001; Levie, 2007).~~ As expected, role models at the micro level are important determinants of nascent entrepreneurship: ~~the probability of becoming an entrepreneur rises for those who have personally met someone who started a business in the past two years.~~ Interestingly, education level is not significant; in Spain, graduates do not seem to show a higher propensity toward business creation.

Estimations concerning the regional level control variables are also stable across models. Specifically, ~~Results indicate that certain regional factors are more influential than others in determining the individual decision to create a new business.~~ population density and unemployment have a significant positive effect on individuals' propensity toward business creation. ~~Densely populated regions foster the inhabitants' decision to become an entrepreneur. This decision is also facilitated by an increase in the unemployment rate.~~ Regional GDP per capita, population growth and GDP per capita growth do not seem to play a relevant role. ~~The estimation of the models using multilevel/hierarchical techniques (Gelman and Hill, 2007) produced estimates that were fully consistent with the ones reported above. These estimations also confirmed that personal variables had a greater capacity than regional ones to explain the variance observed in individual decisions to become an entrepreneur. Individual level variables~~



account for approximately 88% of the total variance explained by all variables in the model, while regional level variables explain the remaining 12%.

### ***Discussion and conclusions***

Although role models are increasingly acknowledged as an influential factor in explaining the reasons for the choice of occupation and career, theoretical and empirical research aimed at establishing the importance of role models for nascent entrepreneurs is still scarce. Our study seeks to contribute to fill this knowledge gap, in three ways.

First, this paper has analyzed the influence of entrepreneurial role models in the region, a “macro level” variable, on the individual decision to become a nascent entrepreneur. Our results indicate that entrepreneurial role models in the region have a positive impact on the propensity to become a nascent entrepreneur. As noted, this macro effect holds even controlling for the existence of role models at the micro level. This result confirms predictions previously found in the literature (for example Gnyawali and Fogel, 1994 and Wagner and Sternberg, 2004 ) and it is of great importance for those who recommend public authorities to look for ways to improve the social visibility of entrepreneurs (for example De la Vega et al., 2006).

Second, the paper brings new insights on the largely proposed but rarely studied interactive effect of macro (that is environment) and micro (that is individual) level variables on entrepreneurial action. Specifically, we have proposed that the influence of entrepreneurial role models in the region on observed nascent entrepreneurship is moderated by the degree of socio-cultural fit showed by the decision-maker. Our results show that the influence of those entrepreneurial role models is significantly weaker for immigrants, a group of individuals whose degree of socio-cultural fit has been argued to be below that of native-born residents. In this vein

we have shown that rather than being homogeneous, the influence of the existing stock of past and present entrepreneurs in the region depends on the socio-cultural characteristics of the residents.

Third, the paper has explored how the impact of entrepreneurial role models varies with the cultural distance of immigrants as well as with their time of residence. In this particular matter we have seen that cultural distance seems to be more relevant than time in the region in defining the degree of socio-cultural fit, and consequently in determining the influence of the entrepreneurial role models in the region in the likelihood of creating a firm.

However, it is fair to recognize that to characterize cultures or individuals in broad cultural dichotomies may be overly simplistic. This may be a limitation of our paper, since immigrant status is measured by a dummy variable and we use Hofstede's four cultural attribute scores at a national level to compute for each individual in our data set a score of the cultural distance between his country of origin and Spain. Such a cultural distance, in turn, measures his degree of socio-cultural fit. Ideally, we should measure the socio-cultural fit of each individual collecting and using personal information (for example passing a questionnaire to all individuals of our data set).

