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Analysis Of Determinants Of Early-Stage Entrepreneurial Activity In Russia

Abstract

Entrepreneurial activity is very important for the economic development of any country. The question often asked by researchers is: what causes growth in the level of entrepreneurial activity? In this paper we focused on the individual-level determinants of entrepreneurial activity – the attitudes and perceptions of entrepreneurship by individuals in the society. The objective of this research is to define how individual-level variables concerning opinions and beliefs in the society influence the early-stage entrepreneurship level in Russia.

The research is based on the Global Entrepreneurship Monitor data, which we employ using the method of least squares in order to find linear relationships between variables. The results show that two out of presented four hypotheses have been proven. The data presented show that the entrepreneurship activity in the country is positively related to individual-level perceptions of entrepreneurship in the society. These findings may be useful for further research on entrepreneurial intentions.

***Keywords**: entrepreneurship, entrepreneurial intentions, entrepreneurial activity*

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1. Introduction

Entrepreneurship is currently a topic of interest not only for researchers, but for policy makers as well. This is due to the importance of entrepreneurship and innovation for the economic development of a country. Countries focus on improving their investment climate in order to foster entrepreneurship by investing in research and development, supporting business incubators and innovation clusters, and investing in education and the development of human capital.

The question often asked by researchers is: what causes growth in the level of entrepreneurial activity in a country. In this paper we focused on the individual-level determinants of entrepreneurial activity – the attitudes and perceptions of entrepreneurship in the society. The aim of this research is to define how individual-level variables concerning opinions and beliefs in the society influence the early-stage entrepreneurship level in Russia.

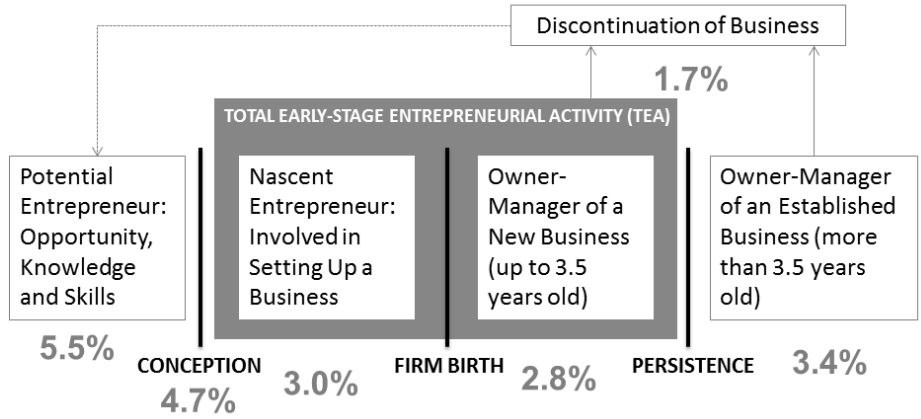
In the first section of the paper we present the theoretical background of the problem, focusing on the research on entrepreneurship and the Global Entrepreneurship Monitor definition of early-stage entrepreneurial activity. The second section states the hypotheses formulated, based on the aim of the research, and describes the research methods. The third section presents the research results, followed by a discussion of the obtained results in the fourth section.

2. Theoretical background

Entrepreneurship research generates considerable economic interest. However, there still lacks a standard definition of entrepreneurship, both as a process and as a field of study (Gartner 1990, Ucbasaran et al. 2001). The definition of entrepreneurship depends on the scientific interests of the researcher who is defining it. At the same time, entrepreneurship is a subject of interest for economists, sociologists, management researchers and psychologists, who are interested in behavior of an entrepreneur him/herself (Glinka, Gudkova 2011). The definition of offered by Shane and Venakataraman (2000) states that entrepreneurship comprises actions covering identification, assessment and exploitation of chances for introducing new products and services, ways of organizing, and markets, processes and goods by the new way of organization. This definition shows the major orientation of entrepreneurship research – entrepreneurial cognition – the way entrepreneurs think and make decisions.

According to the Global Entrepreneurship Monitor, entrepreneurship is viewed as a process comprising different phases – intending to start, starting, running a business, and discontinuing a business (Amoros, Bosma 2014). These phases do not necessarily follow one another. Also, a large number of potential entrepreneurs does not necessarily translate into a high rate of entrepreneurial activity. The situation in Russia portrays the diminishing percentage of entrepreneurial activity throughout the process. Figure 1 shows different phases of entrepreneurial activity according to GEM and the share of entrepreneurs involved into this process in Russia at different stages.

