



Investigaciones Regionales

ISSN: 1695-7253

investig.regionales@uah.es

Asociación Española de Ciencia Regional
España

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Investigaciones Regionales, núm. 26, 2013, pp. 97-113
Asociación Española de Ciencia Regional
Madrid, España

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The influence of individual perceptions and the urban/rural environment on nascent entrepreneurship

Joan-Lluís Capelleras *, Ignacio Contín-Pilart **, Victor Martin-Sanchez *,
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ABSTRACT: Individual perceptions have been shown to affect the decision to start a new firm. This decision is also contingent upon the context in which actions are taken. However, not much is known about the joint impact of entrepreneurs' perceptions and the urban/rural environment where the firm is created. The purpose of this paper is to examine how nascent entrepreneurship is influenced by individual perceptions and the urban/rural context. Using data from the Spanish GEM project, the results of a series of logistic regression models indicate that opportunity perception and self-efficacy have a positive influence on the probability of becoming a nascent entrepreneur. Interestingly, we also find that individuals in rural areas who perceive new opportunities are more likely to become nascent entrepreneurs rather than those who live in urban ones.

JEL Classification: L26; R00.

Keywords: nascent entrepreneurship; individual perceptions; urban/rural environment.

La influencia de las percepciones individuales y el entorno rural/urbano en la actividad emprendedora naciente

RESUMEN: Las percepciones subjetivas de los emprendedores han servido para explicar la decisión al emprender una nueva iniciativa empresarial. Sin embargo,

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The authors appreciate the contribution from Domante Galkute. Support from the Spanish Ministry of Science and Technology is also acknowledged (Projects ECO2010-21242-C03-01, ECO2010-21242-C03-03 and ECO2010-21393-C04-03).

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Received: 15 may 2012 / Accepted: 25 june 2013.

esta decisión también está influida por el entorno en el que se toma. En este sentido, existe poca literatura sobre el impacto conjunto de las percepciones de los emprendedores y el entorno rural o urbano en el que se crea la empresa. Por ello, el propósito de este artículo es analizar cómo el emprendimiento naciente está condicionado por las percepciones individuales y el entorno, rural o urbano, en el que se ubica el emprendedor. Los resultados de una serie de modelos de regresión logística sobre los datos del proyecto GEM para España, indican que la percepción de oportunidad y la confianza en las propias habilidades tienen un impacto positivo en la probabilidad de convertirse en emprendedor naciente. Asimismo destaca que, en comparación con los individuos que residen en entornos urbanos, los individuos en áreas rurales que perciben oportunidades tienen una mayor probabilidad de convertirse en emprendedores nacentes.

Clasificación JEL: L26; R00.

Palabras clave: emprendimiento naciente; percepciones individuales; entorno rural/urbano.

1. Introduction

The last few decades have witnessed a proliferation of studies which have investigated what factors influence the individual's decision to create a new firm. As such, demographic and economic characteristics of entrepreneurs such as their age or personal income were considered to be the main individual driving forces of entrepreneurial activity for a long time, particularly in the small business economics literature (Arenius and Minniti, 2005). There has also been explanations of the determinants of entrepreneurship which have been based on the entrepreneurs' human and social capital attributes (Davidsson and Honig, 2003) such as previous work or professional experience (Malecki, 1997) or the presence of role models in the entrepreneurs' social networks (Gnyawali and Fogel, 1994, Bosma *et al.*, 2012; Larraza-Kintana and Contín-Pilart, 2013).

In addition to these individual characteristics, which are to some extent objectively measurable individual attributes, subjective perceptions have more recently been added as important determinants of entrepreneurship (Arenius and Minniti, 2005; Koellinger *et al.*, 2007). This set of variables refers to entrepreneurs' perceptions and judgements about their own capabilities or environmental conditions that surround them, what might lead to a final decision with respect to creating a new business. Although these perceptions might be biased, they are likely to be related with an individual's decision to start a new firm. This is based on the notion that the essence of entrepreneurship is about having «a different perception of the situation» (Casson, 1982: 14).