Therefore, although acknowledging that our measure of the degree socio-cultural fit is an imperfect proxy we consider that it is good enough to respond to our research questions as it allows us to characterize the condition of immigrant better than the simple dummy variable "immigrant". In addition, our results are robust to changes in the way the phenomenon of immigration is measured. As such, the variable "cultural distance" has a positive and significant impact on the personal decision to create a new firm. This result would indicate that the higher the cultural distance the higher the propensity of becoming a nascent entrepreneur. Besides, both the interaction "Entrepreneurial role models x immigrant" and "Entrepreneurial role models x

Cultural distance” have a negative and significant impact on the decision to launch a new business venture. The latter indicates that the higher the cultural distance the lower the influence of regional role models on the personal decision to create a new firm.

Throughout the paper we have highlighted the importance of the person’s socio-cultural fit in to reach a better understanding of why some residents are more influenced than others by the environment surrounding them. This concept therefore provides a link between the macro elements and individual decisions. In our view it works as a filter that determines the type of environment the individual is exposed to. More specifically, it will define the exposure to environmental variables of a socio-cultural nature, like the existence of other individuals in the region who have created their own business. In this case we have proposed and confirmed that individuals with a lower socio-cultural fit (for example immigrants) are less likely to perceive past and current entrepreneurs as inspirational examples (that is role models) and therefore their presence in the region does not have the same positive influence as on native residents (Gnyawali and Fogel, 1994).

Our theoretical framework and study provide some new insights on the factors that may influence the entrepreneurial activity of immigrants. The present paper indicates that the linguistic, cultural and even legal barriers often faced by these immigrants reduce the influence that the presence of entrepreneurs in the region seems to have on individuals’ propensity to create firms. This does not mean, however, that immigrants are not affected at all by role models in their regions of residence. What we are suggesting here is that because of their lower socio-cultural fit they show weaker personal and cognitive ties with the population of past and present entrepreneurs in general, and with native ones in particular. Yet, they may feel closer to other immigrant entrepreneurs. As has been highlighted in the literature, immigrants’ entrepreneurial activity is partly determined by their embeddedness in social networks of immigrants

(Kloosterman, van der Leun, and Rath, 1999; Portes and Sensenbrenner, 1993) and even by cross-border social networks with their countries of origin (Portes, Haller, and Guarnizo, 2002).

In the light of our evidence, it would be of interest to study in the future whether there is a separate effect of native and immigrant entrepreneurial role models on immigrants' propensity to become entrepreneurs and how these separate role models interact with personal variables (for example time of residence in the region). It would also be interesting to distinguish between groups of immigrants (by nationality, regional or cultural origin, etc.). To the best of our knowledge there are no information sources at the regional level in Spain that separate employers and self-employed people into natives and immigrants.

The concept of socio-cultural fit has been used in this study in order to understand better the entrepreneurial activity of immigrants. However, the concept is more general. Consequently, it also serves to understand the entrepreneurial behavior of individuals that, for reasons that may differ from those of immigrants, also show a low degree of socio-cultural fit. Some of these natives with a low socio-cultural fit sometimes engage in entrepreneurial activities outside the formal economy (Webb, Tihanyi, Ireland, and Sirmon, 2009). According to our framework, the existence of public policies aimed, for example, at promoting the visibility of entrepreneurs may possibly have a low impact in their decisions, as these individuals' low socio-cultural fit would keep them relatively underexposed to the example of entrepreneurs in the formal economy.

While socio-cultural fit seems to decrease with the cultural distance between the country of origin and the host country, it is not clear how socio-cultural fit evolves with the time of residence in the region. At least the reported evidence is not definitive. ~~Immigrants who reside in the region for less than five years appear to be less influenced by local entrepreneurial role models than the whole collective of immigrants, but the difference is not conclusive.~~ As stated, the degree of socio-cultural fit of immigrants would improve as time of residence in the host

country increases since they learn about local culture at the same time that participate with “the others” in the on-going process of constructing the culture<sup>4</sup>. However, this may be true only for those immigrants who actively and frequently interact with native population. The immigrants who have less contact with native population would not play an active role in that process. Even for those immigrants that have more contact with native population the process of reducing the barriers which hamper their ability to both understand the surrounding socio-cultural environment and to play an active role in the creation of the “new culture” may take more time than expected. All this together may enlighten why time of residence does not seem to be as important as cultural distance in explaining the influence of role models in the personal decision of creating a new firm. In any case, further analyses are needed to strengthen research into the effect of time of residence.

