

Eliza-Olivia LUNGU,  
National Scientific Research Institute for Labour and Social Protection (INCSMPS),  
Bucharest, Romania  
Monica Mihaela MAER-MATEI  
National Scientific Research Institute for Labour and Social Protection (INCSMPS),  
Bucharest, Romania

# WHAT DETERMINES YOU TO BE AN ENTREPRENEUR?

Empirical  
studies

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## Keywords

Entrepreneurship  
Labour market  
Logit

## JEL Classification

M13, J24, J21

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## Abstract

*The paper studies the entrepreneurial motivation of adults from five EU countries: Romania, Greece, Spain, Denmark and Belgium. The selected countries are involved as partners in a Leonardo da Vinci project, intended to adapt a board game into serious game for improving the entrepreneurial skills. Based on the data provided by the Global Entrepreneurship Monitor we determine a series of factors, for each country that influences the decision of a young people/adult to start a new venture. The data are collected through an annual survey, conducted on a representative sample of the adult population between 18-64 years for every country (at least 2,000 per country). We develop our analysis on the 2010 database.*

## Introduction

In the early years of the '90, researchers thought that "the average new firm birth rates are roughly similar across countries and there are similar regional variations within all countries" (Reynolds, Storey, Westhead, 1994) and few scholars thought that entrepreneurship has a considerable impact on countries' economic growth (Amoros, Bosma, Levie, 2013).

Since 1999, the Global Entrepreneurship Monitor (GEM) has started to investigate this issue by collecting survey data, both from individuals (GEM Adult Population Surveys) and national experts (GEM National Expert Surveys). The project focused on three main goals, on its venture to determine how entrepreneurship relates with economic growth: "to measure differences in the level of entrepreneurial activity between countries; to uncover factors determining national levels of entrepreneurial activity and to identify policies that may enhance national levels of entrepreneurial activity" (Amoros, Bosma, Levie, 2013).

The revised GEM model includes three facets of entrepreneurship: entrepreneurial activity, entrepreneurial aspirations and entrepreneurial attitudes. They are not present in the model as components of a linear process, but rather as components of a "black box", whose mechanism needs to be unveiled.

The article is structured as follows: (a) a description of the database and the econometric method applied, (b) the main results obtained and (c) conclusions and future work.

## Methodology Data

The databases used in this research are publicly available on the Global Entrepreneurship Monitor (GEM) Project website. The Global Entrepreneurship Monitor "measures individuals' perceptions to entrepreneurship, their involvement in entrepreneurial activity and their aspirations in doing so",

allowing also for international comparison (Bosma, Coduras, Litovsky, Seaman, 2012). The data are collected through an annual survey, The Adult Population Surveys (APS), conducted on a representative sample of the adult population between 18-64 years for every country (at least 2,000 per country). In 2010, 59 countries were included in the research, which covers 52% of world's population and 84% of world's GDP (Matis, Nagy, Petru, Benyovszki, 2011).

Traditionally, the questionnaire has three main parts: (a) a core set of questions, that are kept almost the same over the time, covering issues such as: perceived entrepreneurship opportunities, perceived skills, aspirations, nascent entrepreneurs etc.; (b) a set of questions that correspond to the annual research topic (ex: High Growth Entrepreneurship; Social and Women Entrepreneurship) and (c) a set of questions inserted by the GEM Research Committee that reflect current economic issues, such as the global economic crises included in 2008 and 2009 surveys.

For this research we considered just the questions included in the core part of the questionnaire, for studying the entrepreneurial motivation of adult people from five EU countries: Romania, Greece, Spain, Denmark and Belgium, for the year 2010.

