

SCTCMG 2018
**International Scientific Conference «Social and Cultural
Transformations in the Context of Modern Globalism»**

**MANAGEMENT OF TERRITORIAL ECONOMY BASED ON
STRATEGIC INDICATORS AND REGIONAL DEVELOPMENT
MODEL**

Toktamysheva Iuliia (a)*

*Corresponding author

(a) Bashkir State University, 32 Zaki Validi str., Ufa, Russian Federation,

Abstract

The paper presents the results of the development of methods used to analyse and determine the nature of the socio-economic development of the region. The author has developed the criteria and principles for selection of strategic indicators that orient government bodies towards achievement of goals specified for regional growth management. Based on this, a system of strategic indicators is formed, and a coefficient for socio-economic development of the region is proposed to characterize the state of the region's economy. The concept of "strategic indicator" is specified and the principles and criteria for selection of strategic indicators of regional development systematized and supplemented by the author are applied. The paper also presents the developed model for assessing the state of regional socio-economic development. The model is based on visualization of the interrelation of regional growth factors through the use of data on strategic indicators and the coefficient of socio-economic development. The model and the coefficient are employed to reveal the nature and trend of regional economic growth as shown by the example of the Republic of Bashkortostan, a territorial subject of the Russian Federation. The causes of recessions and booms of the economic development of this region are identified based on strategic indicators. The paper presents recommendations to plan measures of state management of the region's economy and to develop strategies and programs for socio-economic development.

© 2019 Published by Future Academy www.FutureAcademy.org.UK

Keywords: Region, socio-economic development, indicator.



1. Introduction

Economic growth and improvement of the standard of living in the region depends, in part, on the government bodies. The presence and impact of certain shortcomings of the market system, the degree of technological underdevelopment, the quality of management measures and other problems can be identified in the analysis based on the indicators of regional development.

There are many viewpoints on the priority and importance of the indicators for state management of a particular territory's economy. These indicators should be used to develop management strategies and to assess regional growth. Therefore, they are referred to as strategic indicators.

This study is relevant since it is important to conduct a comprehensive assessment of socio-economic development of the region. In other words, a combined use of strategic indicators in a unified model of regional development is a source of new practical managerial recommendations. This allows consideration of the impact of all major factors that affect effective functioning of the economy

2. Problem Statement

The analysis of the existing studies on this issue shows that the concept of "strategic indicator" and its definition are not available in the scientific literature. The proposed interpretation of this concept is as follows: a strategic indicator is the one that characterizes the state and efficiency of the economy, the standard of living in the region, and its achievement stimulates implementation of main objectives of the socio-economic development strategy.

Based on the studied practice of using economic indicators for creating and assessing regional development strategies (Abdulaeva, 2009; Bobylev, 2007; Kadakoeva, 2007; Salikhov & Gadzhikurbanova, 2008), a system of principles and criteria was formed for selection of strategic indicators of regional growth. The principles are as follows:

- 1) focus on the governing body of the region's economy, which develops and implements the development strategy, and on its needs;
- 2) consideration of the indicators to assess the quality of regional growth management, in particular, suitability for cross-regional comparison. The system should include indicators that are allowed to evaluate all the factors that have a direct effect on the socio-economic development of the region;
- 3) consideration of the existing and potential threats;
- 4) compatibility with the country's system of accounting, statistics and forecasting.

The criteria for application of the indicator in strategy development are as follows:

- specificity and sufficiency of indicators for the analysis;
- minimization of the number of indicators (5–7) through the choice of a single indicator for each analysis component (economic development of the region, welfare of the population, external economic aspect of the economy, etc.); or identification of a certain number of baseline indicators in a larger complex of indicators;
- the ability to characterize the dynamics, structure and efficiency of the economy, the level of social development;

- the possibility of its use to elaborate an indicative plan and to assess ongoing indicative planning;
- applicability of the indicator in the analysis of the macroeconomic situation, the scenario of the regional socio-economic development;
- consideration of the differences between regions in terms of the considered indicators and the dynamics of their development;
- the use of relative and structural indicators (growth rates, shares, etc.).