Figure 1. Involvement in the entrepreneurship process in Russia

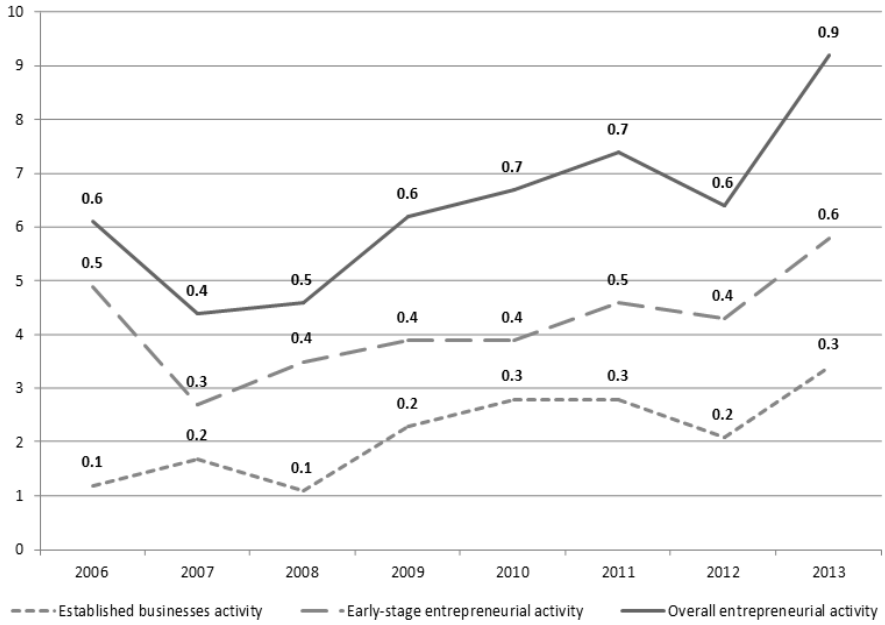


Source: own work, based on: Verhovskaya, Dorohina, 2014.

The first stage of entrepreneurship process is potential entrepreneurship – individuals who manifest the desire to start business, believe they possess the capabilities to do so, and see new business opportunities. In Russia 5.5 percent of the adult population declare that they possess the knowledge and skills to become an entrepreneur. However, only 4.7 percent come up with a conception of their own business. The next phase is nascent entrepreneurial activity – entrepreneurs running businesses less than three months old. Many firms fail in these months due to significant challenges in the first period, and therefore cannot proceed to the following stages. According to GEM 2013 data, three percent of the adult population in Russia conducts nascent entrepreneurial activity. The next phase comprises new business owners, those who have moved forward from the nascent entrepreneurship phase and conduct their business for up to three-and-a-half years. In Russia 2.8 percent of the adult population are new business owners. The GEM report states that. based on a range of empirical evidence, many new ventures fail between their inception and the first 42 months, therefore they focus on observing

the early stages of entrepreneurial activities (Amoros, Bosma 2014). One of the most significant measures for GEM is total early-stage entrepreneurial activity (TEA), which combines the nascent and the new business owners. The TEA in Russia (according to 2013 data) is 5.8 percent. Established businesses in Russia, meaning those who conduct their activity for more than three and a half years, account for 3.4 percent of the adult population.

Figure 2. Entrepreneurship activity dynamics in Russia in the years 2006–2013



Source: own work based on: Verhovskaya, Dorohina, 2014.

Figure 2 shows the dynamics of entrepreneurship activity in Russia in the years 2006–2013. It is visible that the entrepreneurship level has been slightly increasing throughout these years. The year 2013 showed an increase in early-stage entrepreneurial activity by 1.5 percentage points and established business activity by 1.3 percentage points. The overall increase in entrepreneurial activity in 2013 – by 2.8 percentage points – was the highest throughout the given years. However, entrepreneurial indicators in Russia are at a lower level than those of the European Union. Total early-stage entrepreneurial activity in the EU was at the eight percent level in 2013, and the average EU established business activity is 6.4 percent (Amoros, Bosma 2014).

The influence of individual-level factors on the extent of early-stage entrepreneurship and its dynamics can be significant. Entrepreneurial attitudes

and perceptions, such as entrepreneurial intentions or perceived entrepreneurial status, show the degree to which individuals in economies tend to appreciate entrepreneurship, both in terms of general attitudes and in terms of self-perceptions (Amoros, Bosma 2006, p. 24). According to McMullen and Shepherd (2006), individuals first react to opportunities when they see them, and only afterwards take into consideration and draw conclusions about their desirability and feasibility. Therefore, it can be said that perceived opportunities positively influence entrepreneurial activity. On the other hand, the fear of failure can deter an individual from taking up entrepreneurial opportunities and negatively affect entrepreneurial activity.

