Russian SMEs in different types of settlement: what is the influence of global crisis?

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The aim of the paper is to analyze the changes in the structure and strategies of small early entrepreneurs under crisis.

The research structure is based on the Global Entrepreneurship Monitor (GEM) definition of entrepreneurship and its application to the analysis of entrepreneurship potential in Russia. Novelty of this work would include the differentiation of some important issues of early entrepreneurship by settlement types into five groups (rural areas, small towns, medium-sized towns, big cities and megapolises).

The socio-psychological characteristics of Russian potential and early-stage entrepreneurs have the most significant but rather ambiguous impact on total business activity. On the one hand, the fear of failure is very strong: the maximum level is expected among potential entrepreneurs in rural areas. On the other hand, the vast majority of potential and early-stage entrepreneurs considers to have knowledge and skills to open a new business.

The main indicators of starting business are social networks, perceived capabilities and a principal source of income. Under crisis the impact of perceived capabilities and social networks has increased in rural areas and cities.

The results of the research can be applied in various governmental and regional assistance programs in Russia where the type of settlement would be considered as one of the main differentiating factor.

Keywords: Global Entrepreneurship Monitor (GEM), early-stage entrepreneurship, settlement aspect, social networks, perceived capabilities

1. **Introduction**

When it comes to the all-too-human problem of recessions and depressions, economists need to abandon the neat but wrong solution of assuming that everyone is rational and markets work perfectly." These words of Nobel prize laureate Paul Krugman are more than actual in Efficiency-driven economies. That is why we try

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to figure out the indicators important for businessmen in irrational and imperfect economic world.

The main aim is to examine whether the global crisis has a different effect on the personal and socio-demographic determinants of early entrepreneurial activity in different types of settlements.

Recently the problem of support to small business has been placed in the forefront because of the recession and unemployment rate growth. Nevertheless, most of recent analyses fall short of complete adequate suggestions for the efficient government support to Russian small business.

Early-stage entrepreneurs and nascent entrepreneurs in Russian settlements as the most weak and unstable part of businessmen are the main objectives of the study.

The logic of the study is the following. The first part of the paper concerns the differences of early entrepreneurial structure in rural areas, towns and cities. Then, I would show what factors are important to start a business. And finally, it would be revealed what are significant differences of the determinants of decision to become an entrepreneur in different settlements before 2009 and in crisis in 2009.

2. Global economic crisis in Russia and conditions of entrepreneurial start: Settlement aspect

The problem of crisis shift from one country to the other is not new. Thus, after Latin America crisis in 1994 and Asian crisis in 1997-19989 the problem was actively discussed in economic literature. And already 10 years ago the economists have showed that at the age of free capital movement even slight faults of economic policy can cause incommensurably strong reaction all national markets and lead to serious economic shocks (Krugman 1999). And the most serious problems arise in the countries that have their own internal economic problems.

The financial recession in Russia affects the most seriously the entrepreneurial start conditions of Russian SMEs. The abilities to attract formal investors to finance a new business fall. The growth of financial barriers increases already high dependence on informal investments and "love" capital. Such credit sources are less risky but at the same time they are less efficient (Murzacheva 2008). Moreover, the resource of "love" capital – savings of households – has also reduced because of the inflation, the growth of unemployment rates and decrease of salaries. Particularly, the results of official statistical surveys indicate the growth of consumer prices (for more than 2% in January, 2009 and for 8,1% from January to

September of 2009) [2], the growth of part-time employment and the fall of industrial production (more than 10% in 2008).

Under such conditions the development of entrepreneurial potential in Russia becomes the most important economic and social goal. On the one hand, the growth of entrepreneurship leads to the economic growth of the country. On the other hand, business activity is the mechanism of adaptation for unemployed and individuals who have lost high salary incomes.

At the same time, the crisis dictates rigid constrains to government support. So, the strongly differentiated approach is necessary. And that is why the first step for new support programs involves the analyzing of the influence of various factors on the entrepreneurial choice in different settlements.

Moreover, GEM methodology allows to separate spatially and dynamically comparable entrepreneurial groups for the purposes of the study (Obraztsova 2007).

