

The Evolution of Early-Stage Entrepreneurial Activity Influencing Factors in Romania

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Abstract. *The aim of the article is to analyze the main influencing factors of the probability of becoming an early-stage entrepreneur in Romania. The analyzed factors are: gender, age, education, household income, work status, network, opportunity perception, perception regarding the trust in own entrepreneurial skills, perception on the society's appreciation regarding the principle of equality in life standard, perception on the society's appreciation regarding the entrepreneurial career, perception on the proper promotion of entrepreneurial successes by mass media. We estimate a logit model for each year of the 2007-2009 period and we study the main influencing perceptual and socio-demographic factors, based on the Global Entrepreneurship Monitor (GEM) Adult Population Survey database for Romania.*

Keywords: entrepreneurship; early-stage entrepreneurs; influencing factors; perceptual factors; socio-demographic factors; logit model; Global Entrepreneurship Monitor.

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Introduction

The concept of the entrepreneur is not clearly defined, its definition and its attributed role in the economic literature changed frequently along its evolution. The unending debate persists also today, researchers having the duty to define the terms they use (Bygrave, Hofer, 1991). Casson (1982) argues that the essence of entrepreneurship consist in different perceptions about the environment.

We consider that birth of a business can be considered a phase of the entrepreneurial activity, but not its starting point or its final result. The existence, the discovery of the entrepreneurial opportunity and the decision to exploit it are considered the starting point of any entrepreneurial activity (Shane, Venkataraman, 2000). Taking all this in consideration, the definition of Global Entrepreneurship Monitor on the entrepreneur's person and the phases of the entrepreneurial process have been accepted.

According to Ellsberg (1961) and Tversky, Kahneman (1992) knowing other entrepreneurs may increase the propensity of an individual to start a business. Perceptions are a mediator between preferences and behavior, affecting perceptions of both probabilities and outcomes (Tversky, Kahneman, 1992).

Among the demographic variables, age and gender have been shown to play some role in entrepreneurial decisions. According to Koellinger, P. et al. (2007), Levesque, Minniti (2006), the probability of starting a business has been shown to increase with age up to a threshold point and to decrease thereafter. Blanchflower (2004) pointed out that men have been shown to be more likely to start a business than women.

In our article we used the Global Entrepreneurship Monitor (GEM) 2007, 2008 and 2009 Adult Population Survey database for Romania. GEM is a large scale research program launched in 1997 by leading researchers in the field of entrepreneurship at London Business School and Babson College. The first research was published in 1999 and it included 10 countries. Since then the project has been extended to include 42 countries in 2007, 43 in 2008 and 54 countries in 2009. The main aim of GEM research is to study the complex relationship between entrepreneurship and economic growth, to measure the level of entrepreneurial activity between countries, to uncover factors determining the levels of entrepreneurial activity and to identify policies which may stimulate the level of entrepreneurial activity. GEM, as a research program that focuses on a major driver of economic growth, on entrepreneurship, admits the widely acknowledged phenomena that entrepreneurship is one of the most important forces shaping the changes in the economic landscape.

In each country, a survey company conducts a telephone survey or face to face interview of the adult population. ⁽¹⁾ In Romania in 2007 a representative sample of 1739 adults, in 2008 1667 adults, in 2009 1639 adults was interviewed using the standard GEM questionnaire. This survey was carried out to measure the entrepreneurial behaviour and the attitudes of adult population in Romania. The survey data are used to calculate the Total Entrepreneurial Activity Index (TEA), a comparable measure of entrepreneurial activity across countries.

GEM used the following terms in assessing the entrepreneurial activity of the adult population:

- *Nascent Entrepreneurs* are those who are actively planning a new venture. These entrepreneurs have done something during the previous 12 months to help start a new business, that he or she will at least partly own. Activities such as organizing the start-up team, looking for equipment, saving money for the start-up or writing a business plan would all be considered as active commitments to starting a business. This business has not paid salaries, wages or any other payments to the owners for more than three months.
- *Young Business Entrepreneurs* are those entrepreneurs who at least partly own and manage a new business that is between 4 and 42 months old and have not paid salaries for longer than this period. These new ventures are in the first 42 month after the new venture has been set up.
- *Early-Stage Entrepreneurs* refers to the early stage entrepreneurial activity among the adult population aged between 18-64 years, identified as nascent or young business entrepreneurs. In those cases when the respondent is involved both as nascent and young business entrepreneur then the respondent is counted only once as a nascent entrepreneur.
- *Established Business Owners* are those entrepreneurs who have set up businesses that they have continued to own and manage and which had paid wages and salaries for more than 42 months (Bosma et al., 2008, p. 11).

