Assessing the main determinants of entrepreneurship in Portugal

Análise dos principais determinantes do empreendedorismo em Portugal

Vanessa Figueiredo

Lisbon University Institute – ISCTE, Business Research Unit – BRU, Forças Armadas Avenue, 1649-026, Lisbon, Portugal
vanessa_alexandra_figueiredo@iscte.pt

Ana Oliveira Brochado

Lisbon University Institute – ISCTE, Marketing, Operations and General Management Department and Business Research Unit – BRU, 1649-026, Lisbon, Portugal, ana.brochado@iscte.pt

Abstract

Without question, entrepreneurship is present in all spheres of our lives, especially in economic and social areas. This field is significant in the development of societies and is also considered a useful tool in promoting innovation and job creation in many countries. For this reason, it needs to be promoted as a central component of economic growth. As a result, the creation of new businesses or projects and the promotion of self-employment have been stimulated by public and private organisations. The goal of this research is to determine what triggers individuals to be actively involved in entrepreneurial activity in the initial phases, based on a survey by Global Entrepreneurship Monitor conducted in Portugal, in 2012. The results of this analysis revealed that early-stage entrepreneurial activity is associated with younger (25–34 years old) males, who have a medium to higher level of household income, as well as diplomas. They are self-employed, and they have loose ties to other entrepreneurs. They perceive themselves as possessing entrepreneurial skills and have a low level of perceived risk and a positive personal attitude towards individual innovation.

Keywords: Entrepreneurship, entrepreneurial ladder, Portugal, determinants, statistical analysis.

Resumo

É indiscutível que o empreendedorismo está presente em todas as esferas da nossa vida, principalmente nas esferas económica e social. Esta temática é importante não apenas para o desenvolvimento das sociedades, sendo também considerada uma ferramenta útil na promoção da inovação e na criação de emprego em diferentes países. Por essa razão, é importante contribuir-se para a sua promoção como um elemento central do crescimento económico. Assim, a criação de novos negócios ou projectos e a promoção do próprio emprego têm vindo a ser estimulados por organizações públicas e privadas. O objectivo deste trabalho é determinar o que desencadeia os indivíduos a tornarem-se activamente envolvidos na actividade empreendedora numa fase inicial, com base no inquérito do Global Entrepreneurship Monitor aplicado em Portugal em 2012. Os resultados desta análise revelaram que a actividade empreendedora nascente está associada ao sexo masculino, a ser jovem (25-34 anos de idade), a possuir um rendimento familiar médio a elevado e qualificações académicas, a ser trabalhador por conta própria, a conhecer empreendedores, a apreender competências empreendedoras percebidas, a ter um baixo nível de risco percebido e a possuir uma atitude pessoal positiva face à inovação individual.

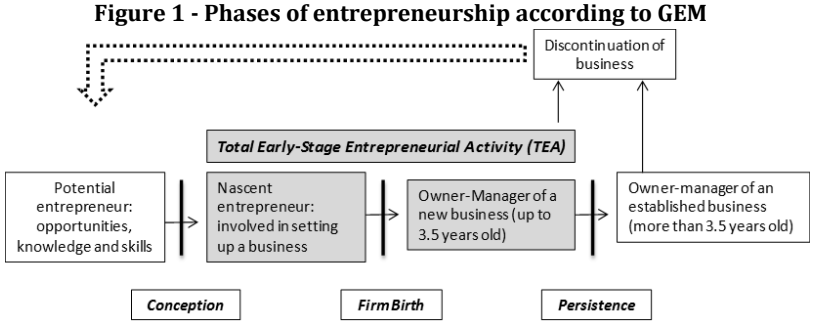
Palavras-chave: Empreendedorismo, túnel, Portugal, determinantes, análise estatística.

1. Introduction

Occupational choice theory has inspired studies about the decision to launch new ventures. In this approach, agents seek to maximise the expected utility of their returns when they choose one of two types of occupational choices: self-employment versus working for others. However, this static view has been replaced by a more dynamic one that sees business as a process comprising several steps (van der Zwan, Thurik & Grilo, 2010).

Grilo and Thurik (2005) introduced the concept of engagement levels in entrepreneurial activities – what they called 'the entrepreneurial ladder'. This ladder comprises several stages, from 'I never thought of starting a new venture' to 'I have had a new venture for more than three years' (see Figure 1). Some studies have showed that the individual determinants of entrepreneurship are different in each stage (van der Zwan et al., 2010; Grilo & Thurik, 2008; van der Zwan & Verheul, 2012). In this context, there have been several studies about nascent entrepreneurial activities in which people are taking the first steps towards becoming self-employed but they are not yet officially established. In this stage, enterprises are in 'the conception stage' (Davidsson, 2006). Data from Global Entrepreneurship Monitor (GEM) has also inspired interest in this specific stage of the process (Reynolds et al., 2005). Based on data from the 2012 GEM Portugal survey, this study seeks to identify the social, demographic and perceptual factors of entrepreneurship in a double strand: involvement in early-stage entrepreneurial activity and active involvement in startups. Furthermore, it seeks to compare variables that lead to the development of an entrepreneurial attitude and the creation of startup businesses. This paper is structured as follows. The next section presents a synthesis of the determinants of entrepreneurship and our investigation hypotheses. Then, we describe methodological options in terms of a description of the database, the variables and the statistical methods used in this study. The results and conclusions are presented in the last two sections of the paper.