As it has been showing repeatedly in economic literature, the position of small entrepreneurship is weaker and more unstable at the earlier stages of business activities (Arenius-Ehrstedt 2008). It concerns financial conditions, the amounts of capital and so on. Nevertheless, the support to nascent entrepreneurs as the main addressee of all government programs cannot become the most efficient strategy if the country is not homogenous by the tendencies of social and economic growth itself. Especially the efficiency of such programs of support falls if the irregularity is set in the development of entrepreneurship and the design of framework business conditions. And this is the case of Russia (Gabelko 2008, 2009). The recent example of failure in the field of entrepreneurship support is the program of favorable privatization terms for small business in Russia in 2008.[3]

In order to design a really efficient program of a government support for small business it is necessary to conduct a comparative analysis. The study should analyze the tendencies and factors that are significant for early-stage and nascent entrepreneurs. Also it would take into account socio-demographic and cultural peculiarities of real economic conditions in different parts of Russian Federation.

Meanwhile, settlement aspect is more actual to the analysis than regional one at the context of small entrepreneurship development. For example, the comparison of Moscow or Saint-Petersburg with their suburbs and small towns not far from the city is inappropriate because of different socio-economic conditions and living standards. On the contrary, the application of spatial economics shows that community of socio-economic environment in the settlements of the same type forms the homogenous entrepreneurial groups. GEM methodology of adult population surveys allows to prove this hypothesis empirically.

[2] http://www.gks.ru/bgd/free/b04_03/Main.htm

[3] Federal statute "About the peculiarities of alienation of real assets in the regional ownership …" from 22 July, 2008.

The results of the analysis based on GEM data that has been carried out to find the determinants of the entrepreneurial strategies in Germany (especially after reunion of Western and Eastern parts) has shown up the community of the factors influencing the entrepreneurial choice on different types of settlement (Sternberg-Wagner 2002).

Moreover, Arenius and DeClercq (2005) argue that individuals differ in terms of their perception of opportunities because of the differences between the networks they are embedded in. The theoretical foundations of this study are network theory and human capital theory. In this paper we propose that different *types of settlement* have differently structured networks. We make the distinction between rural and urban areas and big agglomerates.

We are proposing that rural areas have networks which are characterized by strong relationships among a limited number of people. It is more likely that the current residents of rural areas have been living there for a significant amount of time. Therefore, networks in rural areas have a high level of network cohesion.

Big agglomerates or, to a lesser extent, urban areas are proposed to have networks with loose ties among their residents. These areas are characterized by a higher number of potential contacts and by a higher likelihood that new contacts move into the area.

In short, agglomerate areas will be more likely to have extensive networks of 'loose' contacts among their residents and thus their networks characterized by a lower level of network cohesion.

Arenius & Minniti (2005) found that, across all countries and across genders, perceptual variables and, in particular, the perception that individuals have of their own entrepreneurial abilities is very important. Their results suggest that those who perceive themselves as possessing the necessary skills are more than 6 times more likely to be nascent entrepreneurs than those who do not believe to have the necessary skills. Knowing other entrepreneurs and perceiving entrepreneurial opportunities also had a significant positive effect. Fear of failure on the contrary decreased the probability of entrepreneurial activity.

3. Data sources and GEM methrology

The data of Russian entrepreneurial potential surveys based on GEM methodology and questionnaire have allowed to carry out the analysis of the tendencies connecting early-stage entrepreneurial dynamics and behavioral choice that has arisen in the period of 2006-2009, just before the start of global crisis (2006-2008) and under Russian crisis (2009).

First of all, I would point out some basic principles of GEM methodology[4].

[4] http://www.gemconsortium.org/

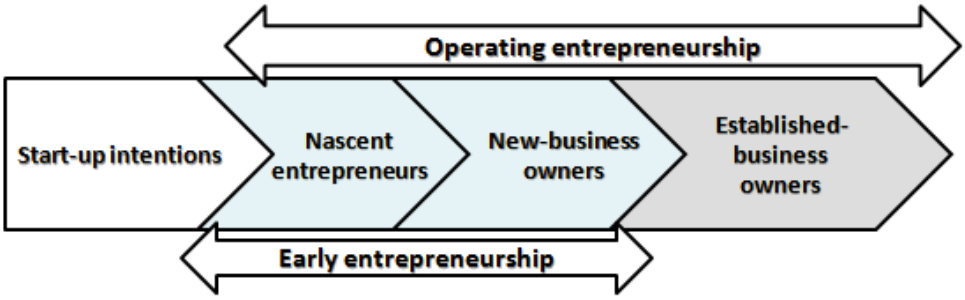
It divides entrepreneurs in three groups on the base when the business got the income for the first time:

- nascent entrepreneurs (starting business, income less than 3 months)
- new/baby business (income from 3 to 42 months)
- established business (functioning more than 42 months).