3. Research hypotheses. Research method.

Based on the theory presented above and the GEM determinants of entrepreneurial activity, we can present the following regression equation. It shows the positive dependence of the total early-stage entrepreneurship level on entrepreneurial intentions **(INT)**, entrepreneurial status **(Stat)** and perceived opportunities in the society **(OPP)**, and the negative dependence on the fear of failure level **(Fear)**.

$$\overset{\quad\ (+)\quad (+)\quad (-)\quad (+)}{TEA_t = \alpha_0 + \alpha_1 INT_t + \alpha_2 STAT_t - \alpha_3 FEAR_t + \alpha_4 OPP_t + \varepsilon_t} \qquad (1)$$

where:

Dependent (endogenous) variable:

TEAt – total early-stage entrepreneurial activity (TEA) index (% of population, based on the sample);

Independent (exogenous) variables:

INTt – entrepreneurial intentions (% of population, based on the sample),

STATt – entrepreneurial status (% of population, based on the sample),

FEARt – fear of failure (% of population, based on the sample),

OPPt – perceived opportunities (% of population, based on the sample),

εt – error (disturbance) term,

α**0,** α**1,** α**2,** α**3,** α**4**, – parameters (where $\alpha 1, \alpha 2, , \alpha 4 > 0$),

t – number of observations (1,2,..,8).

Table 1 presents the detailed interpretation of the independent and dependent variables and their mutual dependence, as proposed by the model.

Table 1. Independent and dependent variables interpretation.

Variable	Variable name	Definition	Unit	+/-
TEA	*Total Early-Stage Entrepreneurial Activity (TEA) index*	The percentage of nascent entrepreneurs (entrepreneurs running businesses less than three months old) and new business owners (who have moved forward from the nascent entrepreneurship phase and conduct their business for less than three and a half years)	Percent of population (based on the sample)	
INT	*Entrepreneurial Intentions*	The percentage of individuals who expect to start a business within the next three years	Percent of population (based on the sample)	+
STAT	*Entrepreneurial Status*	The attitude measure which assesses societal impressions whether entrepreneurs are afforded high status	Percent of population (based on the sample)	+
OPP	*Perceived Opportunities*	The percentage of individuals who believe there are opportunities to start a business in the area they live in	Percent of population (based on the sample)	+
FEAR	*Fear of failure*	The percentage of individuals who perceive opportunities but do not believe they have the required skills, knowledge and experience to start a new business.	Percent of population (based on the sample)	–

Source: own work.

On the basis of the model described above, we make an attempt to define the influence of the individual-level variables concerning opinions and beliefs in the society on the early-stage entrepreneurship level in Russia. Therefore, the following hypotheses have been formulated:

Hypothesis H1: The level of entrepreneurial intentions in Russia (INT variable) has a positive effect on the total early-stage entrepreneurial activity (TEA variable).

Hypothesis H2: The level of attitude to the entrepreneurial status in Russia (STAT variable) has a positive effect on the total early-stage entrepreneurial activity (TEA variable).

Hypothesis H3: The level of perceived opportunities in Russia (OPP variable) has a positive effect on the total early-stage entrepreneurial activity (TEA variable).

Hypothesis H4: The level of fear of failure in Russia (FEAR variable) has a negative effect on the total early-stage entrepreneurial activity (TEA variable).

The research is based on Global Entrepreneurship Monitor (GEM) data. GEM is a scholarly worldwide scientific project which is meant to research entrepreneurship in different countries. In 2013 the research involved 70 countries, which account for 75% of the world population. Within the GEM initiative the research is repeated every year with the use of the same methodology, which has two main parts. The first is an Adult Population Survey (APS), which comprises at least two thousand adults in each country. The second part of the research is called the National Experts Survey (NES), where national experts are consulted on the entrepreneurial framework conditions in their particular country (Amoros, Bosma, 2014). GEM differentiates phases of business activity, where one of the significant elements is early-stage entrepreneurial activity. The entrepreneurship process is divided into three stages. Depending on the phase of company development, an entrepreneur can be defined as either a nascent entrepreneur, a new entrepreneur, or an established enterprise. In Russian GEM research the sample for the Adult Population Survey in 2013 comprised 2,020 respondents from 18 to 64 years old, and the National Experts Survey included the responses of 36 experts. In order to test the hypotheses, the data from the Global Entrepreneurship Monitor for the years 2006–2013 was used. The method of least squares was used to find linear relationships between variables.

