Assessing the Potential of Small Business Development in the Northern Region of Russia Based on Correlation Analysis

I.V. Takmasheva[1], D.V. Sannikov[2]

Abstract:

The present article deals with the study of the current state of small business in the Khanty-Mansiysk Autonomous District – Yugra.

For this purpose, a systematic analysis of the following socio-economic development indicators of the District was carried out: the average number of small business employees (excluding external part-time employees), trade turnover of small businesses, and expenditures of the consolidated budget of the entity of the Russian Federation on the development of entrepreneurship.

The authors of the article assess the contribution of small business to the gross regional product. In the course of the research, using correlation analysis, the intercorrelation among small business development indicators of the Northern Region of Russia was revealed.

The strongest correlation was observed between the number of small enterprises and the number of people employed in small enterprises, while the weakest correlation was revealed between the number of employees and the budget expenditures on the national economy.

The research results can be used by specialists working in the departments dealing with the support of small and medium-sized businesses in the region, as well as by those who are analyzing the current state of the entrepreneurial business and assessing the effectiveness of implemented measures.

Keywords: The Northern region, small businesses, correlation analysis.

JEL Classification: L26, R11, R58.

---

[1]*Yugra State University, d-lembert@mail.ru*
[2]*Yugra State University*

1. Introduction

The issue of selecting priority development fields of small business is currently central in almost all regions of Russia. This is because small enterprises play a significant role in ensuring the modernization of the Russian economy, improving living standards, creating new jobs, and developing modern innovative infrastructure of society. Government and regional authorities undertake annually the range of measures directed on support of business entities. These measures include improvement of the legislative framework, the provision of property, financial, tax, information, and advisory support to economic agents.

Today, many researchers note that almost all regions of Russia develop typical measures aimed at small business development that do not consider the exceptional features of the territory. Unconditional is the fact that each region of Russia is a unique economic entity. This uniqueness and exclusivity are manifested, for example, in the level of socio-economic development, spatial organization of the territory, the structure of the national economy sectors, and the existing infrastructure. For example, the Northern regions of Russia (which include also the Khanty-Mansiysk Autonomous District – Yugra) are characterized by severe natural climatic conditions, significant distances among populated localities, high transport costs, orientation on increasing volumes of extraction of fuel and energy resources and exploitation of available resources as well as poorly developed infrastructure. The presence of all these adverse factors makes it necessary to adjust the regional policy pursued in the field of state support of small businesses (Zedgenizova and Ignatyeva, 2017; Akhmetshina *et al.,* 2017).

2. Literature Review

Small business sphere is the research object of many Russian and foreign scientists. This is due to the challenges of the current stage of economic development that arise before the scientific community. To date, the authorities of many countries and regions have come to understand that the course for further innovative development cannot be implemented without providing extensive opportunities for entrepreneurs to carry out their activities. Taking this into account, the researchers are faced with the task of discovering new market niches, implementing new interaction models between the state and business, as well as describing and developing social entrepreneurship. In addition, in the context of the government course for modernization and implementation of innovative technologies, innovation policy should be carried out in the region by regional authorities, considering the ongoing global changes.

One of the important research areas attracting attention of contemporary scientists is the issue concerning the effectiveness of state support of small businesses. Some domestic researchers focus on improving the process of strategic planning in relation to small business (Mirzoyeva, 2015). In connection with the growing

interest in "lean manufacturing", some scientists are engaged in the development of new management models of a small enterprise and its current capital (Egorova and Belobokov, 2017). According to Polozkov and Chvanov (2015) small business today, in addition to financial and material support needs special tax preferences.

Quite interesting is the study of Sharokhina (2016) in which the author identifies the reasons why entrepreneurs are limited to only mandatory type of insurance. These reasons include the reluctance of businesses to spend money on insurance, the presence of hidden accounts, increasing the tax base in case of obtaining insurance benefits by small business, and some others (Sharokhina 2016; Beglova, *et al.,* 2017). Based on the analysis of the banking methods of assessing the creditworthiness of small businesses, Abramyan (2015) highlighted the shortcomings of the existing assessment models, namely shallow analysis of the borrower's business structure, and the lack of the current solvency criterion in the banking assessment methods.