Figure 1 - Phases of entrepreneurship according to GEM



Source: Adapted from Bosma, Coduras, Litovsky & Seaman (2012).

2. Individual determinants of entrepreneurship

Entrepreneurship is a result of the attitudes and actions of people. In order to understand entrepreneurial activities, it is extremely important to study why adult populations act in particular ways and how their attitudes are expressed (van der Zwan et al., 2010).

The determinants of entrepreneurship have been studied using several multidisciplinary approaches (Arenius & Minniti, 2005) (e.g. economics, history, psychology and sociology). Recently, due to the fragmentation of researches that study this type of issue, the literature has included some efforts to collate published studies about the determinants of entrepreneurship (Bosma, 2013; Collins, Hanges & Locke, 2004; Heinrichs & Walter, 2013; Rauch & Frese, 2007; Zhao & Seibert, 2006).

The determinants that allow people to create new businesses can be clustered (Arenius & Minniti, 2005) into socioeconomic and demographic factors (e.g. age, gender, occupation and level of education), perception factors (e.g. trust in one's own capabilities and risk aversion) and environmental and macroeconomic factors (e.g. technology, economic and cultural development, institutional and macroeconomic environment and access to financial resources). These determinants are shown in Figure 2.

This paper does not consider environmental variables, such as the role of organisations that support entrepreneurship (Goés & Brugni, 2014), because these variables are more relevant in comparative studies with samples from different countries or regions. Regarding socioeconomic, demographic and perception factors, Arenius and Minniti (2005) concluded that perception factors are more important in explaining entrepreneurial initiatives. Moreover, Oliveira, Silva and Araújo's (2013) findings revealed that perception factors are also important for the success of micro and small enterprises.

Therefore, this study analysed the role of the following variables: gender, age, income, occupation, level of education, perceived skills, perceived risk, relationships with other entrepreneurs and personal attitudes towards individual innovation. The hypotheses we sought to test in this study are presented below.

2.1 Gender

A large number of studies have found a low representation of women among entrepreneurs, as compared to males (Bosma, 2013; Zhao & Seibert, 2006; Davidsson & Honig, 2003). However, van der Zwan and Verheul's (2012) results revealed that the gender effect is higher in the early steps of entrepreneurial activities than in the phase of startup creation. A study by Parker and Belghitar (2006) showed that the direct effect of gender on entrepreneurial activities is residual when other relevant variables are included in the analysis. Therefore, we assumed that:

H1 – Involvement in entrepreneurship is higher among males.

2.2 Age

Previous studies have reported a negative correlation between entrepreneurial activities and the age of entrepreneurs (Reynolds et al., 2005; Davidsson & Honig, 2003), or a nonlinear relationship, with a peak in the age group of 25 to 34-year-olds (van der Zwan & Verheul, 2012). Indeed, despite older business people's accumulated experience and financial capital and more time available, they are also more risk adverse than younger people. Thus, we maintained that:

H2 – The likelihood of entrepreneurial initiatives decreases with the age of entrepreneurs.

2.3 Income

Several studies have shown that higher levels of income increase the likelihood of entrepreneurial activities, offering access to accurate information and financial support (Nandamuri & Gowthami, 2013). Arenius and Minniti (2005) identified a U-shaped relationship between income and entrepreneurial activity. While, for lower levels of income, starting a new business represents an opportunity for employment and access to higher incomes, higher income might reduce financial barriers to starting new businesses.

H3 – Self-employed people have a greater likelihood of participating in entrepreneurial initiatives (van der Zwan & Verheul, 2012; Heinrichs & Walter, 2013).

2.4 Level of education

Levels of formal education are an indicator of human capital. The findings of previous studies have shown a positive relationship between this variable and entrepreneurial activities (van der Zwan & Verheul, 2012; Arenius & Minniti, 2005; Zhao & Seibert, 2006; Heinrichs & Walter, 2013; Davidsson & Honig, 2003; Reynolds, 1997). According to Davidsson and Honig (2003), human capital enhances capabilities to perceive good market opportunities and the ability to start new businesses.