The paper, accepting Arenius and Minniti's (2005) recommendations, focuses on the characteristics of the population, i.e. the demographic composition, the resources, the abilities of individuals and their attitudes towards entrepreneurship, taking in account Arenius and Minniti's (2005) classification of those factors as socio-demographic factors and perceptual variables. Many factors influence an individual's decision to set a business: a perception of opportunities within their environment, whether they have

sufficient knowledge and skills, if they know other people who are engaged in entrepreneurial activity and a reduced reluctance to become involved in entrepreneurial activity through fear of failure.

The studied factors were grouped in demographic variables (such as age, gender, household income, education level and work status) and perceptual variables (such as fear of failure, alertness to opportunities, self-confidence). We studied the effect of individual perceptions and demographic variables on the probability of becoming an early-stage entrepreneur in 2007-2009.

1. Overview on the Romanian entrepreneurship

GEM reports demonstrated a relationship between a country's economic development level and its early-stage entrepreneurial activity rate (Bosma et al., 2010, Bosma et al., 2009, Bosma et al., 2008). The GEM 2009 results confirm that institutional characteristics, demography, entrepreneurial culture and the degree of economic welfare shape a country's entrepreneurial landscape (Bosma et al., 2010, p. 23).

Overall, in 2009 Romania's early-stage entrepreneurial activity rate measures 5.02%, which rate is higher than the rate measured in 2008 (3.98%). Table 1 presents the most important entrepreneurial activity rates measured in 2007-2009 in Romania. These figures are one of the lowest among the efficiency-driven economies.

Table 1

Entrepreneurial activity rates in Romania (%)

Entrepreneurial activity rates	2007	2008	2009
Nascent entrepreneurs	2.90	2.54	2.79
Young business entrepreneurs	1.30	1.56	2.30
Established business owners	2.50	2.07	3.38
Early-stage entrepreneurs	4.02	3.98	5.02

Source: GEM, Adult Population Survey, Romania, 2007, 2008, 2009.

The individual perceptions regarding the entrepreneurial activity describe a changed situation in the analyzed period. The percentage of those who considers that the fear of failure would prevent them from starting a business increased (from 28.3% in 2007 to 50.40% in 2009), meanwhile the share of those who see good opportunities for starting a business in the area where they live in the next six months (from 26.20% in 2007 to 13.80% in 2009) decreased during the global financial and economic crisis. Table 2 presents the individual perceptions in the analyzed period.

Table 2

Individual perceptions regarding entrepreneurial activity in Romania (%)

Perceptions	2007	2008	2009
Fear of failure	28.3	41.5	50.4
Has the required knowledge and skills to start a business	29.4	23.8	27.3
Knows a person who started a business in the past 2 years	41.6	37.9	35.5
Prefers that everyone had a uniform standard of living	46.6	48.8	49.3
Sees good opportunity for starting a business in the next 6 month	26.2	25.8	13.8
Thinks that those who are successful at starting a new business have a high level of status and respect	62.5	68.5	67.2
Considers that successful new businesses are properly promoted by the media	50.4	56.2	47.4

Source: GEM, Adult Population Survey, Romania, 2007, 2008, 2009.

According to Bosma et al. (2010, p. 39) in Romania the relative share of necessity entrepreneurship increased, meanwhile the job expectations for the next 5 years decreased.

2. Influencing factors of the early-stage entrepreneurial activity in Romania

Using the GEM Adult Population Survey data for 2007-2009 period, we estimated logistic regression models in order to determine the main influencing factors of early-stage entrepreneurial activity for each year in Romania using the following set of explanatory variables:

Table 3

Variables used in the model

Notation	Name	Description	Values
P_TEA (dependent variable)	Probability of being an early-stage entrepreneur	Actively involved in starting a business or owner/manager of a business which is active and younger than 3.5 years	[0,1]
GEND	Gender	The gender of the questioned person	Male/Female
AGE9c	Age categories	The age of the questioned person classified in nine categories	Age
EDUC	Education	The education of the questioned person	None/ Primary / Secondary / Post-Secondary/ Superior
HHINC	Household income	The questioned persons were categorized in one of the 3 categories on basis of how they appreciating their own financial situation.	In the upper 33%/ Average. 33-66%/ In the lower 33%
OCCUP	Work status	The work status of the questioned person	Full time / Part time / Unemployed / Retired or disabled / Student / Homemaker