However, the decision to start a new firm is also contingent upon the specific context in which actions are taken (Arenius and Minniti, 2005). Local availability of resources, regional market growth or socio-cultural attitudes towards firm ownership can have an important influence on this decision (Bergmann and Sternberg, 2007; Gnyawali and Fogel, 1994). The distinction between urban and rural areas has also

been shown to be relevant to explain the determinants of entrepreneurship. Population size and density, the most straightforward indicators that are used to distinguish between urban and rural environments, have been found to positively affect entrepreneurship (*e. g.* Reynolds *et al.*, 1994; Wagner and Sternberg, 2004; Stam, 2009). Empirical evidence has indicated that entrepreneurship in urban areas flourishes mainly because of localization effects, urbanization effects and the creative class argument (Glaeser *et al.*, 2010). In addition, it has been pointed that rural areas present obstacles that hamper entrepreneurial activity such as lack of access to financial resources (*i. e.* venture or equity capital), lower concentration of knowledge about establishing and operating a new business or depopulation (Busenitz *et al.*, 2000; Meccheri and Pelloni, 2006).

Overall, entrepreneurship is the result of the interaction between entrepreneurs' attributes and the surrounding environment. In this vein, recent literature reviews have suggested that a deeper research on the linkage between individual attributes and the external context is still needed (Trettin and Welter, 2011). In particular, not much is known about the joint influence of subjective perceptions of nascent entrepreneurs and the urban/rural environment where the firm is created. Several studies have concentrated on motivations of urban and rural entrepreneurs (Freire-Gibb and Nielsen, 2010), their access to human and financial capital (Marshall and Samal, 2006) or the the gender differences in entrepreneurship across urban and rural areas (Driga *et al.*, 2009; Savitha *et al.*, 2009; Davis, 2011). Other studies have examined the influence of institutional factors on the determinants of entrepreneurial activity in different locations (Vaillant and Lafuente, 2007; Bosma and Schutjens, 2011).

Despite this increasing interest in the links between individual characteristics of entrepreneurs and the urban/rural environment, there is still a need to examine the role of such setting in the relationship between individual perceptions and nascent entrepreneurship. Hence, it appears that additional explanations of the interaction between entrepreneurial perceptions and territorial distinctions between rural and urban contexts are still lacking. In the light of this shortcoming, the purpose of this study is to examine how nascent entrepreneurship is influenced by individual perceptions and the urban/rural environment. We first examine the relationship between personal perceptions and the decision to become an entrepreneur. Second, we investigate how such perceptions interact with the rural/urban context to have an influence on the likelihood of becoming a nascent entrepreneur. The study is aimed at furthering our understanding of nascent entrepreneurship by looking at both subjective perceptions of firm founders and the location of their businesses. This is the main novelty of this paper to this area of research. As previously stated, urban and rural areas mainly differ in the availability of resources entrepreneurs have access to. Our study will allow us to empirically examine whether and how such a difference interact with perceptual variables to explain nascent entrepreneurship. In this vein our analysis complements previous ones by exploring how resource availability, here represented by the rural/urban distinction, moderates the connection between individual perceptions about opportunities and skills that precede entrepreneurial action, and the observed rates of entrepreneurship.

The remainder of the work is organized as follows. The theoretical background and hypotheses are presented in the second section. The third section presents the data, method and variables. The results from a series of ordinal logit models are brought in the fourth section. The final section is devoted to the conclusions and implications from the findings.

2. Theoretical background and hypotheses development

2.1. Nascent entrepreneurs and individual perceptions

A nascent entrepreneur is considered a person who initiates actions which are intended to culminate in a new firm (Reynolds, 1994). Hence, nascent entrepreneurs are those individuals who are in the process of business emergence and have initiated several start-up activities. Since perceptions play a key role in the entrepreneurship context, this paper utilizes a perceptions-based approach to predict the decision to become an entrepreneur. By focusing on nascent entrepreneurs, in this paper we are able to identify perceptual differences among individuals who are implementing a new firm.

In fact, most of the economic literature related to entrepreneurship traditionally focused on the individual's decision to become an entrepreneur as a result of a maximization process *i. e.* a comparison between the returns from alternative activities and the selection of the employment opportunity with the highest expected return. As argued by Arenius and Minniti (2005), this approach should be complemented by incorporating variables describing personal perceptions of the nascent entrepreneur. In effect, the decision to become an entrepreneur tends to be based more on subjective and often biased perceptions rather than objective expectations of potential success (Koellinger *et al.*, 2007). Our approach in this paper is based on the nascent entrepreneurs' subjective perceptions rather than general attitudes toward entrepreneurship (*e. g.* Krueger, 1993). More specifically, we focus on entrepreneurs' perceptions of their own skills for entrepreneurship and the venture opportunity.