The selected countries are involved as partners in the Leonardo da Vinci project "*Entrepreneurship in Serious. Improving the Entrepreneurs Skills through the Serious Games Supported on Social Networks*" (EiS) (2012 – 2014), that adapts a board game in a serious game for improving the entrepreneurial skills. The research presented in this article is designed for a better understanding of the entrepreneurship typologies in each of the partner countries. According to GEM classification Romania is an efficient-driven country (industrialization, "dominance of capital-intensive large organizations exploiting efficiencies

through economy of scale” (Lepoutre, Buysse, Crijns, 2011), while the other four countries are innovation-driven ones (knowledge intensive businesses and increasing dominance of the service sector). The classification takes into account the level of GDP per capita and share of mineral goods exports in the total exports.

The entrepreneurship process is summarized in Figure 1, in potential entrepreneur, nascent entrepreneur and owner-manager. For this study we consider the potential and the nascent entrepreneurs, plus the informal investors.

### Regressions

In order to understand which are the factors that influence the entrepreneurial attitude we estimated three regression models for each selected countries. As shown in Table 1, we considered three different dependent variables which capture the respondents’ decision regarding entrepreneurship. The first model (M1) estimates the impact of the independent variables on the odds of being a potential entrepreneur. The second model (M2) explains what determines the individuals to take concrete actions to start up a business and the third one (M3) investigates the odds of being an informal investor. We used six independent variables to explain the variability of these three dependent variables. The definitions of the explanatory variables are given in Table 1.

The estimations are based on qualitative response regression models, namely logit models. Hence, due to the qualitative nature of the regressand, the objective is to find the probability  $p_i$  of being an entrepreneur (potential, nascent or informal investor). Modelling regressions where the response variable is dichotomous requires the following: (1) the relationship between  $p_i$  and the regressors  $X_i$  is nonlinear, (2)  $p_i$  belongs to [0,1] (Gujarati, 2003).

One of the functions satisfying these requirements is the logistic distribution function:

$$p_i = \frac{1}{1+e^{-z_i}}$$

(1)

Where  $z_i = \alpha + \beta X_i$ .

In this context, the odds ratio is given by:

$$\frac{p_i}{1-p_i} = e^{z_i}$$

(2)

Taking into account eq. (1) and (2), if we take the natural log of the odds ratio we obtain:

$$L_i = \ln\left(\frac{p_i}{1-p_i}\right) = z_i = \alpha + \beta X_i \quad (3)$$

The  $\beta$  coefficients are estimated using maximum likelihood method. They will show the effect of the independent variables on the logit  $L_i$ . In order to get the percent change in the odds for a unit increase in one of the regressors we had to take the antilog of these values, subtract 1 and multiply the result by 100 (Scott Long, 1997).

### Results

During 2010, Romania registered the highest rate of nascent entrepreneurs (% of the 18 - 64 population who is actively involved in setting up a new business), around 3.3%, while Denmark was at the bottom of all the five countries considered, with 1.8%. In case of the rate of informal investors (% of the 18-64 population who has provided money for a business of another person), Denmark maintains its position, while the first place is occupied this time by Greece with 5.4%.

If we look at the entrepreneurial intention rate (persons that are considering starting up a business within three years), Greece again occupies the first place with 12.8%, while Spain and Denmark are at the bottom with 5.8%, respectively 5.9%.

Around 6.6% of the 18-64 population of Romania, Greece and Spain find entrepreneurship as a desirable career, while just rate for the other two countries are a bit lower. Even thou the entrepreneurship appreciated and active in

Greece, it also encounters the highest fear of failure rate from all the considered countries, 51%.

Below we discuss the results obtained from the logistic regressions from each country.

### **Romania**

In case of Romania: 6.66% of the respondents are potential entrepreneurs, 4.30% are nascent entrepreneurs and 2.19% are informal investors.

Women have around 40% lowest odds to become a potential entrepreneur than men, while for nascent entrepreneurs and investors gender is not important. According to our results, age does not influence the odds of being a nascent entrepreneur or an informal investor. In the first model (M1) age appears to be a significant factor, the odds of becoming a potential entrepreneur decreasing by 3.5% for each additional year. The „skills” variable has a positive impact on the entrepreneurial attitude regardless of the estimated model. The „social” variable which captures if the respondent knows someone who started a business in the past two years is statistically significant only for the first model (M1). According to the estimated coefficient, the odds of being a potential entrepreneur are higher by 70% for those knowing other entrepreneurs.