While this paper presents novel ideas and evidence, it is fair to recognize that our work is not free of limitations. First, socio-cultural fit has been measured indirectly through immigrant status. Although we have provided arguments to support the lower socio-cultural fit of the immigrant collective, a more direct test of our framework would require a direct measure of the person’s socio-cultural fit. Future research attempts in this area should design and validate an instrument to capture a person’s socio-cultural fit. Second, our dataset contains rich information of individuals and regions in Spain. While representative of the situation in Spain, it is reasonable to be cautious about the generalizability of the theoretical framework and results to other settings until more evidence is obtained. Spain is a developed country. Therefore, although there is enough variation in the rates of entrepreneurship, immigrant activity and regional role models

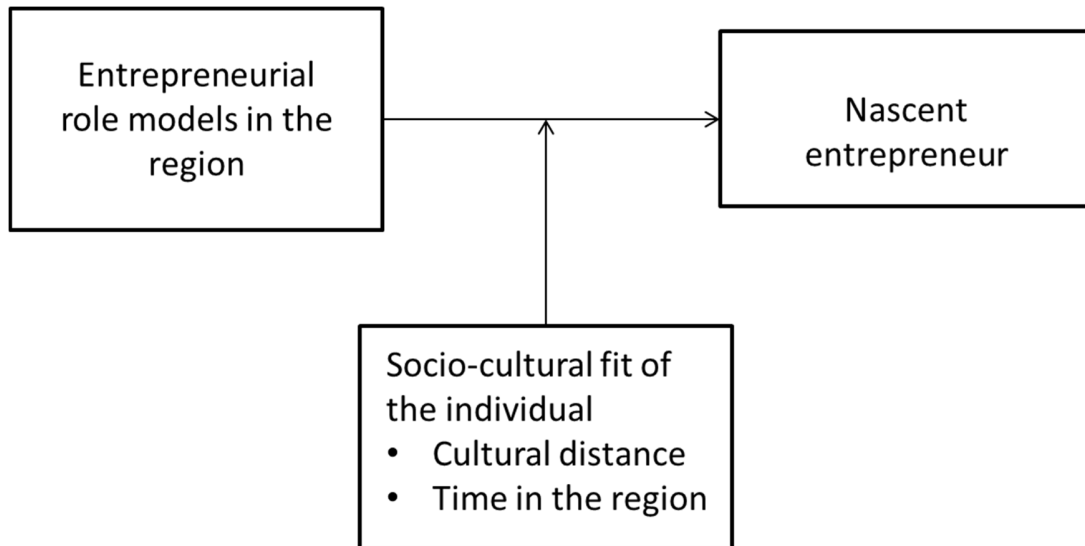
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<sup>4</sup> Intra-individual variation over time (and changing context) would explain human development. Inter individual (across person) variability would be the result of such flexible relating to dynamics contexts and such may serve as part of the dynamic change of the context (Valsiner, 2001).