Koellinger (2008) concluded that higher education levels are associated with more innovative entrepreneurial activities. On the other hand, van der Sluis, van Praag and Vijverberg (2005) concluded that the relationship is not significant. In this context, the following hypothesis was established.

H4 – Higher levels of formal education are associated with higher levels of entrepreneurial activity.

2.5 Perceived skills and experience

Previous studies based on GEM data have suggested that the positive perception that individuals have of their own skills in the creation of new businesses increases the likelihood of entrepreneurial activities (van der Zwan & Verheul, 2012; Bosma, 2013; Arenius & Minniti, 2005; Heinrichs & Walter, 2013). According to Arenius and Minniti (2005), perceived skills and experience to start new businesses are the second most important variable in decisions to start new businesses. Given the above, a hypothesis was defined as follows:

H5 – Knowledge, competence and perceived experience increase the likelihood of entrepreneurial activity.

2.6 Knowing other entrepreneurs

Knowing other entrepreneurs and belonging to a social network provide individuals with contacts that might facilitate the entrepreneurial process (Hoang & Antoncic, 2003; Larson & Starr, 1993). Hence, we assume that:

H6 – Knowing other entrepreneurs increases the likelihood of entrepreneurial activity (Hoang & Antoncic, 2003; Larson & Starr, 1993).

2.7 Risk aversion

Entrepreneurs are known to be risk takers. Therefore, risk aversion is inversely related to entrepreneurial activity (Davidsson, 2006; Bosma, 2013; Arenius & Minniti, 2005). The fear of failure in business leads many individuals to avoid engaging in entrepreneurial activities and to look for more stable professional alternatives. Risk aversion was defined by the following hypothesis:

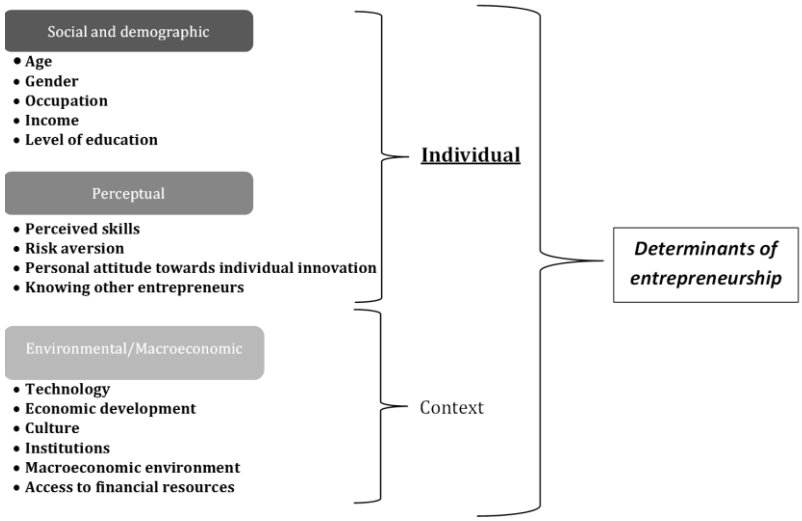
H7 – Higher risk aversion decreases the probability of entrepreneurial activities.

2.8 Personal attitude towards individual innovation

According to the theory of planned behaviour (Ajzen, 1991), intentions to perform particular acts are influenced by individuals' attitudes towards those behaviours. Hence, as it is assumed that the importance that people assign to innovation by individuals increases the likelihood of involvement in entrepreneurial activities, the following hypothesis was formulated.

H8 – Giving more value to the importance of individual innovation increases the probability of entrepreneurial activity.

Figure 2 - Determinants of entrepreneurship



Source: Adapted from Arenius and Minniti (2005).

3. Methodology

3.1 Sample

Portugal – known to have lower creation rates of new businesses than the European Union average (Sarmento & Nunes, 2012) – is the target of this study. To test empirically the predictions laid out above, we employed the Adult Population Survey database collected in 2012 under the GEM research programme. The database has information on a sample of 2,000 Portuguese respondents. The survey collected information from the respondents at the time they were on a specific step of the entrepreneurial ladder.

3.2 Dependent variables

The dependent variables used in this analysis are Total Early-Stage Entrepreneurial Activity (TEA) and startup businesses. The first variable assesses if individuals are involved in early-stage entrepreneurial activity. The second variable aims to measure active involvement in startups.

The two variables are qualitative and, as dummy variables, they were coded with the value of 1 if the individual was involved in entrepreneurial activities (TEA or startup) and the value of 0, otherwise.

3.3 Independent variables

The independent variables that act as explanatory variables of entrepreneurial attitudes and that are used in this study are: age, gender, level of income and occupation (socio-demographic characteristics); degree of knowledge, skills and experience of entrepreneurial activities and level of education (skills and education); degree of risk aversion; relationships with other entrepreneurs and personal attitude towards individual innovation (tendency for innovation).