### **Greece**

In case of Greece: 11.16 % of the respondents are potential entrepreneurs, 4.95% of them are nascent entrepreneurs and 5% are informal investors. Our estimation results show that: the odds of being a potential entrepreneur reduces with about 50% for women and increases by 68% for those who know someone who started a business in the past 2 years. Also the likelihood to be a potential entrepreneur is higher for younger respondents. When modelling the decision of being a nascent entrepreneur, the gender or the age seems not to influence the response. A significant factor of this model

is given by the “skills” variable. Thus for the Greek respondents, the belief that they have the knowledge, skill and experience to start a business increases the odds of being a nascent entrepreneur.

### **Belgium**

In case of Belgium: 7.17 % of the respondents are potential entrepreneurs, 3.35% are nascent entrepreneurs and 3.35% are informal investors. The estimation results show that gender affects the decision of being entrepreneur when we refer to nascent entrepreneurs or informal investors. Also, for the Belgium sample, the estimated coefficients indicate that the fear of failure reduces the odds of being a nascent entrepreneur or an informal investor.

### **Spain**

In case of Spain: 5.49% of the respondents are potential entrepreneurs, 2.71% are nascent entrepreneurs and 3.12% are informal investors.

We notice that all the independent variables are significant in all the models, beside gender in M3.

The women have a lowest odd of being potential or nascent entrepreneurs than men (16% for potential and 37% decrease in odd for nascent entrepreneur). Gender is not important in the case of informal investors.

The ageing has a negative impact on the odd of being a potential and a nascent entrepreneur, but a positive impact in the case of informal investors. The youth prefer to create their own businesses, while the adults prefer to invest in the businesses of others.

Having knowledge of someone that started a business and having your own skills and competence to start a business has a positive impact on the odd of getting involved in entrepreneurship, while fear of failure a negative impact (around 20% decrease) .

## Denmark

In case of Denmark: 8.20 % of the respondents are potential entrepreneurs, 4.65% are nascent entrepreneurs and 2.71 % of them are informal investors.

For the potential entrepreneurs all the independent variables are important, while for nascent entrepreneurs gender and sex are not important.

## Conclusions

We noticed that aging can decrease the odds of being potential or nascent entrepreneur, but increase the chance of being an informal investor.

Also the most important incentive for getting involved in entrepreneurship is your own level of knowledge, skills to start a venture, while the biggest drawback it's your own fear of failure.

Nevertheless in all the countries the people are positive the regarding the business perspectives of the next six months.

In all the countries, being a woman has a negative impact on your odds to get involved into entrepreneurship.

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Appendices

Table 1.  
List of variables included in the models

Variable	Description
<b>Dependent variables</b>	
<i>M1. Odd of being a potential entrepreneur – persons that are considering starting up a business within three years</i>	
<i>M2. Odd of being a nascent entrepreneur (yes/no) - persons that take concrete actions to start up a business</i>	
<i>M3. Odd of being an informal investor (yes/no)–persons that provided funds for other ventures started by another person, excluding the purchase of stocks or bonds</i>	
<b>Independent variables</b>	
<i>Gender</i>	<i>Male/female</i>
<i>Age</i>	<i>Current age in years</i>
<i>Social</i>	<i>If they know someone personally who started a business in the past 2 years (yes/no)</i>
<i>Skills</i>	<i>If they have the knowledge, skill and experience to start a business (yes/no)</i>
<i>Opportunity</i>	<i>If there will be good opportunities for starting a business in the next 6 months (yes/no)</i>
<i>Failure</i>	<i>If fear of failure would prevent them from starting a business (yes/no)</i>

Note. Standard errors are in parentheses.