The problem of determining a set of indicators to accurately assess socio-economic development of the region and to develop criteria for making management decisions will be investigated further.

3. Research Questions

The use of indicators that show implementation of the regional development strategy makes it possible to consider all the main factors of economic and social development of the region and to avoid mistakes in management decisions. Among classifications of indicators of socio-economic development considered in the study (Anisimov & Sirotkina, 2008; Akhunov, 2015; Bondarenko, 2011; Klimova & Kirillova, 2009; Komkova & Pleshanov, 2012; Lebedinskaya, Timofeev, Abyzova & Berger, 2018; Matskevich, 2004 ; Martin & Rogers, 1997; Novikova & Krasnikov, 2010; Pogodin, 2005; Tantau, Maassen & Fratila, 2018; Vitezić, Srhoj & Perić, 2018), macroeconomic indicators used in the management of socio-economic development at the regional level are most common. Based on the principles and criteria, strategic indicators of the regional development should include: the growth rate of GRP, the unemployment rate, the inflation rate and the volume of net exports (including net exports in the volume of GRP).

The study of development of the regions of the Russian Federation (Gagarina, Moiseev, Ryzhakova & Ryzhakov, 2016; Yusupov, Yangirov, Akhunov & Toktamysheva, 2017) revealed the reduced effect of the factors ensuring high economic growth rates in the first decade of the 21st century. Introduction of scientific and technological advances becomes the most important factor of economic growth, which, however, requires huge financial investments. In this regard, the main criterion for further state policy aimed at development of the country and its regions should be innovative development that implies modernization and stimulation of investment and innovation to create new and efficient high-tech industries. Thus, the indicators should be supplemented by the features characterizing activities in the field of innovations and attraction of investments.

Russian regions significantly differ in terms of money spent on technological innovations and manufacture of innovative products. This can be described by the term “innovative activity”, which means the intensity of innovative activity, susceptibility to the use of new technologies, the ability to effectively employ the existing conditions, resources, fixed assets and innovations for further development, and implementation of their potential for intensive economic growth. The analysis of the investments in the economy and the dynamics of their effect on the economic development of regions is most accurately shown by an indicator referred to as “investment efficiency” (Toktamysheva, 2018). The growth rates of the human development index (HDI) are considered to analyze the standard of living, while the share of environmental protection costs in GRP are used to assess the environmental conditions.

Eight strategic indicators chosen are presented in Table 01 for the Republic of Bashkortostan, the region of the Russian Federation as an example. A multi-factor analysis based on a small number of indicators provides distinct comprehensive and relatively rapid assessment of the development of the most important areas of regional socio-economic policy in the Russian Federation

Table 01. Dynamics of indicators of socio-economic development of the Republic of Bashkortostan

Year	GRP growth rate of, %	HDI growth rate, %	Unemployment rate, %	Inflation rate, %	Net export share in GRP, %	Innovative activity, %	Investment efficiency, %	Share of costs for environmental protection in GRP, %
2000	5.5	-1.6	11.6	21.6	49.9	19.5	3.5	2.1
2003	9	1.2	8.2	11.1	34.2	24.1	2.7	2.4
2006	8.5	1.6	6.5	8.9	41.6	19.8	5.1	1.8
2009	-1	0.1	9.2	8.3	23.5	14.1	0.5	0.1
2012	4.4	1.5	6.1	6.2	34.4	28.9	3.5	1.4
2015	-1.7	0.1	6.1	10.9	34.6	24.3	-4.9	1.1

Source: calculated by the author

Thus, a set of strategic indicators is determined. Further on, the paper will consider realization of the main purpose of the study.

4. Purpose of the Study

The main purpose of the study is to develop a methodology for revealing the nature of regional development based on the model of strategic indicators.

The purpose is achieved through the performance of the following tasks:

- the content of the category “strategic indicator” is disclosed, its place in the conceptual apparatus of regional science and the priority trends for strategic indicator formation are defined;
- a critical analysis of regional development indicators is conducted, the principles and criteria for their selection for regional management are developed;
- a system of strategic indicators is formed based on the selected principles and selection criteria to reveal the causes of changes in socio-economic environment and to adjust the strategies for regional economic growth;

The paper will attempt to attain the following objectives:

- development of a model to assess the state of regional development using strategic indicators, which allows for the analysis of regional economy functioning;
- a study of regional development based on the model of strategic indicators.
- implementation of the model in regional growth management.