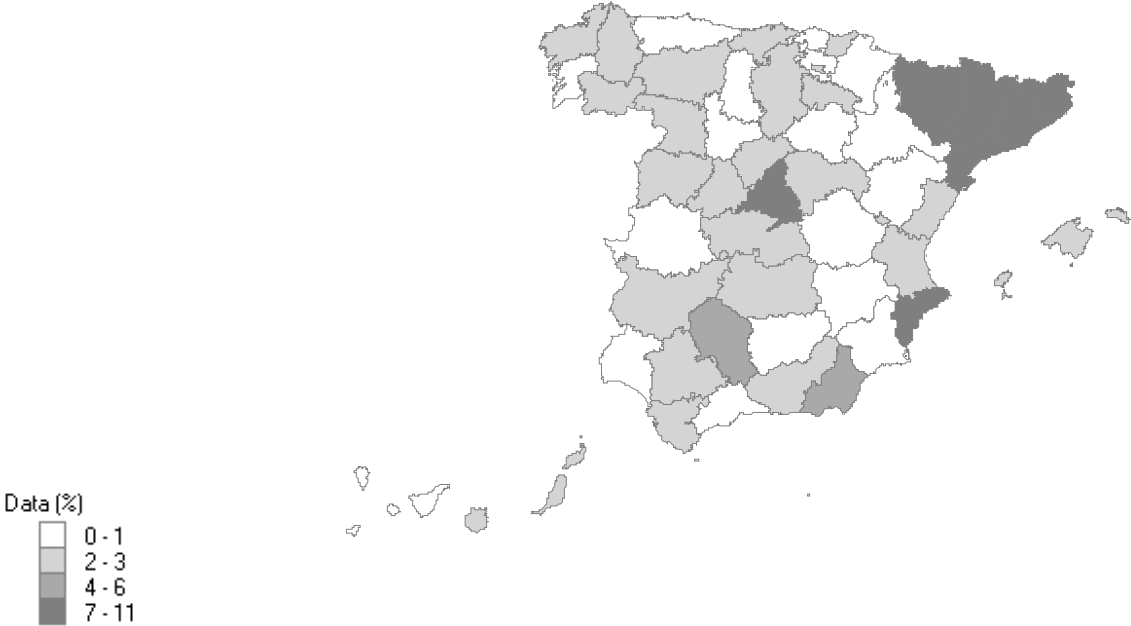
across the provinces in Spain to test our model, all values fall within a certain interval. Third, while our focus was on the influence of role models in the region (i.e. stock of entrepreneurs at the macro level) we have also controlled by the potential influence of role models at the micro level. However, our micro level measure may be too coarse to fully capture the different nuances of the close network of the entrepreneur and therefore miss important aspects such that the proven influence of role models from the past in the case of immigrants, the previously noted influence of other immigrant entrepreneurs in the region or the quality of those closer role models. These are certainly aspects that deserve attention, but unfortunately we had not access to more fine grained information about these role models at the micro level. We cannot discard that this absence may have an influence on the results we have reported. Yet, their robustness makes us confident that we have been able to reasonably isolate the influence of role models in the region on the likelihood to become a nascent entrepreneur.

To close, it is interesting to note that our results indicate a strong and consistent influence of personal variables and a weaker influence of regional variables. The percentage of variance explained by the group of micro level variables included in the analyses (approximately 88%) is higher than that accounted for in the set of environmental level variables considered (approximately 12%). Consistent with a generally accepted belief, the decision to start up a new firm is determined by both individual and environmental level variables. Our results suggest the former are more relevant than the latter. This may be important for policy makers, as they provide some guidance for the design and implementation of regional policies aimed at promoting entrepreneurial activity. In particular, they indicate which factors seem to be more relevant in defining decisions to start up a business.

**Figure 1. Entrepreneurial role models in the region and nascent entrepreneurs: the moderating effect of individual's socio-cultural fit**