Currently in Russia the main elements of the innovation infrastructure are being created. This process involves a significant number of scientists and regional authorities' officials, however, to date significant results have not yet been achieved because innovation processes have little impact on economic development. This is due to the low quality of corporate governance (Lapshenkov, 2016), the current market structure, adverse economic conditions, and lack of resources to implement innovations at small businesses. In this regard, highly relevant is the consideration of the need for partnerships between research organizations and small innovative enterprises (Rudenko *et al.,* 2016; Levushkina 2016; Kubikova and Akhoroshilova, 2017).

According to the Strategy for Innovative Development of the Russian Federation until 2020, a significant role should be played by the Northern regions of Russia, which possess great resource potential (Bogomolova, 2016). This led to the growing interest of Russian scientists in the study of regional features of the Northern territories economy, including the entrepreneurial sector. These trends are reflected in the works of Islamutdinov (2016), Korostelyova, Razdrokov, Krasilnikov and Makarov (2015), Rod', Khromtsova, Yesipova and Panenko (2016), Shinkevich, Kudryavtseva and Razdrokov (2016).

Islamutdinov (2016) pays special attention to the study of approaches to forecasting the development as well as the issues of assessing the effectiveness of innovative institutions. The scientist proposed his own classification, and refined the structure of institutions promoting innovative behavior, as well as analyzed their evolution. Some works of Russian researchers deal with the analysis of the level of openness of national innovation systems in terms of institutional approach (Shinkevich *et al.,* 2016; Kitova *et al.,* 2017). Others assess tax revenues from oil exploration on the Arctic shelf (Korostelyova *et al.,* 2015).

The economic assessment of the resource potential of traditional industries and crafts of the Northern regions is conducted in the scientific work of Araslanov and Bogomolova (2016). From the viewpoint of the scientist, Khanty-Mansiysk Autonomous District − Yugra has rich natural resources (forest, land, water, and biological resources) and hydrocarbon raw materials. All these factors affect the formation of life support and the traditional life pattern of indigenous minorities of the North (Araslanov and Bogomolova, 2016). The results of the study of the current status of independent (commercial) cultural complex of the Khanty-Mansiysk Autonomous District – Yugra are presented in the work of Rod', Khromtsova, Esipova and Panenko (Rod' *et al.,* 2016).

The works of foreign researchers, who raise many pertinent issues, are of great interest as well. Some foreign scientists are studying the regional business environment (Hong-Tao and Dong-Ping, 2011). Others believe that one of the methods to assess the effectiveness of state support providing to small business are international ratings (Williams and Round, 2009). Some foreign researchers adhere to an opinion that supporting entrepreneurial education and developing team competencies is of great importance (Williams and Dzhekova 2014; Breckova, 2016).

According to the authors of the present paper, despite the high level of scientific works in the field of small business development, the problem of assessing the potential of small business growth in the Northern region based on correlation analysis deserves more attention. The authors of the present study put forward a hypothesis that all indicators of socio-economic development of small business in Khanty-Mansiysk Autonomous District – Yugra are strongly intercorrelated. With this idea in mind, according to the authors, a negative change in one indicator may have adverse consequences for the entire regional entrepreneurial sector.

3. Methods

The research object of the present work is small business of Khanty-Mansiysk Autonomous District – Yugra. The study aims at identifying the existing relationships among the development indicators of small business in the Northern region. In accordance with the set goal, it is necessary to gradually solve the following tasks:

1) to investigate the dynamics of small business development indicators in the Khanty-Mansiysk Autonomous District – Yugra for 2000-2016 in terms of official data of Federal State Statistics Service of the Russian Federation;
2) to carry out a comparative analysis for each group of indicators for the period under consideration:

− distribution of small business (The Regions of Russia. Socio-economic indicators, 2017);

− average number of people employed in small enterprises (The Regions of Russia. Socio-economic indicators, 2017);
− trade turnover of small enterprises (The Regions of Russia. Socio-economic indicators, 2017);
− the amount of the regional budget funds allocated to support small business (The Regions of Russia. Socio-economic indicators, 2017);
3) to analyze the time series characterizing the development level of small business in the District and to identify the correlation among the different groups of indicators using the correlation analysis.