Opportunity perception has been considered the most distinctive characteristic of entrepreneurial behavior. For instance, Casson (1982) highlighted that the essence of entrepreneurship is related to different perceptions about the environment. In fact, the idea that entrepreneurial action requires the perception of opportunities is based on the premise that individuals make decisions based on subjective assessments rather than on objective factors (*e. g.* Penrose, 1959; Ajzen and Fishbein, 1980). Prior research related to the theory of planned behaviour has shown that evaluative judgments are important predictors of intentions and subsequent actions of individuals (Doll and Ajzen, 1992; Malhotra, 2005). Since individuals have different expectations and assessments about the environment (Palich and Bagby, 1995; Dew *et al.*, 2004), the perception that new opportunities exist in the market would better predict venture creation rather than the objective environmental conditions. In this context,

Edelman and Yli-Renko (2010) suggest that entrepreneur's opportunity perceptions mediate between objective characteristics of the environment and the entrepreneur's efforts to start a new venture.

The effectuation perspective (Sarasvathy, 2001) also provides insights into the role that entrepreneurs' perceptions may play in the venture creation process. This perspective assumes a dynamic environment where the future is difficult to predict. Entrepreneurs thus take actions seeking to control the unpredictable future and this leads them to construct the future. Opportunity is then viewed as a set of subjective expectations of what entrepreneurs think can be accomplished or «imagined ends» (Sarasvathy, 2001). These expectations tend to determine an entrepreneur's behaviour. Following this logic, nascent entrepreneurs' perceptions of opportunities would drive their efforts to start a new venture. For instance, the perception of unexploited market opportunities is likely to lead individuals to initiate start-up activities and persevere in conducting these activities.

In this context, perceptions of nascent entrepreneurs will reflect their personal beliefs about the feasibility of potential opportunities (Dimov, 2010). As a result, nascent entrepreneurs can choose to abandon the opportunities that lack promise and to continue to pursue the ones that are auspicious. Therefore, the progress of the emerging venture is highly dependent on the nascent entrepreneur's perceptions and subjective judgment of the opportunity (Shook *et al.*, 2003; Kor *et al.*, 2007).

Overall, entrepreneurs' perceptions about opportunities are likely to affect positively the likelihood of becoming an entrepreneur. In other words, there will be a positive relationship between perception of opportunities and nascent entrepreneurship. We thus suggest that:

Hypothesis 1: Opportunity perception will be positively related to the likelihood of becoming a nascent entrepreneur.

As is the case with external opportunities, individuals also have different expectations and assessments about their own skills and abilities to successfully set up a new business. Hence, in addition to assessing the feasibility of the opportunity, nascent entrepreneurs also evaluate their ability to establish a new business, *i. e.* whether or not they will be able to establish a venture that exploits the perceived opportunity (Dimov, 2010).

This assessment has to do with the concept of self-efficacy, which was defined by Bandura (1977) as a belief in one's ability to execute actions. Self-efficacy is important because individuals' belief about their ability to perform a task (*e. g.* being an entrepreneur) will affect whether or not they will undertake the task at all. It has been considered to be strongly related to individuals' actual ability (Phillips and Gully, 1997) and performance in general (Locke and Latham, 2002). This is because individuals with a strong sense of self-efficacy will devote a high degree of effort in order to meet their commitments and thus are likely to achieve their goals (Bandura, 1997). In contrast, individuals with low self-efficacy are less likely to make an extended effort, since they believe they cannot be successful.

This notion is in line with intention-based models, in which perceived feasibility has been shown to be a key driver of entrepreneurial intentions (Krueger and Dickson, 1994). Similarly, in Sarasvathy's (2001) effectuation model, an entrepreneur's «given means» form the basis for actions. These given means are perceptual, since they depend upon the entrepreneurs' understanding of their personal identity and experience (Edelman and Yli-Renko, 2010).

In an entrepreneurial context, self-efficacy has been considered as a distinct characteristic of entrepreneurs (Chen *et al.*, 1998; Markman *et al.*, 2002) and an important component of entrepreneurial decision-making (Krueger and Dickson, 1994). Confidence in one's skills and ability to successfully develop entrepreneurial activities is increasingly being considered as a potential determinant of the decision to start a new business, since several studies suggest that entrepreneurial self-efficacy may explain an important part of entrepreneurial activity (Arenius and Minniti, 2005; Zhao *et al.*, 2005; Koellinger *et al.*, 2007; Vaillant and Lafuente, 2007).