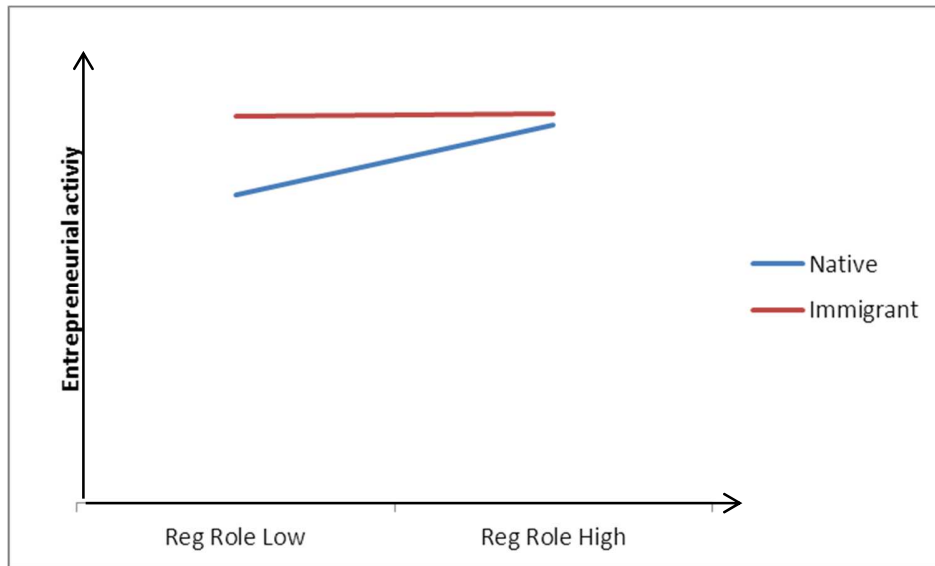


**Figure 2. Percentage of nascent entrepreneurs by province**

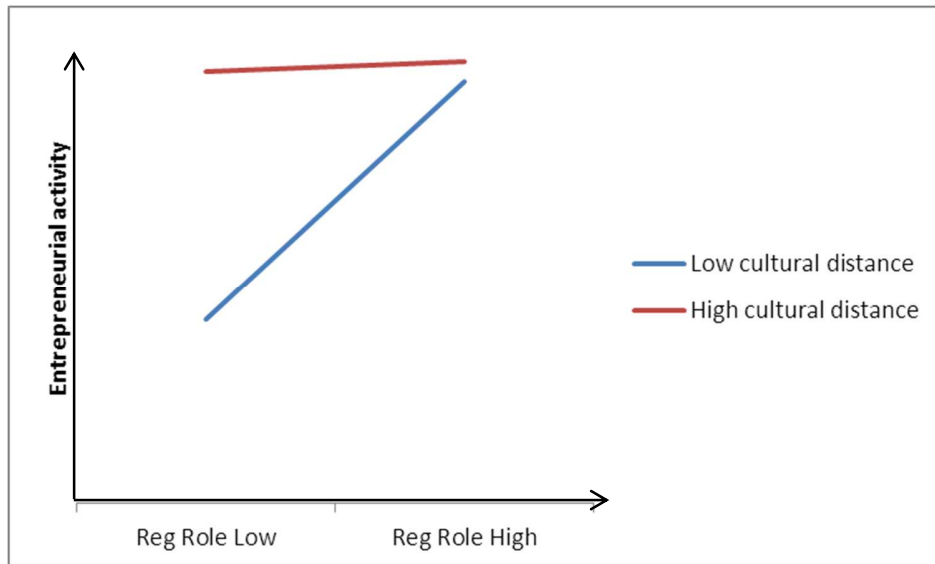




**Figure 3. Interaction of entrepreneurial role models in the region by immigrant status**



**Figure 4. Interaction of entrepreneurial role models in the region by cultural distance**



**Table 1. Logit estimates of personal and regional effects<sup>a</sup>**

	Nascent Entrepreneurs			Nascent Entrepreneurs		
	$\beta$	Std. Err.		$\beta$	Std. Err.	
Gender	0.5905	0.1117	***	0.5928	0.1135	***
Age	0.1722	0.0175	***	0.1723	0.0175	***
Age squared	-0.0023	0.0002	***	-0.0023	0.0002	***
Education level	0.1107	0.1023		0.1090	0.1032	
Immigrant	0.8079	0.1317	***	0.7116	0.1294	***
Fear failure	-0.6659	0.1213	***	-0.6680	0.1210	***
Know entrepreneur	0.1288	0.0230	***	0.1296	0.0231	***
GDP per capita	0.0000	0.0000		0.0000	0.0000	
Population density	0.0007	0.0003	**	0.0007	0.0003	**
Population growth	0.0433	0.0771		0.0470	0.0767	
GDP per capita growth	-0.0430	0.0382		-0.0447	0.0377	
Unemployment	0.0111	0.0042	**	0.0104	0.0042	*
Entrepreneurial role models	0.0507	0.0133	***	0.0587	0.0138	***
Entrepreneurial role models x Immigrant				-0.0847	0.0316	**
Wald Chi square	589.4900		***	784.2500		***
Pseudo-R square	0.0549			0.0558		