5. Research Methods

The proposed strategic indicators of regional development make it possible to assess the impact of various interconnected factors on the economy. These processes can be visually shown by a hexagonal model of strategic indicators (Figure 1).

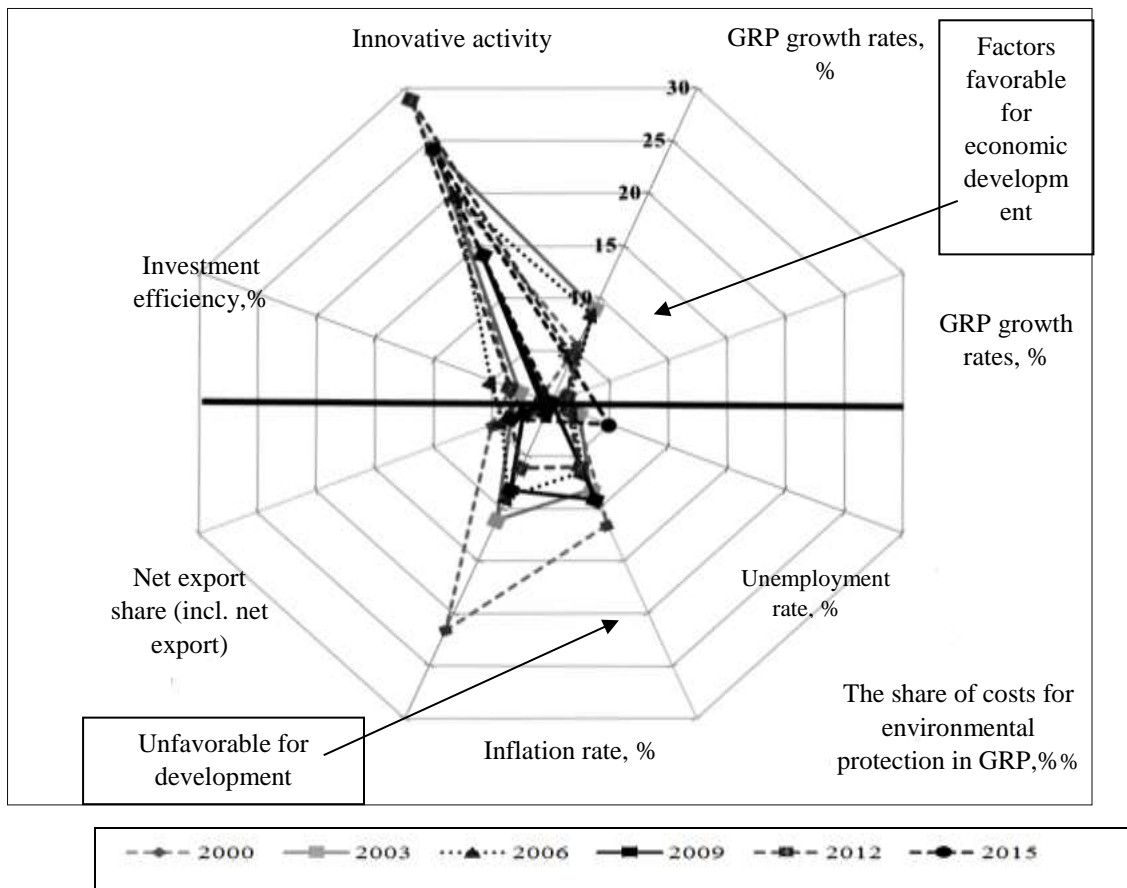


Figure 01. Dynamics of the volume of strategic indicators in the model for assessing regional development in the Republic of Bashkortostan

When developing the model and locating the indicators along the axes, the need for a bilateral analysis of the regional socio-economic development was considered through the assessment of favorable and unfavorable factors. Consequently, the elements with the greatest values of economic development in the region are located above the line separating the figure (this line is highlighted), and the indicators that need to be reduced or small indicator values confirming a high level of regional development are plotted in the lower part. According to this principle, GRP growth rate, HDI growth rate, investment efficiency and the level of innovative development are placed above the line that divides the octagon, and the inflation rate and unemployment rate, the share of environmental protection costs in GRP and the net export share in GRP are presented below the line.