The following methods were used in the present study:

1) statistical methods were used when grouping heterogeneous statistical indicators and studying their dynamics over the period under consideration;
2) correlation analysis was used to process grouped statistical indicators; it allowed revealing positive and negative correlations among the indicators of small business development in the Northern region.

In addition to the above-mentioned basic research methods, comparative analysis methods, special methods of economic analysis, as well as visualization of data in tabular and graphical forms were also used effectively. The reliability of the study was confirmed by the fact that the statistical indicators of the Northern region were taken from official publications (reports and analytical notes) and statistical collections of the Federal State Statistics Service of Russia.

4. Results

According to official data, in the territory of Khanty-Mansiysk Autonomous District – Yugra there are about 23.5 thousand subjects (excluding individual entrepreneurs) working in the field of small and medium-sized businesses. At the same time, every second small and medium-sized business entity receives state support in a form that allows increasing the contribution of small and medium-sized businesses, involving 130 thousand employees, to the Gross Regional Product up to 15.5%. The structure of small business demonstrates the general trend characteristic of domestic entrepreneurship. The predominant types of entrepreneurial activities are trade, public catering and other types of activities, including services. In the field of construction and industry, small business is represented insignificantly. The number of people in small business in the Yugra is presented by data on the average number of employees (Figure 1). Presented figures reflect the tendency to increase the number of employees in small enterprises from 43.7 thousand people in 2000 to 97.2 thousand people in 2016. In the period from 2000 to 2003, the average number of employees decreased on average by 0.55 thousand people. Active growth began in 2004 and continued until 2012. After this period, the number of employees was decreasing annually. As of 2013, the number of employees decreased by 3.4 thousand people.

Figure 1. *Dynamics of the average number of employees (without external part-time employees), thousand people*
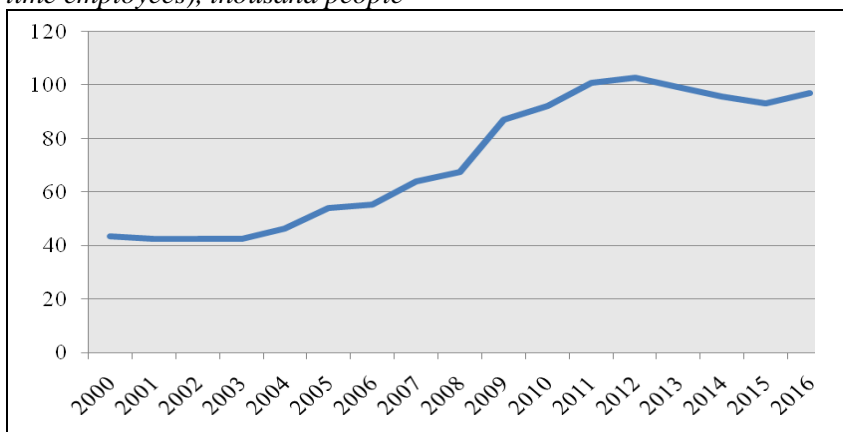
Source: *Compiled by the authors based on the official data of the Federal State Statistics Service of Russia.*

The total reduction in employees amounted to 9.5 thousand people. In 2016, there was a growth in the average number of employees. The proportion of staff in trade and public catering has decreased during the concerned period from 30.9% in 2004 to 29.4% in 2016, while that in the construction sector decreased from 33.4 to 16.9 %, respectively. Similar decline from 12.1 to 6.3% occurred in industry, while the average number of employees in other business activities has increased from 23.7 to 47.5%. Trade turnover of small enterprises is characterized by a general upward trend: since 2006 it began to increase rapidly. At the same time, it is necessary to note the sharp falls in 2010 (-48.8 bln rubles) and in 2014 (-22.4 bln rubles) (Figure 2).