Based on previous self-efficacy research, we argue that individuals who have a strong belief in their own capabilities to launch a new firm will exert greater effort in the start-up process and this will contribute to the foundation of their firm. Hence, increased confidence in their own skills can propel entrepreneurs towards the establishment of a new venture, whereas lack of confidence in their own skills can render the nascent entrepreneurs dejected (Dimov, 2010). When nascent entrepreneurs are confident about such skills, they are likely to consider themselves capable to engage in venture creation activities (Hechevarría *et al.*, 2012). Therefore, we anticipate that individuals with confidence in their own entrepreneurial skills (*i. e.* entrepreneurial self-efficacy) will be more likely to start new ventures. In other words, one would expect that confidence in one's skills and nascent entrepreneurship will be positively correlated. Hence, we formulate the following hypothesis:

Hypothesis 2: Entrepreneurial self-efficacy will be positively related to the likelihood of becoming a nascent entrepreneur.

2.2. The role of the urban/rural environment

So far, we have argued that individual perceptions about environmental opportunities and personal skills will have a positive impact on nascent entrepreneurship. What we now propose is that these effects may be affected by the context in which the entrepreneurial process takes place. Such context may enable or constrain entrepreneurs, since it may provide individuals with new opportunities and at the same time may limit their actions (Welter, 2011).

More specifically, we suggest that the urban/rural context will moderate the relationship between individual perceptions and the likelihood of becoming an entrepreneur. This is important because there are marked differences in entrepreneurship

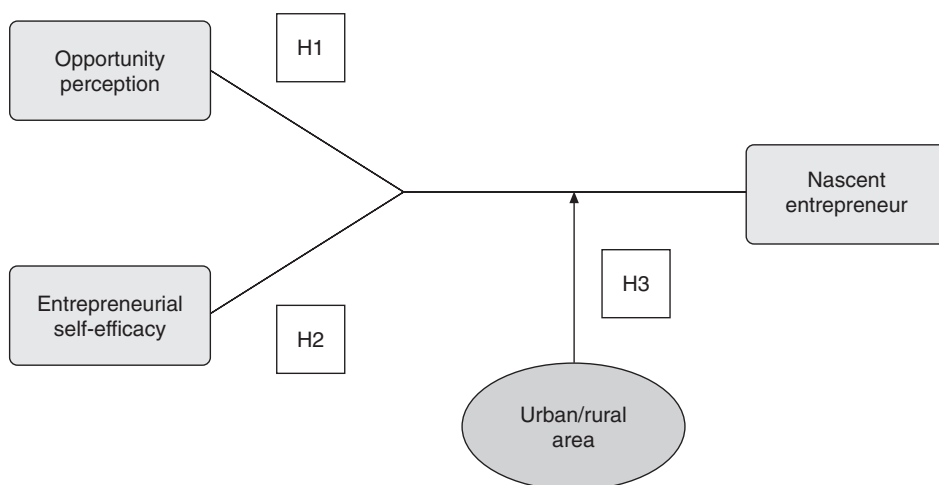
across space. Such differences occur mainly because of differential returns to entrepreneurship, differential availability of resources, and differences in the local culture (Glaeser *et al.*, 2010).

In fact, urban agglomerations have traditionally been portrayed as the preferred setting for conducting business (Marshall, 1920; Jacobs, 1969). Literature on economic geography has shown the advantages of highly dense areas (Todling and Wanzenböck, 2003; Van Stel and Suddle, 2008). The potential benefits these areas offer to new firms are primarily access to critical resources like financial and technological resources, relatively higher human capital levels, and a high stock of knowledge about establishing and operating new businesses. In addition, urban areas offer greater proximity to markets, a diversified economic base and a large market in terms of suppliers, customers and services (Wagner and Sternberg, 2004; Meccheri and Pelloni, 2006; Buseniz *et al.*, 2000; Felzenstein *et al.*, 2012). Higher population density areas also offer individuals trying to set up a business more observation possibilities before engaging in new projects (Shane, 2003). In contrast, rural entrepreneurs suffer more difficulties to access to key financial, technological, human and knowledge related resources than urban entrepreneurs, and lack certain benefits related to low density of population such as a lower density of markets and a greater distance to resources (Malecki, 2003).