Nascent entrepreneurs and baby businessmen form the group of early-stage entrepreneurs. Start-up intentions are defined as the individuals who want to launch a business and have some skills and knowledge for it (Reynolds-Bosma 2005).

The figure 1 shows the main steps of business growth in accordance with GEM Methodology.

Figure 1. The stages of entrepreneurship development, GEM methodology



Source: own creation

The data in my work is divided into five groups by settlement type:

- rural areas,
- small towns (population under 100 thousand),
- medium-sized towns (from 100 to 500 thousand people),
- big cities
- megapolises.

Then, during the research, I have managed to regroup the data into three clusters (rural areas, towns and cities).

Novelty of this work would include the differentiation of some important issues of early entrepreneurship by settlement types. GEM Russia APS data file for 2006-2009 was divided into five groups: rural areas, small towns (population under 100 thousand), medium-sized towns from 100 to 500 thousand people, big cities and megapolises.

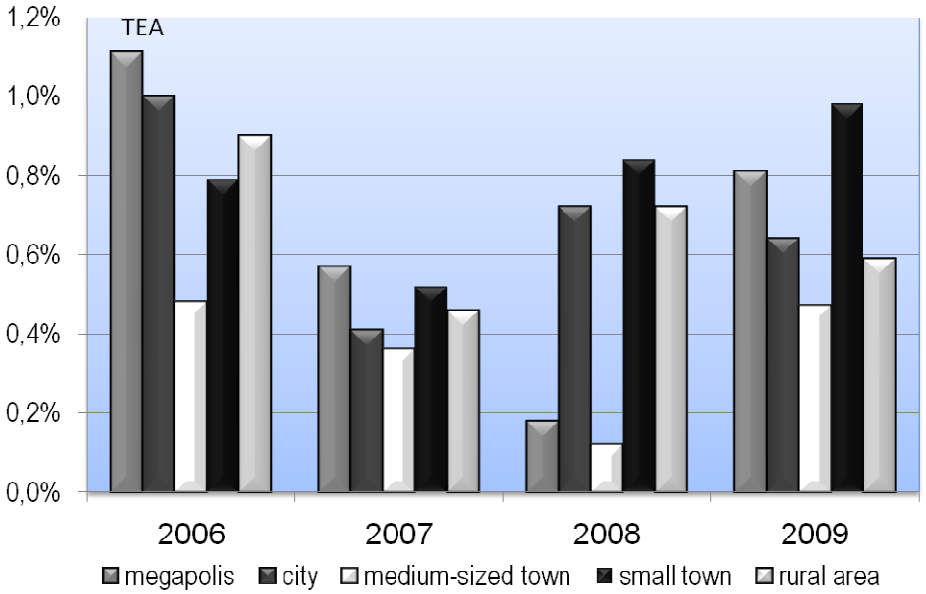
4. Comparative analysis of nascent entrepreneurial activity dynamics under global crisis conditions: Settlement aspect

At the first stage of this research early-stage entrepreneurs have been divided into five clusters by settlement type. Standard demographic classification has been used: rural areas (in accordance with the glossary), and small towns (from 10 to 100 thousand inhabitants), and medium-sized towns (from 100 to 500 thousand residents), and cities (from 500 to 750 thousand inhabitants), and megapolises (more than 750 thousand residents).

The structural and dynamic analysis of entrepreneurial activity at early stages has revealed certain settlement features of business development under crisis conditions in 2006-2009. The entrepreneurial reaction on toughening financial and economical conditions can be analyzed in the context of entrepreneurial activity itself as well as in the context of various qualitative indicators.