“The share of costs for environmental protection in GRP” is included in the list of indicators reflecting the effect of “unfavorable” factors on economic development of the region due to the fact that these expenditures are covered by companies as compensation for damages to air and water resources caused by production activities. The environmental pollution increases government expenditures.

The share of net exports in GRP is presented in the lower part of the graph, since the growth of this indicator is “unfavorable” factor for economic development, primarily due to the raw material component. These growing export earnings, which increase the GRP volume, contribute to the extensive economic development of the region. The study revealed that more than 80% of exported products of the Republic of Bashkortostan include the fuel and energy complex products, primarily crude oil. On the contrary, final products and services accounted for the major share of export (not mineral resources) indicate a high level of regional economic growth and its intensive growth. For a visual analysis, the regional development assessment model shows a 10-fold decrease in the values of the share of net export in GRP (in ppm, not in percent) due to great volumes.

According to data on strategic indicators and the developed model, the economy of the Republic of Bashkortostan exhibited both growth and recession during the period under analysis. The octagon built in the model according to the data of 2000 shows that at the beginning of the period the region developed with fairly high growth rates of GRP, the level of innovative development was high, and export exceeded import. At the same time, the unemployment and inflation rates exhibited maximum values for the period under review. Then there was an annual, except for 2009, increase in the values of indicators “favorable” for economic development of the region and reduction in the values of “unfavorable” indicators. Similar dynamics of gradually reduced values can be observed for both the HDI growth rate and the share of environmental protection expenditures in GRP. The years 2003 and 2006 were the most favorable for the Republic of Bashkortostan in terms of economic development, when GRP growth rates were high but the rates of inflation and unemployment were sufficiently low. The efficiency of investments and the level of innovative development were high and less variable in volumes during these years, except for 2009. In 2009, the economy of the region, as well as that of the entire country, showed the lowest values of the main macroeconomic indicators. The reduced GRP volume (–1 in 2009 and –1.7 in 2015) can be observed in the constructed figure, which did not form an octagon for 2009 and 2015. A significant reduction in the volume of investments in the economy of the republic affected the volume of GRP and the level of innovative development.

Therefore, according to the developed model, an analysis of the state of the economy performed on the basis of strategic indicators of the regional development can provide an objective and comprehensive assessment of the regional policy. However, both qualitative and quantitative indicators are essential for a more accurate analysis of the socio-economic development of the region, which helps determine the stage when the economy was most efficient and the year when the combination of growth rates or volumes of various indicators was most favorable for economic growth

The developed model of the regional development assessment makes it possible to mathematically determine the conditions for development and the area of economic growth. A horizontal line divides the model into two groups of “favorable” and “unfavorable” strategic indicators.

6. Findings

The calculated values of the volumes of the upper and lower parts of polygons in the regional development assessment model are presented in Table 02. The determination of the numerical difference between the upper and lower polygons is part of the economic analysis performed on the basis of the

regional development assessment model. The resulting value is denoted as the coefficient of socio-economic development. If the coefficient is greater than 5 ($C_{sed} \geq 5$), then the regional economy develops intensively; if the coefficient is 3 to 4.99 ($3 \leq C_{sed} < 4.99$), the economy revives (after the crisis stage) or slows down (after the growth stage); if the coefficient is 1 to 2.99 ($1 \leq C_{sed} < 2.99$), the economic stagnation occurs. A value below 1 ($C_{sed} < 1$) indicates a crisis in the economy.