Such important benefits for potential entrepreneurs in urban areas, in particular the availability of key resources, are likely to favour individuals in urban areas undertake the step that takes them from individual perceptions about opportunities and necessary skills to actually launch the business and become real entrepreneurs. Even though urban areas are at the same time more competitive environments, one would expect that founding a firm in an urban setting would moderate positively the relationship between individual perceptions and the likelihood of becoming an entrepreneur. This is because the positive impact of perceptions on the likelihood of becoming an entrepreneur will be higher when individuals perceive environmental conditions as favourable (Davidsson, 1991). That is, people will be more receptive to exploit entrepreneurial opportunities and perceive themselves as being more apt to become entrepreneurs in urban than in rural areas, due to its relatively advantage to access to financial, technological and other key entrepreneurial resources. Hence, we offer the following hypothesis:

Hypothesis 3: The positive impact of opportunity perception and entrepreneurial self-efficacy on the likelihood of becoming a nascent entrepreneur will be higher in urban environments.

In sum, our approach is to suggest that perceptions about opportunities and skills will have a positive influence on nascent entrepreneurship. We also propose that there will be a positive moderating effect of residing in an urban area on the relationship between the perceptual variables and the likelihood of being a nascent entrepreneur. This is reflected in the conceptual model of the study, as shown in figure 1.

Figure 1. Conceptual model

3. Data and methodology

3.1. Data and sample

Data used in this paper are from the Spanish Global Entrepreneurship Monitor (GEM) project 2008. GEM project is an annual assessment of the entrepreneurial activity, aspirations and attitudes of individuals across a wide range of countries. In each country, a standardized survey is administered to a representative sample of adults (18-64 years old). To better distinguish between rural and urban areas, the GEM project uses Kayser (1990) criterion. This criterion is based on demographic figures and considers areas that have less than 5,000 inhabitants as rural municipalities. Opposite, municipalities with populations greater than 5,000 inhabitants are considered to be urban ones. The original database for the present study contains the responses to the adult population survey of 30,879 Spanish individuals in 2008.

3.2. Variable measurement

Nascent entrepreneur. This is a dummy variable that takes the value of 1 if the individual is a nascent entrepreneur and 0 otherwise. A nascent entrepreneur is anybody who at the moment in which the survey is conducted is in the process of setting up a business that he or she (partly) owns and that has not yet paid wages or salaries for more than three months (Reynolds *et al.*, 2005; Davidson and Honig,

2003). Our data set indicates that the proportion of nascent entrepreneurs in Spain in 2008 was 5.4%.

Perceptual variables. According to the hypotheses and arguments presented above we consider two perceptual variables in the study: opportunity perception and entrepreneurial self-efficacy. *Opportunity perception* is a dummy variable taking value 1 if the interviewed person sees good opportunities to start up a business in the following six months and 0, otherwise. *Entrepreneurial self-efficacy* is also a dummy variable that takes value 1 if the individual thinks that he or she has the skills and experience to start a new business.

Urban area. To account for the geographical location of the entrepreneur we have the variable urban area that takes value 1 if the individual lives in an urban area and 0 when the interviewed person resides in a rural area. As noted above the GEM project uses Kayser (1990) criterion to classify urban and rural areas. This criterion is based on demographic figures and considers areas that have less than 5,000 inhabitants as rural municipalities, while those with more than 5,000 inhabitants are coded as urban. To test Hypothesis 3, that states the moderating role of the area of residence on the impact that individual perceptions have on entrepreneurial activity, we interact the variable urban area with the perceptual variables described above. Hence we create two new variables: opportunity perception*urban area and entrepreneurial self-efficacy*urban area.

Control variables. We first control for the respondents *age* and *gender*. While the former is measured in years, the latter takes value 1 if the individual is a male and 0 otherwise. Moreover, we also control for the labor status of the interviewed person through a dummy variable that takes value 1 if the individual is currently working and 0 otherwise. Level of education is measured by a dummy variable that takes value 1 if the individual has post-secondary (university degree) education and 0 otherwise. Individuals' annual income is also considered. Individuals were classified into three different groups according to their household income. More specifically, they are classified in the upper, middle or lower third of the income distribution of Spain if their household income is between 0 and 40,000 euros, between 40,001 and 80,000 euros or is more than 80,000 euros, respectively. Therefore, three dummy variables capture individuals' wealth.