3.4 Statistical Methods

To produce the statistical characterisation of the sample, absolute and relative frequency tables, crosstabs and descriptive statistics were used. The determinants of entrepreneurship in the Portuguese population were first defined through chi-square tests. In a second step, logit models were estimated in order to accommodate possible interactions between the explanatory variables.

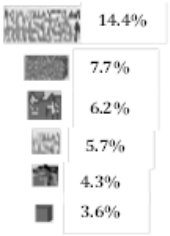
4. Results

4.1 Sample characteristics

According to the GEM 2012 data, 14.4% of the Portuguese respondents intended to start a business within three years in Portugal, and the estimated TEA was 7.7%. However, only 6.2% of the respondents were owner-managers of established businesses, and only 5.7% were actively involved in startup efforts.

The GEM Portugal 2012 Report also mentioned the importance of the nascent entrepreneurship rate and new business ownership rate to assess entrepreneurial activities in Portugal. Therefore, this survey found that 4.3% of the respondents were actively involved in setting up businesses they owned or co-owned and, finally, only 3.6% of them stated that they were owner-managers of new businesses. Based on these results, it was possible to define several stages or levels of entrepreneurial activity – or what Grilo and Thurik (2005) called 'the entrepreneurial ladder', adapting it to the specific situation of Portugal in 2012 (see Figure 3). Table 1 complements these results by defining the profile of the sample analysed in this paper.

Figure 3 - The entrepreneurial ladder – Portugal, 2012



Source: Authors (data from the GEM Portugal 2012 Report).

As shown in Table 1, in 2012, the percentage of entrepreneurs was balanced by gender – 50% of females (N=997) were entrepreneurs while 50% of male respondents (N=1,004) considered themselves a professional in entrepreneurship – and 25% of entrepreneurs (N=496) fell within the age group of 25–34 years old. Regarding the level of income, 19% of entrepreneurs (N=260) earned between €1,251 and €1,750 per month. Furthermore, 30% (N=597) had graduated from high school, while 49% of the respondents (N=958) worked in full or part-time positions.

Given that networking, perceived entrepreneurial experience, perceived risk and personal attitude towards individual innovation are variables that play a key role not only in characterising the respondents of GEM's Portugal survey 2012 but also in studying entrepreneurship and entrepreneurial activities, these were also considered in this study. Fully 74% of the Portuguese respondents (N=1,476) answered that they did not know other entrepreneurs, while only 26% (N=510) reported feeling close to other entrepreneurs.

Although 53% of the respondents (N=1,032) did not think they had any entrepreneurial experience, the same percentage of individuals (53%, N=1,042) answered that they were aware of the risks underlying entrepreneurial activities. As an essential element of entrepreneurship, innovation tends to be considered indispensable to the entrepreneurship process and to the personalities of entrepreneurs. As evidenced by the results in Table 1, 38% of the Portuguese respondents expressed their personal position towards innovation as somewhat agreeing with the importance of this variable.

Table 1 - Sample profile

Variables	Categories	N	%
Gender	Female	997	50%
	Male	1,004	50%
Age group	18–24	303	15%
	25–34	496	25%
	35–44	483	24%
	45–54	396	20%
	55–64	323	16%
Income	500 euros or less	161	12%
	501 to 750 euros	195	14%
	751 to 1,000 euros	220	16%
	1,001 to 1,250 euros	173	13%
	1,251 to 1,750 euros	260	19%
	1,751 to 2,500 euros	208	15%
	2,501 to 3,500 euros	94	7%
	More than 3,500 euros	64	5%
Level of education	University graduate	566	28%
	Trade school	28	1%
	Attended university	63	3%
	High school graduate	597	30%
	High school - first five years	350	18%
	High school - first two years	163	8%
	Elementary school	209	10%
	Elementary school or illiterate	15	1%
Occupation	Full with some part time	958	49%
	Part time only	75	4%
	Retired, disabled	150	8%
	Homemaker	86	4%
	Student	132	7%
	Not working, other	319	16%
	Self-employed	251	13%
Closeness to an entrepreneur	No	1,476	74%
	Yes	510	26%
Perceived entrepren. exp.	No	1,032	53%
	Yes	916	47%
Perceived risk	No	912	47%
	Yes	1,042	53%
Personal attitude towards individual innovation	Strongly disagree (1)	185	10%
	Somewhat disagree (2)	259	14%
	Neither agree nor disagree (3)	499	27%
	Somewhat agree (4)	704	38%
	Strongly agree (5)	226	12%

Source: Authors.