KNOWEN	Knowing other entrepreneurs	The questioned persons answered if they know personally somebody who started a business in the last 24 months	No/Yes
OPPORT	Opportunity perception	The questioned persons answered if they see good business opportunities for the next 6 months	No/Yes
SUSKILL	Perception regarding the trust in own entrepreneurial skills	The questioned persons answered if they consider that they have all the necessary knowledge to set and manage an own business	No/Yes
FEARFAIL	Perception of fear of failure	The questioned persons answered if they consider that fear of failure stops them in starting a business	No/Yes
EQUALI	Perception on the appreciation of the society regarding the principle of equality in life standard	Respondents were asked if they consider that people generally think that everybody should have a similar life standard	No/Yes
NBGOOD	Perception on the appreciation of the society regarding the entrepreneurial career 1.	Respondents were asked if they consider that people generally think that being an entrepreneur is a good career choice	No/Yes
NBSTAT	Perception on the appreciation of the society regarding the entrepreneurial career 2.	Respondents were asked if they consider that people generally think that successful entrepreneurs are appreciated by the society	No/Yes
NBMEDI	Perception on the proper promotion of entrepreneurial successes by the mass media	Respondents were asked if they consider that successful entrepreneurial initiatives are properly promoted by the mass media	No/Yes

The logistic models were estimated using the STATA program.

According to the univariate tests done, the following variables were maintained as influencing factors of the early-stage entrepreneurial status in 2007:

- household income (HHINC);
- knowing other entrepreneurs (KNOWEN);
- perception regarding the trust in own entrepreneurial skills (SUSKILL);
- perception on the proper promotion of entrepreneurial successes by the mass media (NBMEDI).

The statistical analyses emphasized that the other variables have an insignificant influence in explaining the phenomena of being an early stage entrepreneur in Romania in 2007.

Table 4

The results of the logistic regression on the estimation sample for the early stage entrepreneur, 2007 (Number of observations: 1739)

Explanatory variable	Coefficient	Standard error	z statistics	p value
Constant	-4.5082560	0.2976152	-15.15	0.000
HHINC _{<i>i</i>}	6.94E-06	3.50E-06	1.98	0.048
KNOWEN _{<i>i</i>}	0.2113727	0.0657148	3.22	0.001
SUSKILL _{<i>i</i>}	0.1360408	0.0577667	2.36	0.019
NBMEDI _{<i>i</i>}	-0.13061730	0.2976152	-1.95	0.051
McFadden pseudo R ² = 0.1197 Likelihood Ratio $\chi^2(12)$ = 55.12 (p value 0.0000) Log likelihood = -202.67749				

Source: Own calculations in STATA on basis of GEM Adult Population Survey for Romania, 2007.

The logistic function has the following form:

$$\ln \left[\frac{P_TEA_i}{1 - P_TEA_i} \right] = -4.508 + 0.00006 \times HHINC_i + 0.21137 \times KNOWEN_i + 0.13604 \times SUSKILL_i - 4.50825 \times NBMEDI_i + \varepsilon_i,$$

where:

- *HHINC_{*i*}* is the household income;
- *KNOWEN_{*i*}* is knowing other entrepreneurs;
- *SUSKILL_{*i*}* is the perception regarding the trust in own entrepreneurial skills;
- *NBMEDI_{*i*}* is the perception on the proper promotion of entrepreneurial successes by the mass media;
- *i* = 1,1739 is the code of the respondent.

The values of the statistic tests indicate that the obtained model respects the exigencies of good econometrical standards. The variables are statistically significant ⁽²⁾. The variables HHINC, KNOWEN, SUSKILL have the expected sign. NBMEDI indicates that Romanian early-stage entrepreneurs were unsatisfied in 2007 by how entrepreneurial successes were promoted by the mass media, feeling a need for a better promotion, starting from their own situation. The general explanatory level of the model is acceptable, taking in account the value of the McFadden pseudo R² 0.1197 ⁽³⁾.

We can observe that in 2008 the variables with significant effect on early-stage entrepreneurial activity had changed.