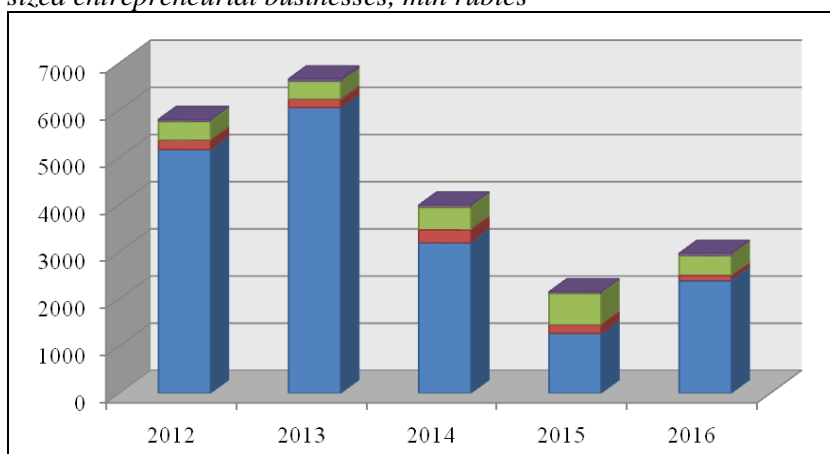**Figure 2.** *Trade turnover of small enterprises, bln rubles*
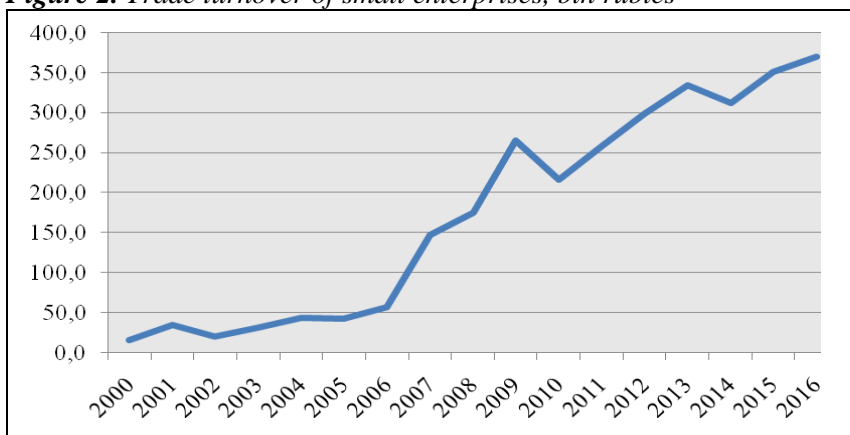
Source: *Compiled by the authors on the basis of the official data of the Federal State Statistics Service of Russia.*

According to the report of the Governor of the Khanty-Mansiysk Autonomous District – Yugra for the year of 2016, the proportion of small and medium-sized enterprises in Yugra accounts for less than 5.0% of the basic production assets. At that, small and medium-sized businesses can generate about 14.0% of the Gross Regional Product. Thus, the proportion of turnover of small and medium-sized enterprises in 2010 amounted to 15.1% of the regional product. In 2013 this proportion began to decline and stopped at 14.8% of the regional product, in 2014 it amounted to 13.5%, while in 2015 the situation has equaled out (14.2% of the regional product).

When generating the expenditure part of the budget of the autonomous district, the government of the region lays down funds under the article "national economy" in the amount of about 15% of total expenses. However, the absolute amount of these expenditures is not always predictable, because they are volatile enough from year to year (Figure 3). After a decline in absolute expenditure in 2006, these expenses increased within two years, and then in 2009 they fell below the level of 2006 (0.6 bln rubles). It is also necessary to note falling of these expenditures in 2013 (by 1.4 bln rubles) and in 2016 (the maximum reduction by 10.2 bln rubles). Despite this fact, regional authorities are actively involved in supporting small business and undertake measures to fix interest rate on microloans up to 3 mln rubles for small enterprises.

Figure 3. *The amount of funds aimed at the development of small and medium-sized entrepreneurial businesses, mln rubles*

Source: *Compiled by the authors on the basis of the official data of the Federal State Statistics Service of Russia.*

Correlation analysis of time series characterizing the development level of small business in the Khanty-Mansiysk Autonomous District – Yugra is presented in the Table 1.