4.2 Hypotheses testing

In this section, we present two tables, one for the TEA (Table 2) and another for startup efforts (Table 3), which allowed us to test the hypotheses listed earlier and to compare the differences between these two variables. In both Table 2 and Table 3, the results revealed that early-stage entrepreneurial activity is higher for males than for females. There is an association between entrepreneurial activities and the age of entrepreneurs. Indeed, the TEA is higher for individuals between 25 and 34 years old. Furthermore, the TEA appears to increase with household income.

Table 2 - Hypothesis testing, TEA

Variables	Categories	Involved in Total Early-Stage Entrepreneurial Activity				Chi-Square Test Results
		No		Yes		
		N	%	N	%	
Gender	Female	935	51%	62	40%	6.88***
	Male	910	49%	94	60%	
Age group	18–24	283	15%	20	13%	12.00***
	25–34	442	24%	54	35%	
	35–44	444	24%	39	25%	
	45–54	368	20%	28	18%	
	55–64	308	17%	15	10%	
Income	500 euros or less	147	12%	14	13%	20.01***
	501 to 750 euros	189	15%	6	6%	
	751 to 1,000 euros	208	16%	12	11%	
	1,001 to 1,250 euros	155	12%	18	17%	
	1,251 to 1,750 euros	245	19%	15	14%	
	1,751 to 2,500 euros	185	15%	23	21%	
	2,501 to 3,500 euros	85	7%	9	8%	
	More than 3,500 euros	54	4%	10	9%	
Level of education	University graduate	501	27%	65	42%	21.67***
	Trade school	27	1%	1	1%	
	Attended university	56	3%	7	5%	
	High school graduate	552	30%	45	29%	
	Attended high school for the first five years	334	18%	16	10%	
	Attended high school for the first two years	152	8%	11	7%	
	Graduated from elementary school	199	11%	10	6%	
	Attended elementary school or illiterate	15	1%	0	0%	
Occupation	Full with some part time	919	51%	39	25%	381.82***
	Part time only	72	4%	3	2%	
	Retired, disabled	147	8%	3	2%	
	Homemaker	85	5%	1	1%	
	Student	129	7%	3	2%	
	Not working, other	311	17%	8	5%	
	Self-employed	154	8%	97	63%	
Closeness to an entrepreneur	No	1,398	76%	78	51%	49.12***
	Yes	434	24%	76	49%	
Perceived entrepreneurial experience	No	1011	56%	21	14%	103.89***
	Yes	783	44%	133	86%	
Perceived risk	No	811	45%	101	65%	22.24***
	Yes	987	55%	55	35%	
Personal attitude towards individual innovation	Strongly disagree (1)	173	10%	12	8%	21.92***
	Somewhat disagree (2)	249	14%	10	7%	
	Neither agree nor disagree (3)	472	27%	27	18%	
	Somewhat agree (4)	632	37%	72	48%	
	Strongly agree (5)	198	11%	28	19%	

Source: Authors.

Table 3 - Hypotheses testing, startup effort

Variables	Categories	Involved in a Startup effort				Chi-Square Test Results
		No		Yes		
		N	%	N	%	
Gender	Female	954	50.6%	43	37.4%	7.54***
	Male	932	49.4%	72	62.6%	
Age group	18–24	286	15.2%	17	14.8%	25.24***
	25–34	446	23.6%	50	43.5%	
	35–44	461	24.4%	22	19.1%	
	45–54	379	20.1%	17	14.8%	
	55–64	314	16.6%	9	7.8%	
Income	500 euros or less	150	11.6%	11	14.1%	35.18***
	501 to 750 euros	195	15.0%	0	0.0%	
	751 to 1,000 Euros	211	16.3%	9	11.5%	
	1,001 to 1,250 Euros	164	12.6%	9	11.5%	
	1,251 to 1,750 Euros	251	19.4%	9	11.5%	
	1,751 to 2,500 Euros	187	14.4%	21	26.9%	
	2,501 to 3,500 Euros	83	6.4%	11	14.1%	
	More than 3,500 Euros	56	4.3%	8	10.3%	
Level of education	University graduate	506	27.0%	60	52.2%	46.86***
	Trade school	26	1.4%	2	1.7%	
	Attended university	56	3.0%	7	6.1%	
	High school graduate	567	30.2%	30	26.1%	
	Attended high school for the first five years	341	18.2%	9	7.8%	
	Attended high school for the first two years	158	8.4%	5	4.3%	
	Graduated from elementary school	207	11.0%	2	1.7%	
	Attended elementary school or illiterate	15	0.8%	0	0.0%	
Occupation	Full with some part time	915	49.3%	43	37.7%	101.22***
	Part time only	69	3.7%	6	5.3%	
	Retired, disabled	148	8.0%	2	1.8%	
	Homemaker	85	4.6%	1	0.9%	
	Student	130	7.0%	2	1.8%	
	Not working, other	307	16.5%	12	10.5%	
	Self-employed	203	10.9%	48	42.1%	
Closeness to an entrepreneur	No	1,426	76.1%	50	44.2%	56.78***
	Yes	447	23.9%	63	55.8%	
Perceived entrepreneurial experience	No	1,017	55.5%	15	13.2%	77.07***
	Yes	817	44.5%	99	86.8%	
Perceived risk	No	841	45.7%	71	61.7%	11.14***
	Yes	998	54.3%	44	38.3%	
Personal attitude towards individual innovation	Strongly disagree (1)	216	12.0%	3	2.6%	33.76***
	Somewhat disagree (2)	258	14.3%	11	9.6%	
	Neither agree nor disagree (3)	404	22.4%	18	15.7%	
	Somewhat agree (4)	678	37.6%	48	41.7%	
	Strongly agree (5)	245	13.6%	35	30.4%	