3.3. Statistical methods

Pearson's correlation matrix and descriptive statistics was the first test we ran to have a general and clear distribution of the sample. Furthermore, in order to test the influence of individual perceptions in the likelihood to become a nascent entrepreneur, we estimated three binomial logistic regressions. In all model specification, the dependent variable takes a value 1 if the individual is a nascent entrepreneur, 0 otherwise. Model 1 estimates the impact of urban and control variables on the likelihood of becoming a nascent entrepreneur. Model 2 adds to the independent

variables included in model 1 the perceptual variables, *i. e.* opportunity perception and entrepreneurial self-efficacy. Finally, model 3 includes the same independent variables as model 2 and adds the interactions opportunity perception*urban and self-confident*urban area. To avoid heteroskedasticity concerns, standard error are clustered by province. As previously stated the sample size contains 18,986 individuals. Because of individual-level missing data, 30,879 respondents were included in model 1, and 15,898 in models 2 and 3 (see table 2).

4. Results

Our empirical analyses are distributed in the following way. Firstly, table 1 provides descriptive statistics and Pearson's correlation matrix of the variables. Table 2 presents coefficient estimates by models.

More specifically, table 1 shows that the average respondent age is 41 years and that 50% of the interviewed people are male and the other 50% female. In addition, 83.9% of the individuals from our sample live in urban area. Additionally, 73.1% are currently working and 27.1% have university degree. Regarding income distribution, 35.5% of the individuals from our sample have household incomes between 0 and 40,000 euros, 38% of them between 40,001 and 80,000 euros and the other 26.3% more than 80,000 euros. In relation with the perceptual variables, 25.2% of individuals see good opportunities to start up a business in the area where they live. Besides, 46% of them are confident in their entrepreneurial skills.

With regard to Pearson's correlation matrix, result show that the correlation between opportunity perception and nascent entrepreneur is 0.0907 ($p < 0.001$) and that the correlation between entrepreneurial self-efficacy and nascent entrepreneur is 0.1525 ($p < 0.001$). Table 2 presents the coefficient estimates of three model specifications.

Hypotheses 1 and 2 suggest a positive influence of perceptual variables on the likelihood to become a nascent entrepreneur. The results of the analyses conducted support both hypotheses. The coefficients of the perceptual variables are positive and highly significant in models 1 and 2. On the contrary, the negative and significant effect of the interaction term opportunity perception*urban area coefficient from model 3 not only do not support for Hypothesis 3, but indicates that the impact of opportunity perception on the likelihood to become a nascent entrepreneur is smaller in urban environments.

To gauge a more precise picture of the interaction term just discussed, we plot the significant interaction displayed in model 3. Entrepreneurial activity (*i. e.* to be a nascent entrepreneur) and opportunity perception appear in the vertical and horizontal axes, respectively. Plots represent the influence of opportunity perception by area of residence of individuals.

Table 1. Mean, standard deviation and Pearson's correlation matrix of dependent, independent and control variables ^a

	Mean	Std Dev	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Nascent entrepreneur	0.054	0.227	1.000												
2. Age	41.591	12.326	-0.0209 ***	1.000											
3. Gender	0.501	0.500	-0.0353 ***	0.0178 ***	1.000										
4. Urban area	0.839	0.367	-0.0082	-0.0120 ***	-0.0040	1.000									
5. Work status: working	0.731	0.443	0.1443 ***	-0.0095 *	-0.2204 ***	-0.0010	1.000								
6. Education: graduate degree	0.271	0.444	0.0224 ***	-0.1386 ***	-0.0056	0.0063	0.1322 ***	1.000							
7. Household income (lowest third)	0.355	0.478	-0.1072 ***	0.0346 ***	0.1013 ***	0.0159 ***	-0.1084 ***	-0.2030 ***	1.000						
8. Household income (middle third)	0.380	0.485	0.1286 ***	-0.0318 ***	-0.0410 ***	0.0019	0.1022 ***	0.1100 ***	-0.5823 ***	1.000					
9. Household income (upper third)	0.263	0.440	-0.0252 ***	-0.0025	-0.0649 ***	-0.0193 ***	0.0052	0.0993 ***	-0.4450 ***	-0.4689 ***	1.000				
10. Opportunity perception	0.252	0.434	0.0907 ***	-0.0167 ***	-0.0702 ***	-0.0035	0.0387 ***	0.0009	-0.0504 ***	0.0007	0.0557 ***	1.000			
11. Entrepreneurial self-efficacy	0.460	0.498	0.1525 ***	-0.0080	-0.0503 ***	-0.0041	0.1277 ***	0.0660 **	-0.0453 ***	0.0317 ***	0.0151 ***	0.0987 ***	1.000		
12. Interaction opportunity perception*urban area	—	—	0.0667 ***	-0.0176 ***	-0.0650 ***	0.2562 ***	0.0349 ***	0.0014	-0.0393 ***	0.0009	0.0431 ***	0.8911 ***	0.0846 ***	1.000	
13. Interaction confidence in one's skills*urban area	—	—	0.1185 ***	-0.0060	-0.0395 ***	0.3456 ***	0.1114 ***	0.0587 ***	-0.0291 ***	0.0235 ***	0.0061	0.0819 ***	0.8587 ***	0.1680 ***	1.000