Table 1. *Correlation coefficients among time series of development indicators of small business*

Name of the indicator	GRP, bln rubles	The number of enterprises, thousands of units	The number of employees, thousands of people	Turnover, bln rubles	The budget expenditure, bln rubles
GRP, bln rubles	1	-	-	-	-
The number of enterprises, thousands of units	0.91	1	-	-	-
The number of employees, thousands of people	0.82	0.92	1	-	-
Turnover, bln rubles	0.90	0.89	0.92	1	-
The budget expenditure, bln rubles	0.76	0.47	0.35	0.59	1

Source: *Compiled by the authors based on the official data of the Federal State Statistics Service of Russia.*

5. Discussion

The geographical location of the Khanty-Mansiysk Autonomous District – Yugra and the low population, certainly, limit the opportunities for entrepreneurial business development in the Yugra. Despite this fact, the regional authorities support and encourage entrepreneurial initiatives. State support measures for small business have positive impact on the business environment. In general, the number of small businesses tends to increase. At that, it should be emphasized that the period of the global financial crisis has adversely affected the number of small enterprises.

To date, the main measures aimed at supporting small business are reflected in the state program "Social and economic development, investments and innovations of Khanty-Mansiysk Autonomous District – Yugra for 2016-2020". Sources of funding for the small business development include raised funds, as well as funds of federal, regional, and local budgets. At that, raised funds (funds of banks and leasing companies aimed at the implementation of entrepreneurial projects) are the most significant among mentioned sources. Due to these funds, important achievements have been reached. Performance of the regional authorities in 2016 resulted in registration of 575 new small enterprises in the Autonomous District and the creation of 3.2 thousand new jobs. Ratio of raised funds of banks and leasing companies per budget ruble was 4 to 1.

In consequence of the correlation analysis of time series characterizing the development level of small business in the Yugra, a direct correlation among the different groups of indicators was revealed. Thus, the strongest correlation was observed between "The number of enterprises" and "The number of employees of small enterprises", as well as between "The number of employees" and "Trade turnover of small businesses". The correlation coefficient in both cases was equal to 0.92. For the indicators of "Amount of regional product" and "The number of small enterprises" the correlation coefficient was 0.91. The weakly interdependent indicators were "The number of small enterprises" and "Budget expenditures for the national economy " (correlation coefficient was equal to 0.47). The weakest was the relationship between the "The number of employees of small enterprises" and the "The budget expenditure on the national economy" (correlation coefficient was 0.35). Considering the above, the authors of the present study conclude that the budget expenditures on the national economy are focused on large and medium-sized enterprises rather than on small businesses.

6. Conclusion

The hypothesis of the authors of the present study that a strong correlation is characteristic of all socio-economic development indicators of small business in the Northern region has not been confirmed. The calculated correlation coefficients have shown the average and weak correlation among the components characterizing the status of entrepreneurship. This circumstance should be considered by the regional authorities when implementing the relevant measures. For example, increasing the expenditure of the regional budget on the national economy in order to reduce the unemployment rate in the region not always will be justified because there is aweak correlation between these indicators. According to the authors, the potential of small business development in the Northern region lies in supporting the implementation of energy efficient technologies at small enterprises, stimulating the promotion of goods and services of local producers to national and world markets, creating favorable business environment for entrepreneurship in the field of information technology, rendering consulting services, recycling of household waste, and providing other services to local population.

References:

Abramyan, G.A., 2015. Methodology for assessing the creditworthiness of economic entities classified as small and medium-sized enterprises. Issues of Economics and Management, 2, 50-56.

Akhmetshina, R.E., Guzelbaeva, T.G., Rakhmatullina, K.D. 2017. Special Economic Zone as a Local Area of Public-Private Partnership Implementation. European Research Studies Journal, 20(2A), 346-354.

Araslanov, R.K. and Bogomolova, L.L., 2016. Economic assessment of resource potential of traditional crafts in Northern regions under crisis conditions: Basis and development prospects. International Journal of Economic Research, 13, 3397-3411.