Source: Authors.

For both TEA and startup effort, it is possible to state that the higher the level of income, the greater the likelihood of engaging in entrepreneurial activities. Having a diploma also increases participation in entrepreneurial activities and startup effort.

As expected, for both TEA and startup effort, self-employed individuals are more likely to engage in entrepreneurial activities. This result is in accordance with previous studies and indicates that those who are self-employed acquire skills and competencies that promote new business ideas and entrepreneurial activities.

Knowing other entrepreneurs also increases entrepreneurial activity. Therefore, networking with other entrepreneurs positively impacts these activities. This happens for both TEA and startup effort.

Perceived entrepreneurial experience and skills are the most significant variables associated with TEA. Therefore, those who are more confident about their business skills are more likely to become entrepreneurs, which happens for both TEA and startup effort.

Portuguese entrepreneurs appear to present a higher level of perceived risk for both TEA and startup businesses. This result is consistent with the stereotype that an entrepreneur is someone who is a risk taker. Finally, entrepreneurs exhibit a positive personal attitude towards entrepreneurship for both TEA and startup effort.

All the nine hypotheses were confirmed by chi-square tests as presented in the next table. Therefore, it is possible to conclude that entrepreneurial activity in Portugal is associated with demographic, socioeconomic and perception variables, as maintained by Arenius and Minniti (2005).

4.3 Model Estimates

Last, in order to account for a possible interaction between the independent variables, we estimated two logit models (see Tables 4 and 5).

Table 4 - Model results, TEA

Variables	B	Exp (B)	S.E.	
Perceived skills	1.60	4.97	0.27	**
Perceived risks	-0.93	0.40	0.47	*
Personal attitude towards individual innovation	0.31	1.36	0.09	**
Self-employed	2.87	17.59	0.21	**
Graduation	1.04	2.82	0.51	*
Income €501–€750	1.24	3.44	0.50	*
Income €1,751–€2,500	0.67	1.96	0.33	*
Age 25–34	0.65	1.91	0.22	***
Constant	-3.82	0.02	0.36	***

***, * statistically significant at the 1%, 5% level, respectively*

Source: Authors.

Table 5 - Model results, startup effort

Variables	B	Exp(B)	S.E.	
Knowing other entrepreneurs	0.61	0.22	7.49	**
Perceived skills	1.56	0.30	27.20	**
Personal attitude towards individual innovation	-0.36	0.10	12.29	**
Self-employed	1.59	0.23	47.89	**
University graduate	1.13	0.48	5.53	*
Aged 25–34	0.88	0.22	15.28	**
Income €1,751–€2,500	-1.07	0.39	7.50	**
Constant	-3.65	0.39	86.32	**

***, * statistically significant at the 1%, 5% level, respectively*

Source: Authors.

The first model considers the TEA as the dependent variable, whereas the second includes the startup variable on a set of potential determinants. The two tables above show those variables or categories of variables that are statistically significant.

The main perception determinants of the TEA are perceived entrepreneurial skills, perceived risks and personal attitude towards individual innovation. Age, income, level of education and occupation are also statistically significant.

When entrepreneurs make progress in startup efforts, the perceived risk is no longer statistically significant. However, knowing other entrepreneurs has a positive effect on the likelihood to be involved in startup activities. Perceived skills, attitude toward innovation and age remain statistically significant, which shows the relevant role of these variables for startup businesses.

5. Discussion

In this paper, we used occupational choice theory in order to explain why a static perspective that advocated a single way to accomplish the maximum utility of returns received by agents has been replaced by a more dynamic view that advocates that business is a process whose development goes through several stages, each with levels of engagement reflected in what Grilo and Thurik (2005) called 'the entrepreneurial ladder'. This ladder, a representation of entrepreneurial activities, needs to be analysed using a set of determinants that affect this type of activity.