^a Table reports non-standardised β coefficients. Robust standard errors are in parentheses. Significance levels are based on a two-tailed test for all tests and coefficients.

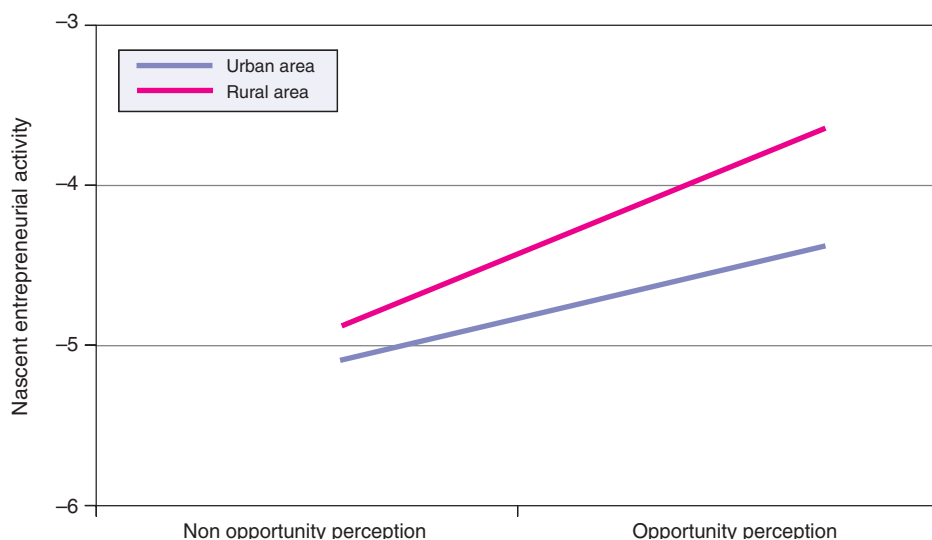
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$.

Table 2. Logistic regression on the likelihood to become a nascent entrepreneur ^a

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
Age	−0.004 (0.003)	−0.014 (0.005) **	−0.015 (0.005) **
Gender	−0.071 (0.072)	0.010 (0.111)	0.013 (0.111)
Work status	5.356 (0.584) ***	4.900 (0.712) ***	4.899 (0.712) ***
Higher education	−0.108 (0.077)	−0.244 (0.117) **	−0.246 (0.117) **
Annual income (lower third)	−0.637 (0.117) ***	−0.607 (0.173) ***	−0.608 (0.173) ***
Annual income (middle third)	0.768 (0.086) ***	0.664 (0.134) ***	0.663 (0.134) ***
Urban area	−0.069 (0.094)	−0.274 (0.138) **	−0.209 (0.429)
Opportunity perception		0.806 (0.108) ***	1.236 (0.251) ***
Entrepreneurial self-efficacy		1.856 (0.164) ***	1.667 (0.388) ***
Opportunity perception*urban area			−0.523 (0.277) *
Entrepreneurial self-efficacy *urban area			0.231 (0.429)
N of observations	18,986	15,898	15,898
Wald chi squared	308.69 ***	293.85 ***	299.4 ***
Pseudo R ²	0.1132	0.1914	0.1925

^a Table reports non-standardised β coefficients. Robust standard errors are in parentheses. Significance levels are based on a two-tailed test for all tests and coefficients.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$.

Figure 2. The moderating role of the urban/rural environment on the relationship between opportunity perception and the likelihood of becoming a nascent entrepreneur

As per the effect of the control variables, adults and higher educated people are less likely to become nascent entrepreneurs. Individuals who are currently working are more likely to start a new business. The poorest individuals are less likely to be involved in the process of creating a new firm than the richest ones. On the contrary, those individuals from the middle class (Annual income middle third) are more likely to start a new firm than richest persons. Finally, gender does not seem to have any significant impact on the likelihood to become a nascent entrepreneur.