4. Research results

The first estimation, with the help of Gretl software, showed that the variable FEAR is not statistically significant (see Appendix A). After the second estimation (see Appendix B), we can observe the following results:

$$TEA_t = -14.0 + 0.45*INT_t + 0.30*STAT_t - 0.13*OPP_t + \varepsilon_t \quad (2)$$

t-Student: (–1.7) (2.47) (2.38) (–2.89)

$R^2 = 0.820$ $S_e = 0.53$

Within the above model, the hypotheses H1 and H2 have been verified. The influence of independent variables (INT, STAT) on the dependent variable (TEA) is in line with the theory of entrepreneurship – an increase in entrepreneurial intentions (INT) and entrepreneurial status perception (STAT) result in increasing the total early-stage entrepreneurial activity in the society. However, hypothesis 3 has not been verified, as the research results show that the level of perceived opportunities in Russia (OPP) does not have a positive effect on the total early-stage entrepreneurial activity (TEA).

We assume that the data set is well-modeled by normal distribution. With the amount of degrees of freedom equal to 4 (8–4=4), we have set the confidence level at 0.9 and significance level at 0.1. The critical value for 4 degrees of freedom is t_{α}=2.1318. The values of t-Student statistics calculated for the model are higher than t_{α}=2.1318. Therefore:

INT – parameter value is significantly different from zero,

STAT – parameter value is significantly different from zero,

OPP – parameter value is significantly different from zero.

Thus, on the basis of the model we can state that values of parameters (variables INT, STAT, OPP) are significantly different from zero. Therefore, we can reject the null hypothesis and accept an alternative hypothesis.

Interpretation of the model estimations is as follows:

- If INT (Entrepreneurial Intentions) increases by 1 percentage point, TEA (Total Early-Stage Entrepreneurial Activity) increases by 0.45 percentage points, with the other variables held constant (ceteris paribus).
- If STAT (Entrepreneurial Status Perception) increases by 1 percentage point, TEA (Total Early-Stage Entrepreneurial Activity) increases by 0.3 percentage points, with the other variables held constant (ceteris paribus).
- If OPP (Perceived Opportunities) increase by 1 percentage point, TEA (Total Early-Stage Entrepreneurial Activity) decreases by 0.13 percentage points, with the other variables held constant (ceteris paribus).

The coefficent of determination (R^2) indicates that the model has explained the variance of dependent variable (TEA) at 97.8 percent. Average residual error informs that in the model we can be wrong on average by 0.5 percentage points.

5. Discussion, limitations, contribution, and future research

There are many internal and external factors which can influence the level of entrepreneurial activity. However, this research took into account just individual-level determinants of early-stage entrepreneurial activity in Russia. The results have shown that two out of the four hypotheses (H1, H2) have been proved, while two of them were rejected (H3, H4).

The level of entrepreneurial intentions plays a great role in speeding up entrepreneurial activity in the country. If people are likely to think that they have the potential and capabilities for starting a business, their entrepreneurial intentions increase. This results in an increase in early-stage entrepreneurial activities.

The results proved that the early-stage entrepreneurial activity in Russia is positively related to the level of attitude to entrepreneurial status in the society. The perception of the status of an entrepreneur in the society influences whether people want or don't want to start their own business. If an entrepreneur is perceived positively, there is a rise in entrepreneurial intentions, and hence in entrepreneurial activity.

The research showed that the early-stage entrepreneurial activity in Russia is negatively related to the level of perceived opportunities in the society. The perception of opportunities for starting up a business usually determines whether people want to start entrepreneurial activity or not. If people suppose that they have more opportunities for their own business, entrepreneurial activity in the country grows. However, the research results do not correspond with this approach. This may be caused by the low perception of opportunities within the Russian society.

The results obtained make important an contribution to entrepreneurship research. The Global Entrepreneurship Monitor allows us to compare a picture of current entrepreneurship trends in a country in terms of the attitudes and behaviors of entrepreneurs. The data presented shows that the entrepreneurship activity in the country is positively related to individual-level perceptions of entrepreneurship in the society.

The research described above has several limitations. Firstly, there is the problem of the limited amount of data on entrepreneurship in Russia provided by GEM (limited to the years 2006–2013). The results would be more credible with a wider data range. Due to the specific aims of the research, many variables were not taken into consideration. The results would probably be more precise if individual-level characteristics were analyzed together with macro factors and firm-level variables. The next step in this research would be to compare the influence of the individual-level determinants with macro-scale factors influencing

entrepreneurial activity. Therefore in the future research into this area, we suggest taking into consideration more variables which could determine entrepreneurial activity in a country.