In order to analyse the role of each variable (i.e. gender, age group, income, occupation, level of education, perceived skills, perceived risk, relationships with other entrepreneurs and personal attitude towards individual innovation) in entrepreneurial initiatives that took place in Portugal in 2012, we defined a set of nine hypotheses. According to chi-square test results, the first hypothesis is confirmed, that is, early-stage entrepreneurial activity is more common for males than for females. In terms of age, it was possible to verify that there is an association between entrepreneurial activities and the age of entrepreneurs. TEA is prevalent in individuals who are between 25 and 34 years old. All other variables were also confirmed by the results.

According to the empirical results, the TEA increases with household income, while self-employed individuals have a higher probability of engaging in entrepreneurial activities. According to Coulter (2001), the level of income, along with other factors, strongly influences the likelihood of being entrepreneurial. Having a diploma is also an important step towards increasing entrepreneurial activities.

Individuals who have entrepreneurial experience and are confident about their business skills are more likely to become entrepreneurs. They believe that they possess the most important characteristics needed to succeed in entrepreneurial activities. Knowing other entrepreneurs also has a positive impact on entrepreneurial activity. This can be explained by the fact that, as Larson and Starr (1993) pointed out, more developed networks – in terms of the

number and quality of ties – can offer more benefits to startup businesses than less developed networks. Their research results indicated great importance associated with these networks. Furthermore, other authors (Coleman, 1988; Burt, 1992; Hite & Hesterley, 2001) emphasised the importance of networks in each stage of development of entrepreneurial firms, identifying both cohesive networks and networks that promoted structural holes, including those whose influence is made clear in the development process of new firms. Johannisson (2000) stated that networks are one of the most useful and powerful resources that entrepreneurs can use because they provide access to knowledge, information, power, capital and connections to other networks.

Portuguese respondents also presented a higher level of perceived risk. They further revealed positive personal attitudes about individual innovation.

After these considerations, it is possible to confirm the relationship between entrepreneurial activity and startup businesses in Portugal and demographic, socioeconomic and perception variables (Arenius & Minniti, 2005). Based on the results of the two logit models estimated, it was possible to assess possible interactions between the independent variables. The model results for TEA show that the main perception determinants of early-stage entrepreneurial activity are perceived entrepreneurial skills, perceived risks and personal attitude towards individual innovation. Variables such as age, income, level of education and occupation are also statistically significant.

On the other hand, model results for startup effort indicate that perceived risk is no longer statistically significant after entrepreneurs have initiated startup businesses, whereas knowing other entrepreneurs continues to have an important role in startup efforts. This result is of utmost importance for policy makers – both at the regional and national levels – who can promote the creation and activities of entrepreneurial associations in order to enhance the social capital of entrepreneurs.

6. Study limitations and directions for new research

Besides the importance of the topic and the interesting results discussed in this paper, there are some limitations that should be identified and that could indicate new directions for future research on entrepreneurship.

One of the limitations is that the data analysed comprised only one year, 2012. An analysis covering several years can make the study of this topic more comprehensive and provide a more detailed vision of the evolution of entrepreneurial activity in any given period. Clearly, a longitudinal study is needed to establish causal direction for gender, age, income, occupation, level of education, perceived skills, perceived risk, relationships with other entrepreneurs and personal attitude towards individual innovation.

In addition, it would be interesting to include in the analysis other explanatory variables that can complement the study of entrepreneurial activity. Expanding the scope to include other countries would help to understand what the situation of each country is concerning entrepreneurial activities and the determinants that influence these.

7. Conclusions

Our results revealed that early-stage entrepreneurial activities and startup businesses are associated with younger (25–34-year-old) males, who possess a medium to higher level of household income and have diplomas. They are self-employed and close to other entrepreneurs, perceiving themselves as possessing entrepreneurial skills. They have a low level of perceived risk and a positive personal attitude towards individual innovation.

However, when we account for possible interactions between these independent variables, only perceived skills, perceived risks, personal attitude toward innovation, self-employment, level of education, income and age are statistically significant.

For those entrepreneurs who reach the startup effort step, perceived risk is no longer statistically significant. This result can be explained by their increasing certainty regarding their business plans and projects as the entrepreneurs move to the second step. In addition, knowing other entrepreneurs has a positive effect on the likelihood of being involved in startup efforts. Therefore, we must conclude that networking is of utmost importance to entrepreneurs and should be enhanced.

References

Ajzen, I. (1991). The theory of planned behavior. *Organisational Behavior and Human Decision Process*, 50, 179-211.

Arenius, P. & Minniti, M. (2005). Perceptual variables and nascent entrepreneurship. *Small Business Economics*, 24, 233-247.

Bosma, N., Coduras, A., Litovsky, Y. & Seaman, J. (2012). GEM Manual – A report on the design, data and quality control of the Global Entrepreneurship Monitor. *Global Entrepreneurship Monitor*, 1-95. Retrieved February, 6, 2014 from http://www.gemconsortium.org/docs/download/2375.