The following graph (figure 2) shows the dynamic analysis of nascent entrepreneurial activity through four recent years in different types of settlement.

Figure 2. Early-stage entrepreneurial activity: dynamic analysis



Source: own creation

Early entrepreneurial activity in cities, megapolises and rural areas has decreased from 2006 to 2009. Otherwise, the nascent entrepreneurial activity in small towns has increased. The rates are significantly different at 5% level in 2006-2009. Also, it is necessary to mention that the decrease of the indicator has started

in 2007 – earlier than the official Russian statistics has shown the production decline and recession in the economy.[5]

All in all, the heterogeneity of dynamics of qualitative indicators testifies to the effect that settlement peculiarities exist for those who have chosen small business as the behavioral strategy in the period of crisis.

5. Qualitative indicators of early-stage economic activity in different types of settlements: Dynamic analysis

In terms of the entrepreneurship theory (Chepurenko 2007) the crucial indicators of entrepreneurial potential quality that determine the individual choice to start a business are very closely associated with individual judgment of three main factors:

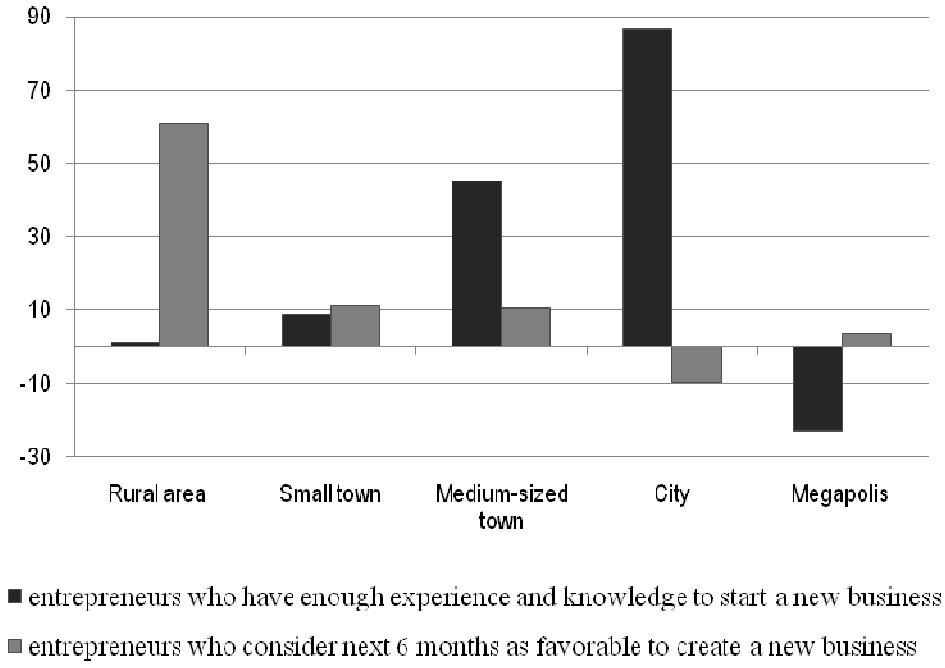
- Framework conditions (i.e. the quality of economic environment) – so-called indicator of perceptual abilities;
- Individual knowledge and experience (i.e. the quality of human capital) – so-called indicator of perceived capabilities;
- Economic risk rate of business activity (on the basis of self-appraisal).

Firstly, the individual assessment of factors specified above has been estimated for nascent entrepreneurs by each settlement type. The group of nascent entrepreneurs has been chosen for the qualitative analysis as the most representative from the cluster of operating entrepreneurship. Furthermore, it is the most unstable and unprotected businessmen.

Secondly, the dynamics of the constructed indicators has been calculated on the basis of growth rates of minimum value (5% significance). The results of the analysis are presented at the figures 3-4.