6. Conclusions

This article has shown how individual-level variables concerning opinions and beliefs in the society influence the early-stage entrepreneurship level in Russia. It has presented the theoretical background of the problem and the methodology of the Global Entrepreneurship Monitor. After that, we have verified our hypotheses by analyzing the determinants of early-stage entrepreneurial activity in Russia.

The research results show that such variables as entrepreneurial intentions and entrepreneurial status in the society are positively related to the total early-stage entrepreneurial activity in Russia. However, perceived opportunities for doing business turned out to be negatively related to the entrepreneurial activity in Russia, while the "fear of failure" variable has appeared to be not statistically significant. The results obtained show that the entrepreneurship activity in the country is often positively related to individual-level perceptions of entrepreneurship in the society. This indicates that entrepreneurship activity in the country is not only dependent on the macro-scale factors, but also on the individual-level perceptions. Therefore, further empirical research is needed to compare the influence of the individual-level determinants with macro-scale factors influencing entrepreneurial activity.

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Appendices:

Appendix A. Least squares method first estimation. Source: Gretl software calculation.

Model 1: OLS, using observations 2006–2013 (T = 8)
Dependent variable (Y): TEA

	Coefficient	*std. error*	*t-ratio*	*p-value*	
const	–14.9828	7.40924	–2.0222	0.13637	
INT	0.505163	0.170813	2.9574	0.05967	*
STAT	0.254119	0.117391	2.1647	0.11905	
FEAR	0.0431081	0.0324424	1.3288	0.27595	
OPP	−0.0838119	0.056159	–1.4924	0.23242	

Mean dependent var	4.200000	S.D. dependent var	0.936559
Sum squared resid	0.697485	S.E. of regression	0.482177
R-squared	0.886403	Adjusted R-squared	0.734941
F(4. 3)	5.852291	P-value (F)	0.089193
Log–likelihood	–1.592646	Akaike criterion	13.18529
Schwarz criterion	13.58250	Hannan-Quinn	10.50628
rho	−0.123773	Durbin-Watson	2.238864

Appendix B. Least squares method second estimation. Source: Gretl software calculation.

Model 2: OLS, using observations 2006–2013 (N = 8)
Dependent variable (Y): TEA

	coefficient	*std. error*	*t-ratio*	*p-value*	
Const	−13.9608	8.04359	–1.7356	0.15764	
INT	0.445274	0.179837	2.4760	0.06851	*
STAT	0.295154	0.123621	2.3876	0.07537	*
OPP	−0.133119	0.0460102	–2.8933	0.04442	**

Mean dependent var	4.200000	S.D. dependent var	0.936559
Sum squared resid	1.107979	S.E. of regression	0.526303
R-squared	0.819547	Adjusted R-squared	0.684208
F(3. 4)	6.055497	P-value (F)	0.057249
Log - likelihood	–3.443891	Akaike criterion	14.88778
Schwarz criterion	15.20555	Hannan-Quinn	12.74458
Rho	0.008749	Durbin-Watson	1.976103

Streszczenie

ANALIZA DETERMINANT POZIOMU PRZEDSIĘBIORCZOŚCI WE WCZESNYM STADIUM W ROSJI

Przedsiębiorczość znacznie przyczynia się do rozwoju gospodarczego. Często badane są przyczyny wzrostu aktywności przedsiębiorczej w kraju. W danym artykule autorzy skupiają się na indywidualnych determinantach przedsiębiorczości – postawach przedsiębiorczych oraz percepcji przedsiębiorczości w Rosji. Celem badania jest zdefiniowanie, w jaki sposób indywidualne zmienne dotyczące poglądów społecznych wpływają na poziom przedsiębiorczości we wczesnym stadium w Rosji.

Badanie jest oparte na danych Globalnego Monitoringu Przedsiębiorczości, używając których stosujemy metodę najmniejszych kwadratów, aby sprawdzić współzależności pomiędzy zmiennymi. Wyniki pokazują, że dwie z czterech hipotez zostały potwierdzone. Przedstawione wyniki udowadniają, że aktywność przedsiębiorcza jest dodatnio skorelowana z postawami przedsiębiorczymi w społeczeństwie. Wyniki badań mogą być przydatne w dalszych badaniach w zakresie postaw przedsiębiorczych.

Słowa kluczowe: *przedsiębiorczość, postawy przedsiębiorcze, aktywność przedsiębiorcza*