Table 5

The results of the logistic regression on the estimation sample for the early stage entrepreneur, 2008 (Number of observations: 1667)

Explanatory variable	Coefficient	Standard error	z statistics	p value
Constant	-0.8332619	0.497	-1.68	0.094
GENDER _i	-0.7964308	0.285	-2.80	0.005
AGE _i	-0.2153204	0.104	-2.07	0.039
FEARFAIL _i	-0.1779668	0.088	-2.02	0.044
OCCUP _i	-0.2111083	0.078	-2.71	0.007
McFadden pseudo R ² = 0.0612 Likelihood Ratio $\chi^2(4)$ = 32.02 (p value 0.0000) Log likelihood = -245.64138				

Source: Own calculations in STATA on basis of GEM Adult Population Survey for Romania, 2008.

The influencing factors of the early-stage entrepreneurial activity in 2008 are:

- gender (GENDER);
- age (AGE);
- fear of failure (FEARFAIL);
- work status (OCCUP).

The logistic function has the following form:

$$\ln \left[\frac{P_TEA_i}{1 - P_TEA_i} \right] = -0.833 - 0.796 \times GENDER_i - 0.215 \times AGE_i - 0.178 \times FEARFAIL_i - 0.211 \times OCCUP_i + \varepsilon_i.$$

Our results correspond to literature findings. The significant variables have the expected signs. Each variable has a negative effect upon the probability of becoming an early-stage entrepreneur. According to our results, in 2008 the younger adult male people being full time employed, without fear of failure, were more likely to initiate entrepreneurial activities.

In 2009 the estimated function has similar explanatory variables to 2008, the additional influencing variable is the household income. This is the only variable which has a positive effect upon the probability of becoming an early-stage entrepreneur.

Table 6

The results of the logistic regression on the estimation sample for the early stage entrepreneur, 2009

Explanatory variable	Coefficient	Standard error	z statistics	p value
GENDER _i	-0.6428076	0.317026	-2.03	0.043
AGE _i	-0.5305872	0.1281428	-4.14	0.000
FEARFAIL _i	-0.3851601	0.1544658	-2.49	0.013
OCCUP _i	-0.1284756	0.0741976	-1.73	0.083
HHINC _i	0.0239996	0.0066256	3.62	0.000
McFadden pseudo R ² = 0.1714 Likelihood Ratio $\chi^2(5) = 65.64$ (p value 0.0000) Log likelihood = -158.65653				

Source: Own calculations in STATA on basis of GEM Adult Population Survey for Romania, 2009.

The logistic function has the following form:

$$\ln \left[\frac{P_{TEA_i}}{1 - P_{TEA_i}} \right] = -0.643 \times GENDER_i - 0.531 \times AGE_i - 0.385 \times FEARFAIL_i - 0.128 \times OCCUP_i + 0.024 \times HHINC_i + \varepsilon_i.$$

The results of the estimation in case of each model indicate acceptable values of the area under ROC curve ⁽⁴⁾, 78.92% for the first model (2007), 70.27% for the second model (2008), 80.63% for the third model (2009). The concavity of these curves emphasize that the variables chosen in the models have sufficiently high explanatory powers in order to allow a proper ranking of the Romanian people by the probability of being an early-stage entrepreneur.

Conclusions

The paper aimed to emphasize the factors which influence the status of early stage entrepreneurship in Romania in 2007-2009 period. In 2009 Romania's early-stage entrepreneurial activity rate measures 5.02%, which rate is higher than the rate measured in 2008 (3.98%). Despite this increase the measured entrepreneurial activity rates are one of the lowest among the efficiency-driven economies.

The significant variables maintained in the logistic regression models were: the household income, knowing other entrepreneurs, age, gender, fear of failure, perception regarding the trust in own entrepreneurial skills, perception on the proper promotion of entrepreneurial successes by the mass media in case of the early-stage entrepreneurs and the work status.

Our results show that between 2007 and 2008 the set of influencing variables had an important change, gender, age, fear of failure and work status became the influencing factors of the probability of becoming an early-stage entrepreneur in the period of global financial and economic crisis.

Notes

- ⁽¹⁾ Aged between 18-64 years.
- ⁽²⁾ The statistical relevance of the selected criteria is emphasized by the good values of the z statistics coefficients of the estimated function.
- ⁽³⁾ A value between 0.2 and 0.4 is preferred.
- ⁽⁴⁾ Receiver Operating Characteristic: a graphical plot of the sensitivity for binary classifier system as its discrimination threshold is varied.

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