Table 02. Ratio of the upper and lower polygon parts in the model of strategic indicators for the economy of the Republic of Bashkortostan

Year	The upper polygon part	The lower polygon part	Coefficient of socio-economic development	Nature of economic development
2000	63.1	145.8	0.4	Crisis
2003	108.0	60.1	1.8	Stagnation
2006	114.6	50.5	2.3	Stagnation
2009	-2.4	34.5	-0.1	Crisis
2012	92.1	31.2	3	Revival
2015	-43.2	30.3	-1.4	Crisis

According to the data of 2009, in 2015 the area of the lower polygon was greater than that of the upper one (Figure 2). In the period of economic crisis, the effect of favorable factors on the regional development is observed to weaken, whereas the effect of unfavorable factors is significant.

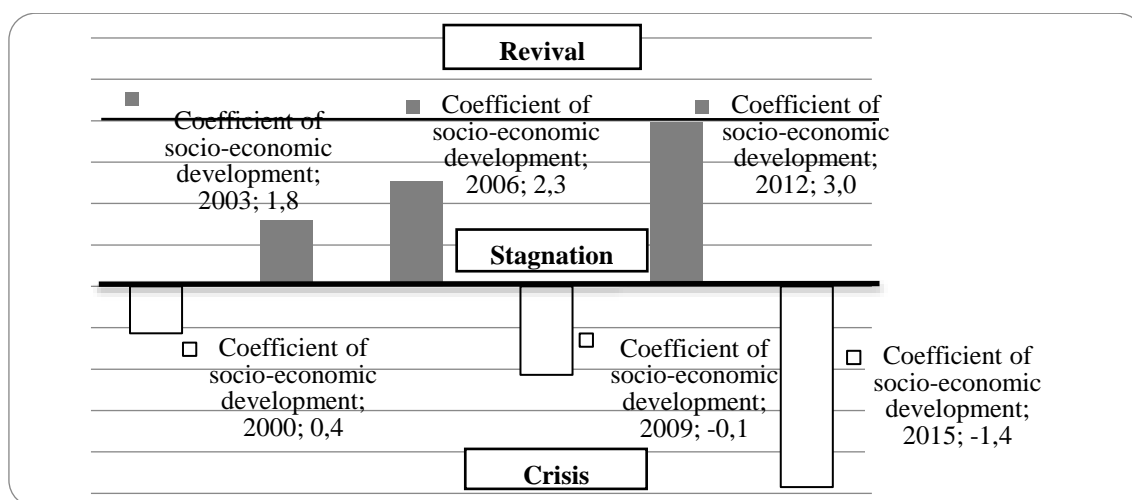


Figure 02. Parameters of economic development of the Republic of Bashkortostan

The crisis years of the 1990s were hard for the Republic of Bashkortostan and for Russia, and aftereffects hindered the development of the region in the first few years of this period (for example, in 2000–2001, HDI growth rate was negative). The global financial and economic crisis of 2009 also affected the coefficient of socio-economic development (< 1) and strategic indicators. Negative growth rates of GRP (-1%), high unemployment (9.2%) and inflation (8.3%) rates, and the reduced share of net exports in GRP (to 23.7%) were accompanied by the capital outflow (low investment efficiency (0.5%)) and decreased level of innovative development (14.1%).

Economic revival (in 2012), as opposed to crisis, is characterized by a significant growth rate of GRP (4.6%), low unemployment (6.1%) and moderate inflation (6.1%) rates, satisfactory investment efficiency (3.5%), growth in net export of goods and services (its share in GRP – 34.4%) and in the level of innovative development (28.9%). Stagnation is a process of very slow economic development, accompanied by insignificant growth rates of GDP volumes, high inflation and low efficiency of investments. Bashkortostan faced these problems in 2003 and 2006, when GRP growth rates were on average 8.75%, unemployment rate – 7%, inflation – 10%, share of net export in GRP – 35.9%, and investment efficiency – 4.2%. Only the level of innovative development was close to the average statistical values for the republic and equaled 21.6%.

In 2000–2013, only two strategic indicators showed a stable nature and pace of changes. The share of environmental protection expenditures in GRP gradually decreased, and the growth rates of HDI (except for 2000 and 2001) were always positive. This indicates the improvement of life quality and social conditions.

Thus, the model of strategic indicators enables the assessment of the effect of various favorable and unfavorable factors on regional development. The resulting indicator is the coefficient of socio-economic development. Comparison of the level of economic development in different regions of the Russian Federation can be a source of information for the multiple-factor analysis and assessment of the past and future state of the economy.