Bosma, N. (2013). The Global Entrepreneurship Monitor (GEM) and its impact on entrepreneurship research. *Foundations and Trends in Entrepreneurship,* 9(2), 143-248.

Burt, R. (1992). *Structural holes*. Cambridge, MA: Harvard University Press.

Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94, 95-120.

Collins, C., Hanges, P. & Locke, E. (2004). The relationship of achievement motivation to entrepreneurial behavior: a meta-analysis. *Human Performance*, 17, 95-117.

Coulter, M. (2001). *Entrepreneurship in action*. New Jersey, USA: Prentice Hall.

Davidsson, P. (2006). Nascent entrepreneurship: empirical studies and developments. *Foundations and Trends in Entrepreneurship*, 2, 1-76.

Davidsson, P & Honig, B. (2003). The role of social and human capital among nascent entrepreneurs. *Journal of Business Venturing*, 18, 301-331.

Góes, A. and Brugni, T. (2014). Entrepreneurship from the perspective of small business support entities. *Tourism & Management Studies*, 10, 19-25.

Grilo, I. & Thurik, R. (2005). Entrepreneurial engagement levels in the European Union. *International Journal of Entrepreneurship Education*, 3(1), 43-68.

Grilo, I. & Thurik, R. (2008). Determinants of entrepreneurial engagement levels in Europe and the US. *Industrial & 'Corporate Change*, 17, 1113-1145.

Heinrichs, S. & Walter, S. (2013). Who Becomes an Entrepreneur? A 30-Years-Review of Individual-Level Research and an Agenda for

Future Research. *Leibniz Information Centre for Economics*, 1-27. Retrieved January, 12, 2014 from http://hdl.handle.net/10419/68590.

Hite, J. & Hesterly, W. (2001). The evolution of firm networks: from emergence to early growth of the firm. *Strategic Management Journal*, 22(3), 275-286.

Hoang, H. & Antoncic, B. (2003). Network-based research in entrepreneurship. A critical review. *Journal of Business Venturing*, 18, 165-187.

Johannisson, B. (2000). Networking and entrepreneurial growth. In: D. L. Sexton, & H. Landström (Eds.). *The Blackwell Handbook of Entrepreneurship* (368-386). Oxford: Backwell.

Koellinger, P. (2008). Why are some entrepreneurs more innovative than others? *Small Business Economics*, 31, 21-37.

Larson, A. & Starr, J. (1993). A network model of organisation formation. *Entrepreneurship:Theory and Practice*, 17(2), 5-15.

Nandamuri, P. P. & Gowthami, C. H. (2013). Household Income: Potential Entrepreneur. *SCMS Journal of Indian Management*, X (3), 75-85.

Oliveira, J., Silva, W. & Araújo, E. (2013). Business longevity and entrepreneurial characteristics: MSE's analysis of the Teófilo Otoni/ Minas Gerais/Brazil microregion. *Tourism & Management Studies*, 9 (2), 107-117.

Parker, S. & Belghitar, Y. (2006). What happens to nascent entrepreneurs? An econometric analysis of the PSED. *Small Business Economics*, 27, 81-101.

Rauch, A. & Frese, M. (2007). Let's put the person back into entrepreneurship research: a meta-analysis on the relationship between business owners' personality traits, business creation, and success. *European Journal of Work & Organisational Psychology*, 16, 353-385.

Reynolds, P. (1997). Who starts new firms? – Preliminary explorations of firms-in-gestation. *Small Business Economics*, 9, 449-462.

Reynolds, P., Bosma, N., Autio, E., Hunt, S., Bono, N., Servais, I. *et al.* (2005). Global entrepreneurship monitor: data collection design and implementation 1998-2003. *Small Business Economics*, 24, 205-231.

Sarmento, E. and Nunes, A. (2012). Business creation in Portugal and Spain in the period 2000-2007: comparative analysis based on the World Bank group entrepreneurship survey (WBGES), *Tourism & Management Studies*, 8, 116-130.

van der Sluis, J., van Praag, M. & Vijverberg (2005). Entrepreneurship selection and performance: A meta-analysis of the impact of education in developing economies, *World Bank Economic Review*, 19, 225-261.

van der Zwan, P., Thurik, R. & Grilo, I. (2010). The entrepreneurial ladder and its determinants. *Applied Economics*, 42, 2183-2191.

van der Zwan, P. & Verheul, I. (2012). The entrepreneurial ladder, gender and regional development. *Small Business Economics*, 39, 627-643.

Zhao, H. & Seibert, S. (2006). The big five personality dimensions and entrepreneurial status: a meta-analytical review. *Journal of Applied Psychology*, 91(2), 259-271.

Article history:

Received: 20 May 2014

Accepted: 25 October 2014