[5] www.gks.ru

Figure 3. Qualitative indicators of early-stage economic activity: dynamic analysis of future conditions and perceived capabilities, % to all nascent entrepreneurs

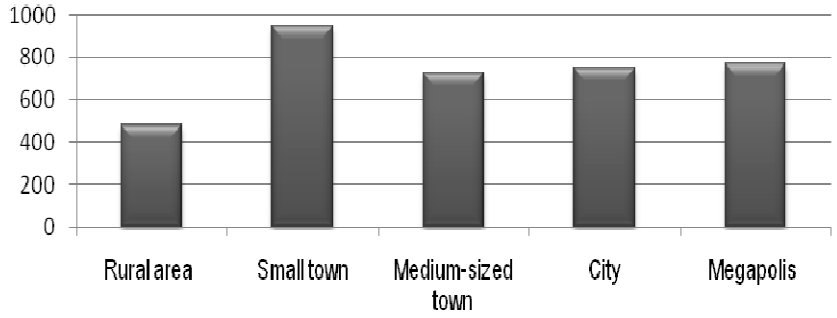


Source: own creation

Qualitative indicators of nascent entrepreneurs, analyzed in the 2006-2008 period show the high level of confidence in the proper skills and knowledge (perceived capabilities) in all settlements, excluding megapolises.

All, except cities see good opportunities to start a new business in next 5 months. On the contrary, the level of fear and lack of knowledge among early entrepreneurs is very high..

Figure 4. Qualitative indicators of early-stage economic activity: dynamic analysis of the rate of "fear", % to all nascent entrepreneurs



Source: own creation

The impact of socio-psychological characteristics of Russian early-stage entrepreneurs on total business activity is rather ambiguous. On the one hand, the fear of failure is very strong: the maximum level is expected among potential entrepreneurs in rural areas. On the other hand, the vast majority of potential and early-stage entrepreneurs consider to have knowledge and skills to open a new business. The rate of "fear" is higher in small towns and rural areas.

Thus, the results of analysis are very controversial. So, we need to check the significance of each factor to the entrepreneurial choice. For this purpose the ordinal regression for three types of settlement is constructed.

6. SME as a behavioral strategy in settlements before a global crisis and under the crisis conditions

First of all, nonparametric statistics has been selected to analyze behavioral strategies in different groups of settlement. The method which has been chosen for the comparative factor analysis is stipulated by the structure of basic data. Secondly, the independent variable (IND) has been formulated in the form of attributive indicator. It is measured in the ordinal scale and possesses three values depending on the extent of individual involvement in the business activities (according to GEM methodology of selecting involvement stages, as shown in figure 1).

So, the following thresholds have been determined for the independent variable:

1. who does not relate to entrepreneurship (IND = 0),
2. who has start-up intentions (IND = 1),
3. who is involved in operating entrepreneurship (IND = 2).

All tested independent variables can be divided into three groups: economical, social and behavioral characteristics. And all these factors are measured at the ordinal scale.

The logic of the study how various factors affect the individual entrepreneurial choice was the following:

- The estimate how significant the differences between quantitative and qualitative indicators of entrepreneurial activity (criterion of rank sums);
- Regrouping of settlements in order to aggregate clusters (enlarge group occupancy) by consolidating insignificantly different types of settlement;
- Contingency table analysis (on the basis of Pearson contingency coefficients);
- Regression analysis

Now consider the successive steps of factor analysis of the settlement involvement in the business activity. The results have been obtained with the use of the analytical software SPSS.

The first step of this research analysis has allowed regrouping settlements into three clusters which are homogeneous by qualitative and quantitative indicators of early entrepreneurial activity:

1. Rural areas
2. Towns (up to 500 thousand inhabitants)
3. Cities (more than 500 inhabitants, including megapolises)

This aggregated classification reflects significant differences in the conditions of entrepreneurial start and development. The selected grouping is homogenous by the human capital of early entrepreneurs and by economic environment but at the same time the groups are significantly different between themselves.

At the second step of the factor analysis the cluster formation has been done to form a primary data file for each aggregated group and for each of four analyzing years. Then the impact of 44 indicators on the predictor has been tested in each primary data file (on the basis of Pearson contingency coefficients).

At this stage of analysis it is obvious that the differences in the evaluation of the future for an enterprise affect the choice to start a business or not. This tendency is typical to cities and megapolises, rural areas and small towns on 2006. The income sources are also important for a decision to become an entrepreneur.