Table 2.  
Logit for Romania (N=1494)

Variable	M1	M2	M3
<i>Female (vs. male)</i>	-0.537* (0.230)		
<i>Age</i>	-0.036*** (0.007)		
<i>Knows someone personally who started a business in the past 2 years (vs. not knowing)</i>	0.531* (0.244)		
<i>Having knowledge, skill and experience to start a business (vs. not having)</i>	1.929*** (0.267)	2.017*** (0.335)	1.278*** (0.370)
<i>There are good opportunities for starting a business in the next 6 months (vs. there are not)</i>		0.712* (0.280)	1.874*** (0.405)
<i>The fear of failure does not stop them from starting a business (vs. it does)</i>	-0.873*** (0.235)	-0.913** (0.279)	
<i>Constant</i>	-1.679*** (0.411)	-3.374*** (0.523)	-0.487*** (0.321)
<i>McFadden's R2</i>	0.247	0.203	0.164
<i>McKelvey and Zavoina's R2</i>	0.394	0.324	0.312

Note. Standard errors are in parentheses.

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05 (two-tailed tests)

Table 3.  
*Logit for Greece (N=1647)*

<i>Variable</i>	<i>M1</i>	<i>M2</i>	<i>M3</i>
<i>Female (vs. male)</i>	-0.893*** (0.177)		0.804*** (0.231)
<i>Age</i>	-0.039*** (0.006)		0.020* (0.009)
<i>Knows someone personally who started a business in the past 2 years (vs. not knowing)</i>	0.517** (0.164)	0.550* (0.235)	0.922*** (0.226)
<i>Having knowledge, skill and experience to start a business (vs. not having)</i>		1.101*** (0.283)	0.649** (0.234)
<i>There are good opportunities for starting a business in the next 6 months (vs. there are not)</i>			
<i>The fear of failure does not stop them from starting a business (vs. it does)</i>			
<i>Constant</i>	-0.716* (0.328)	-3.693*** (0.532)	-4.983*** (0.545)
<i>McFadden's R2</i>	0.084	0.055	0.058
<i>McKelvey and Zavoina's R2</i>	0.162	0.141	0.138

Note. Standard errors are in parentheses.

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05 (two-tailed tests)

Table 4.  
*Logit for Spain (N=22 468)*

<i>Variable</i>	<i>M1</i>	<i>M2</i>	<i>M3</i>
<i>Female (vs. male)</i>	-0.176*** (0.061)	-0.467*** (0.088)	
<i>Age</i>	-0.036*** (0.002)	-0.019*** (0.003)	0.011*** (0.077)
<i>Knows someone personally who started a business in the past 2 years (vs. not knowing)</i>	0.789*** (0.061)	0.725*** (0.085)	1.310*** (0.081)
<i>Having knowledge, skill and experience to start a business (vs. not having)</i>	1.403*** (0.077)	1.568*** (0.117)	0.996*** (0.092)
<i>There are good opportunities for starting a business in the next 6 months (vs. there are not)</i>	0.770*** (0.064)	0.796* (0.086)	0.284*** (0.087)
<i>The fear of failure does not stop them from starting a business (vs. it does)</i>	-0.287*** (0.062)	-0.409** (0.088)	-0.220*** (0.079)
<i>Constant</i>	-2.587*** (0.130)	-4.012*** (0.191)	-5.122*** (0.187)
<i>McFadden's R2</i>	0.132	0.118	0.087
<i>McKelvey and Zavoina's R2</i>	0.274	0.284	0.194

Note. Standard errors are in parentheses.