5. Concluding remarks

The findings of the paper point to the importance of individual perceptions as determinants of nascent entrepreneurial activity. The paper shows that opportunity perception and confidence on one's skills tend to significantly increase the likelihood of engaging in start-up efforts. This is line with recent studies which suggest that individuals' opportunity perceptions mediate between objective characteristics of the environment and the individuals' efforts to start a new firm (Edelman and Yli-Renko, 2010). This is also consistent with prior work which shows that entrepreneurial self-efficacy plays an important role in explaining nascent entrepreneurial activity (Arenius and Minniti, 2005; Koellinger *et al.*, 2007).

The study has also explored the potential moderating role of territorial distinctions in the relationship between individual perceptions and nascent entrepreneurship. More specifically, we have distinguished between urban or rural residence of individuals through a dummy variable, which takes value 1 for individuals residing in urban areas. This variable would capture the relatively advantage of urban over rural areas in relation to the availability of entrepreneurial resources. We have argued that this relatively advantage of urban areas would intensify the impact of perceptual variables on the likelihood to become a nascent entrepreneur. Our results show that the urban/rural environment does not significantly moderate the relationship between self-efficacy in one's skills and becoming a nascent entrepreneur. In contrast, we have found that there is a significant moderating role of the urban/rural context on the link between opportunity perception and nascent entrepreneurship. In other words, the importance of perceiving an opportunity is more relevant for nascent rural entrepreneurs rather than for their urban counterparts. This means that individuals who perceive an opportunity in rural areas are more likely to become a nascent entrepreneur. This result may be explained by the fact that employment choices individuals face when they have to decide between starting a new firm or being wage employees vary greatly by their area of residence. Specifically, similar to the previously noted advantages of urban areas in terms of resource availability or market size, urban areas are also characterized by more dynamic and diversified economic activity which creates more opportunities to find salaried employment opportunities. Hence, residents in urban areas who may perceive entrepreneurial opportunities may decide not to pursue them and become salaried employees if they anticipate higher expected returns from the salaried jobs (Arenius and Minniti, 2005). In contrast in rural areas, in which the

economic activity and the labour market are less lively, residents who perceive business opportunities may be forced to pursue them. In this vein it may be interesting to analyse in a future study whether the observed greater entrepreneurial activity of rural areas is more necessity driven than in urban ones.

In addition, recent improvements in infrastructures, information technologies and institutional framework in rural regions might also have been beneficial for nascent entrepreneurs (Vaillant *et al.*, 2007). In the words, these developments may have bettered the conditions for rural entrepreneurs to exploit the opportunities they have discovered (Shane, 2003).

Nonetheless, we should keep in mind that our variable urban only captures the environment in which adult population lives, and therefore does not consider infrastructure, migration movements, role models, social networks or support agencies. Therefore while valuable, our dummy variable (*i. e.* urban area) may be seen as a coarse measure to capture the resource availability that lies behind our argument. In the future it would be interesting to develop a more precise measure of the resources available for entrepreneurs who reside in different geographical locations.

All in all, one implication of the findings lay in the strong support in favour of analysing personal perceptions when researching early stage entrepreneurship at the individual level. As suggested by prior work in this area, nascent entrepreneurs' perceptions tend to drive their efforts to start a new venture. In this context, the findings indicate a positive influence of perceiving good business opportunities in rural areas on the probability to become a nascent entrepreneur.

This calls for further research in this issue, as this paper is a first step towards a better understanding of the joint role of both perceptual factors and territorial distinctions as determinants of nascent entrepreneurship. Our study is limited by the binary nature (yes or no) of the majority of independent variables, which may eliminate the possibility of observing, with a greater degree of precision, the relationship between the variables. This in fact represents a necessary simplification due to limitations of the database.

Additionally, a longitudinal approach is recommended in order to evaluate the changes over time in the relationship between nascent entrepreneurs' perceptions in the context of urban and rural areas. A better understanding of temporal events such as creating a new firm will also require additional methodologies. In effect, there is a need for future research that explores the actual processes of venture creation and temporal transitions by using a case study approach. This would contribute to a better examination of how perceptions evolve over time in the venture gestation process depending on the environmental context.

6. References

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