The level of education is surprisingly insignificant; a weak impact is only tested in small and medium-sized towns. In rural areas a certain influence can be rendered by the stereotype the entrepreneurship is a desirable career. Despite the controversial dynamics of "fear" for nascent entrepreneurs, the impact of the percentage of those who is afraid to start a new business has not been tested.

The evaluation of Pearson contingency coefficients has determined the factors that are significant for making a decision to start a business. And this result has allowed passing to regression factor analysis.

Thus, the most stable impact on the entrepreneurial involvement has been demonstrated by the indicators of social networks and perceived capabilities irrespective of the settlement type and the year.

These factors have turned out to be significant in all constructed regressions. The interpretation of the variables that has been used in the regression is presented at the table 1.

Table 1. The factors of behavioral choice: interpretation of the variables

Mesure	Description
Indicator of social networks	Percentage yes on item: You know someone personally who started a business in the past 2 years?
Indicator of perceived capabilities	Percentage of 18-64 population (individuals involved in any stage of entrepreneurial activity excluded) who believe to have the required skills and knowledge to start a business
Salary as a main source of income	Percentage of 18-64 population who consider a salary as a principal source of her/his income
Profit as a main source of income	Percentage of 18-64 population who consider a profit as a principal source of her/his income
Another principal source of subsistence	Percentage of 18-64 population who consider another sources of income as the main ones

Source: own creation

The ordinal regression (binding function – logit) has been used as all independent variables detected at the stage of contingency analysis are measured at ordinal scale. The dependent variable that is also the same for all regressions is ordinal. As it has been pointed out earlier, the regressant divides the respondents into three thresholds: the population not involved in the entrepreneurship, those who have start-up intentions (latent entrepreneurs) and operating entrepreneurs. Table 2 represents the summary of all model estimations

Table 2. The consolidated information about regression estimations: Pseudo R-Square

Type of settlement	**Pseudo R-Square (Nagelkerke)**			
	2006	**2007**	**2008**	**2009**
Rural area	0,498	0,565	0,694	0,678
Town	0,574	0,611	0,572	0,555
City	0,533	0,571	0,508	0,825

Source: own creation

As the summary information of tables 2-3 shows, all factor models are significant, the level of total dispersion explanation by the business involvement feature varies (by years and by settlement 50-70%). So, model assessment is quite good. The significance chi-square is less than 0,0001.

Table 3. The consolidated information about regression estimations: chi-square significance

Type of settlement	**Model fitting information (Chi-square sig.)**			
	2006	**2007**	**2008**	**2009**
Rural area	3,00E-26	4,30E-24	1,50E-32	4,41E-34
Town	8,00E-55	1,60E-61	2,30E-49	3,65E-01
City	1,00E-56	2,90E-50	2,00E-48	6,64E-61

Source: own creation

Additionally, the observed values differ insignificantly from expected frequencies that have been estimated on the basis of the regression models. Moreover, the significance of Pearson chi-square test decreases from 2006 to 2009 (see table 4). That means a very high approximation degree.

Table 4. The changes in structure and significance: 2006-2009

Type of settlement	changes in factor structure through 2006-2009 (+\–)	changes in significance of factors through 2006-2009(+\–)
Rural area	+	+
Town	–	+
City	–	+

Source: own creation

We would remind that estimators of regression parameter are thresholds for dependent variable and locations for factors. Analyzing locations can interpret the influence of selected factors and evaluate the rate of such influence assessing the probability that the regressor would attain the location level under certain conditions of the model.

For inhabitants of **rural areas**, in 2006 the most significant impact renders the indicators of perceived capabilities (the appraisal of knowledge and skills to launch a business) and of social networks (the question whether a respondent is acquainted with an entrepreneur who has started a business in the recent two years). Income indicators are insignificant for this group. In 2007 the indicators of perceived capabilities and social networks are less significant in rural areas. The profit as a main source of income has the highest influence. In 2008 the list of significant factors changes again. The impact of social networks is positive whereas the impact of perceived capabilities is negative this year. In 2009 the significance of these two factors is much stronger. Equally important that the impact of both social networks and perceived capabilities is positive. So, in crisis (2009) proper skills and knowledge can positively affect the decision to become an entrepreneur.