<sup>a</sup> The table reports non-standardized  $\beta$  coefficients and robust standard errors. Significance levels are based on two-tailed test for all tests and coefficients. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

**Table 2. Logit estimates for cultural distance<sup>a</sup>**

	Nascent Entrepreneurs			Nascent Entrepreneurs		
	$\beta$	Std. Err.		$\beta$	Std. Err.	
Gender	0.5535	0.1176	***	0.5535	0.1175	***
Age	0.1709	0.0165	***	0.1708	0.0165	***
Age squared	-0.0023	0.0002	***	-0.0023	0.0002	***
Education level	0.0894	0.1114		0.0886	0.1120	
Cultural distance	0.5560	0.0881	***	0.5116	0.0919	***
Fear failure	-0.6827	0.1101	***	-0.6842	0.1098	***
Know entrepreneur	0.1309	0.0215	***	0.1310	0.0215	***
GDP per capita	0.0000	0.0000		0.0000	0.0000	
Population density	0.0007	0.0003	**	0.0007	0.0003	**
Population growth	0.0362	0.0786		0.0376	0.0784	
GDP per capita growth	-0.0512	0.0373		-0.0513	0.0371	
Unemployment	0.0118	0.0041	**	0.0116	0.0041	**
Entrepreneurial role models	0.0494	0.0136	***	0.0504	0.0136	***
Entrepreneurial role models x Cultural distance				-0.0476	0.0231	*
Wald Chi square	948.1400		***	964.1900		***
Pseudo-R square	0.0498			0.0501		

<sup>a</sup>The table reports non-standardized  $\beta$  coefficients and robust standard errors. Significance levels are based on two-tailed test for all tests and coefficients. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

**Table 3. Logit estimates for time of residence<sup>a</sup>**

	Nascent Entrepreneurs			Nascent Entrepreneurs		
	$\beta$	Std. Err.		$\beta$	Std. Err.	
Gender	0.5926	0.1112	***	0.5957	0.1133	***
Age	0.1796	0.0179	***	0.1798	0.0179	***
Age squared	-0.0024	0.0002	***	-0.0024	0.0002	***
Education level	0.1178	0.1014		0.1166	0.1037	
Immigrant (< 5 years)	1.0366	0.2077	***	0.8822	0.2194	***
Fear failure	-0.6736	0.1196	***	-0.6744	0.1195	***
Know entrepreneur	0.1302	0.0225	***	0.1303	0.0226	***
GDP per capita	0.0000	0.0000		0.0000	0.0000	
Population density	0.0008	0.0003	**	0.0007	0.0003	**
Population growth	0.0430	0.0777		0.0477	0.0770	
GDP per capita growth	-0.0415	0.0379		-0.0433	0.0375	
Unemployment	0.0111	0.0041	**	0.0107	0.0041	**
Entrepreneurial role models	0.0506	0.0133	***	0.0552	0.0134	***
Entrepreneurial role models x Immigrant (< 5 years)				-0.1198	0.0525	*
Wald Chi square	494.2000		***	655.3500		***
Pseudo-R square	0.0540			0.0548		

<sup>a</sup> The table reports non-standardized  $\beta$  coefficients and robust standard errors. Significance levels are based on two-tailed test for all tests and coefficients. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

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