Beglova, E.I., Nasyrova, S.I. and Yangirov, A.V. 2017. Factors of Economic Behavior of Population in Regional Labor Market. European Research Studies Journal, 20(4B), 167-182.

Bogomolova, L.L., 2016. Development of government support for import substitution in small and medium-sized enterprises of Northern regions. Polish Journal of Management Studies, 2, 18-26.

Breckova, P. 2016. Family Business in the Czech Republic. European Research Studies Journal, 19(4), 3-16.

Egorova, E.N. and Felobokova, L.Yu., 2017. Kaizen model of managing small business and its current capital. A New Science: Experience, Tradition, Innovation, 4, 83-86.

Hong-Tao, Y. and Dong-Ping, L., 2011. Evaluation of the regional entrepreneurship based on PCA - a demonstration study of 31 regions in China. Proceedings of the International Conference on Management Science and Engineering, ICMSE-2011, 18th Annual Conference Proceedings, Rome, Italy.

Islamutdinov, V.F., 2016. Evolution and specificity of the economic institutions of Khanty-Mansiysk Autonomous District – Yugra. Economy of the Region, 2, 463-470.

Kitova, O.V., Savinova, V.M., Dyakonova, L.P., Bruskin, S.N., Beshmelnitskiy, A.A., Danko, T.P. and Sekerin, V.D. 2017. Information-Analytical System for Forecasting Indicators of the Social and Economic Sphere of the Russian Federation. European Research Studies Journal, 20(4A), 275-283.

Korostelyova, V.V., Razdrokov, E.N., Krasilnikov, A.V., Makarov, V.A., 2015. Estimates of tax revenues from the arctic shelf oil exploration. Journal of Advanced Research in Law and Economics, 3, 571-583.

Kubikova, N.V. and Khoroshilova, A.V. 2017. Modernization potential of region's development and mechanisms of small business management (evidence from Central Black Earth Region). Theory and Practice of Social Development, 2, 28-30.

Lapshenkova, I.R., 2016. Specifics of recruitment policy in small business. NovaInfo.Ru, 42, 122-126.

Levushkina, S.V., 2016. Partnerships of scientific organizations with small and medium-sized innovative enterprises. Innovative Science, 11, 96-100.

Mirzoyeva, S.M., 2015. Improvement of the strategic planning process in relation to small business. Economics and Entrepreneurship, 3, 918-920.

Polozkov, M. and Chvanov, R. 2015. Small and medium-sized enterprises need tax support. Public Service, 4, 52-55.

Rod', Yu.S., Khromtsova, L.S., Yesipova, S.A., Panenko, A.I. 2016. The development system of independent (commercial) sector of the cultural complex of the region (on the example of the Khanty-Mansiysk Autonomous District – Yugra). Advances in Systems Science and Applications, 1, 72-84.

Rudenkov, V., Belitsky, M., Oginskaya, A., 2016. Spin-off organizations in the university environment. Science and Innovation, 155, 48-51.

Sharokhina, S.V., 2016. Insurance in small and medium-sized entrepreneurial business. Science and World, 9, 28-29.

Shinkevich, A.I., Kudryavtseva, S.S., Razdrokov, E.N. 2016. Method for assessing of the level of national innovation systems' openness from the perspective of institutional approach. International Journal of Environmental and Science Education, 17, 10505-10515.

The Regions of Russia. Socio-economic indicators. 2017. Statistical pocketbook. Moscow, Rosstat, 1402.

Williams, C. and Dzhekova, R., 2014. Evaluating the cross-national transferability of policies: A conceptual framework. Journal of Developmental Entrepreneurship, 4, 145-161.

Williams, C. and Round, J. 2009. Explaining participation in off-the-books entrepreneurship in Ukraine: A gendered evaluation. The International Entrepreneurship and Management Journal, 4, 497-513.

Zedgenizova, I. and Ignatyeva, I. 2017. The Problems of Creation and the Prospects for Development of Regional Clusters. European Research Studies Journal, 20(4A), 578-595.