For **town** residents observed and expected frequencies differ insignificantly, as Pearson chi-square equals 0,025 in 2006 and falls to 0,00001 in 2009. Over a four-year period of analyzing settlements (from 2006 to 2009) the regression compiles the same four factors. The indicators of social networks and perceived capabilities are significant in towns as well as in rural areas. But the impact is not absolutely the same because these indicators affect negatively in towns (and in different ways in rural areas).

Besides, the regression models include three indicators of main income source – a salary, a profit and other sources (pensions, unemployment benefits, scholarships and so on).

All these variables affect positively on the entrepreneurial involvement in 2006-2008.

The composition of significant factors in **cities** over an analyzing period is rather similar to the combination of variables for the towns. The list of factors remains the same during the analyzing four-year period but the significance is changing. Thus, the indicators of social networks and perceived capabilities affect negatively on the entrepreneurial involvement in 2006-2007. Then, in 2008 the perceived capabilities become the positive and the most significant factor. And as "fortune favours the bold", certain group of people may become businessmen under crisis conditions. Among variables of income sources the profit as a main source of income influence positively in cities over an analyzing period. In 2006 this factor has the most significant impact.

Table 5 presents the main results of all regression models for 2006-2009 in three settlement types.

Table 5. SME as a behavioral strategy: parameter estimates

Year	Factors estimate/ Type of settlement	Indicator of social networks	Indicator of perceived capabilities	Salary as a main source of income	Profit as a main source of income	Another principal source of subsistence
2006	Rural area	0,97	-17,08	not sig.	not sig.	not sig.
	Town	-15,53	-18,14	0,64	3,58	0,49
	City	-15,65	-18,38	-0,14	2,48	-0,01
2007	Rural area	-1,9	-2,09	0,45	1,63	-0,45
	Town	-17,15	-18,92	0,62	2,09	0,11
	City	-0,43	-3,18	-0,34	1,2	-0,16
2008	Rural area	2,53	-4,99	not sig.	not sig.	not sig.
	Town	2,88	-21,9	0,31	2,53	0,48
	City	0,05	-24,63	0,29	2,36	-0,18
2009	Rural area	16,07	20,25	no data	no data	no data
	Town	-0,09	-0,3	no data	no data	no data
	City	1,29	20,88	no data	no data	no data

Source: own creation

On the whole, the regressions show that in pre-crisis period from 2006 to 2008 the positive impact have main sources of income and social networks in rural areas. In contrast, under crisis, in 2009, indicators of social networks and perceptual capabilities have become positive factors in rural areas and cities. So, these variables have changed their initial impact in the model. In towns in 2009 social networks and perceptual capabilities have stayed the negative factors whereas the income indicators have become insignificant.

7. Conclusions and implications

The study has established the generalities and differences in the development of Russian early-stage entrepreneurs before recession and under crisis conditions.

The analysis of the factors that have set conditions for observed differences have revealed the fact that under crisis conditions the decision to start or continue a business activity depends not only on economic but also on social and psychological conditions

The study that has been conducted has exposed a limited set of factors influencing an individual choice of behavioral strategy.

After the comparative analysis of early-stage entrepreneurial development in different types of settlement we have chosen and tested more than forty variables in order to prove whether there is a connection between these indicators and entrepreneurial involvement of Russian population. In all settlements the interconnection between entrepreneurial choice and indicators of social networks and perceived variables have been found. Additionally, principal sources of income can affect the business activity. Still, the influence of the factors in unstable over an analyzing period and differs in three settlement groups. In fact, from 2006 to 2008 main sources of income and the indicator of social networks in rural areas affect positively. On the contrary, under crisis the impact of perceived capabilities and social networks has increased in rural areas and cities.

So, the strengthening influence of the indicator of social networks has become the common feature of all settlement types. The future research would allow to figure out whether it is a national characteristic of Russian entrepreneurs or a common indicator for all businessmen. At the same time it is obvious that the informational, fiscal and other support and the development of social networks (including microfinance centers and business-incubators) are much more important than just additional resources for crediting small Russian business.

Under detailed consideration the received results can be implied as the base for development of complex, differentiated by settlement type approach government support for Russian SMEs, especially under crisis conditions. The results of the research can be also used for further elaboration of social and information policy in this field, organization and distribution of educational and re-training programs.

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