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05 (two-tailed tests)

Table 5.  
*Logit for Denmark (N=1446)*

<i>Variable</i>	<i>M1</i>	<i>M2</i>	<i>M3</i>
<i>Female (vs. male)</i>	-0.441* (0.207)		
<i>Age</i>	-0.033*** (0.009)		
<i>Knows someone personally who started a business in the past 2 years (vs. not knowing)</i>	0.904* (0.217)	0.739** (0.285)	0.856* (0.386)
<i>Having knowledge, skill and experience to start a business (vs. not having)</i>	1.239*** (0.222)	1.578*** (0.319)	1.402*** (0.420)
<i>There are good opportunities for starting a business in the next 6 months (vs. there are not)</i>	0.605** (0.198)	0.741*** (0.266)	
<i>The fear of failure does not stop them from starting a business (vs. it does)</i>	-0.631** (0.221)	-0.635* (0.298)	
<i>Constant</i>	-2.274*** (0.417)	-3.821*** (0.576)	-5.120*** (0.776)
<i>McFadden's R2</i>	0.148	0.133	0.096
<i>McKelvey and Zavoina's R2</i>	0.239	0.299	0.249

Note. Standard errors are in parentheses.

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05 (two-tailed tests)

Table 6.  
*Logit for Belgium (N=1327)*

<i>Variable</i>	<i>M1</i>	<i>M2</i>	<i>M3</i>
<i>Female (vs. male)</i>		0.695* (0.319)	-0.707* (0.338)
<i>Age</i>	-0.0341*** (0.008)		
<i>Knows someone personally who started a business in the past 2 years (vs. not knowing)</i>	0.827* (0.240)		1.523*** (0.340)
<i>Having knowledge, skill and experience to start a business (vs. not having)</i>	1.644*** (0.294)	1.980*** (0.455)	
<i>There are good opportunities for starting a business in the next 6 months (vs. there are not)</i>	0.672*** (0.247)	1.642*** (0.377)	
<i>The fear of failure does not stop them from starting a business (vs. it does)</i>		-0.921* (0.407)	-1.303*** (0.484)
<i>Constant</i>	-2.435*** (0.493)	-5.126*** (0.753)	-4.282*** (0.643)
<i>McFadden's R2</i>	0.193	0.212	0.119
<i>McKelvey and Zavoina's R2</i>	0.377	0.429	0.252

Note. Standard errors are in parentheses.

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05 (two-tailed tests)

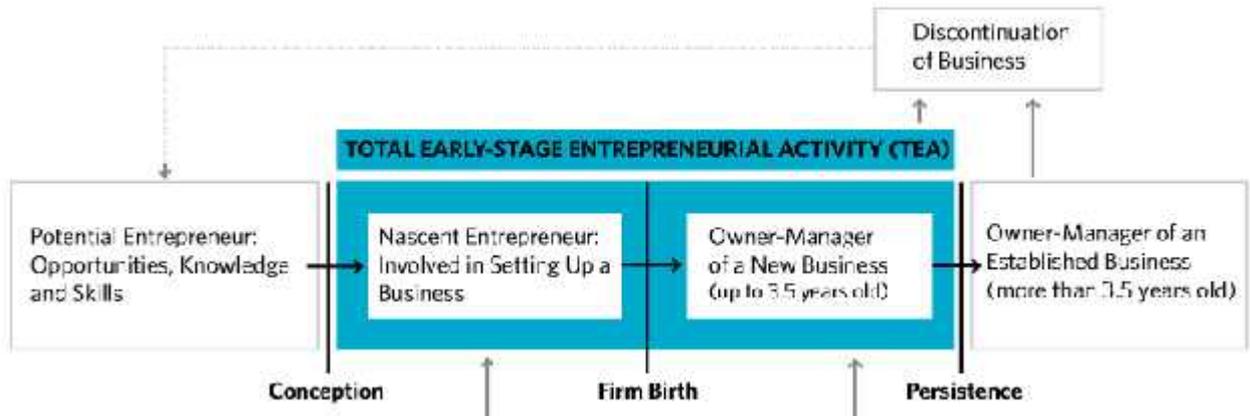


Figure 1. The Revised GEM Model

Source: Global entrepreneurship monitor 2013 global report. Fifteen years of assessing entrepreneurship across the globe (Amoros, Bosma, 2014)