Strategic trends in the management of socio-economic development of the region, also used in indicative planning, should be based on and should not contradict the concepts, programs and other documents approved by the Government of the Russian Federation.

The proposed methodology for analyzing and assessing data on strategic indicators can be used to predict and plan further socio-economic development of the region in accordance with established goals (in this study, the strategy of innovative development was considered during active economic modernization), to monitor the achieved values of indicators, and to analyze and assess the current level of economic development in the region.

7. Conclusion

Strategic indicators are indicators that allow assessment of the state and efficiency of the economy, and the quality of life in the region. The achievement of the desired values of these indicators contributes to the implementation of the main objectives of the strategy of socio-economic development. The existing methods of selecting the indicators for socio-economic development of the region and the indicators themselves did not take into account the market system drawbacks, and the degree of underdevelopment of the technological level of production and in the quality of measures for the region development. The system of principles and criteria for the selection of strategic indicators proposed by the author, and the selected indicators enable the assessment of these processes.

Strategic indicators of the regional development are GRP growth rates, unemployment and inflation rates, the ratio between net export volumes and GRP, innovative activity, and investment efficiency. The integrated approach and systematic analysis of the dynamics of the indicator values to assess socio-

economic development of the regions revealed the main problems and challenges that hinder the implementation of strategic objectives.

The regional development assessment model has been developed to mathematically determine the effect of “favorable” and “unfavorable” growth factors on the economy, to quantitatively assess this effect, and to identify the nature of the regional economic growth (crisis, stagnation, recession or revival).

Thus, the study results enable determination of a downward or upward trend of economic development in the regions of the Russian Federation based on a number of indicators and a variety of factors. The proposed strategic indicators should be used to assess the effectiveness of the modernization strategy implemented in the regional economy. The regional development assessment model based on the indicators provides visual representation of the relationship and effect of basic economic indicators of the region on each other, and shows the nature of the regional development. The threshold values and parameters of the considered indicators can be used as strategic criteria when creating and implementing a strategy for socio-economic development of the Russian Federation and its regions

References

- Abdulaeva, Z.Z. (2009). The value of the social aspect in the indicators of economic security. *National Interests: Priorities and Security*, 17 (50), 57–60.
- Anisimov, Yu.P., Sirotkina, N.V. (2008) *Innovative approaches to management of industrial facilities based on a system of indicators*. Voronezh, Scientific book.
- Akhunov, R.R. (2015). *Management of competitiveness in the system of the regional reproductive potential*. Ufa, RIC BashGU.
- Bobylev, S.N. (2007). *Sustainable development indicators: regional dimension*. Moscow, Center for Environmental Policy of Russia.
- Bondarenko, G.A. (2011). Relationship of indicators of regional socio-economic development and employment: a statistical study. *Accounting and statistics*, 2 (22), 99–105.
- Gagarina, G.Y., Moiseev, N.A., Ryzhakova, A.V., Ryzhakov, G.V. (2016). Estimation and forecast of regional competitiveness level. *Ekonomika regiona [Economy of Region]*. 12 (4), 1040-1049.
- Kadakoeva, G.V. (2007). Organizational and economic assessment mechanism of the regional program using indicators of socio-economic development. *News of the Herzen State Pedagogical University of Russia*, 17 (43-1), 135–137.
- Klimova, N.I., Kirillova, S.A. (2009). Self-identification of territories in the context of diagnostics of economic are. *Bulletin of Ufa State Aviation Technical University*, 12 (3), 98–105.
- Komkova, A.V., Pleshanov, G.I. (2012). Trends in the formation of the Russian system of basic socio-economic indicators. *Bulletin of Moscow State Open University. Moscow. Series: Economics and Right*, 2, 19–23.
- Lebedinskaya, O.G., Timofeev, A.G., Abyzova, E.V., Berger, E.G. (2018). GDP as the most important indicator of the global tendencies of economic development in view of production account. *Advances in Intelligent Systems and Computing*. 726, 97–107.
- Matskevich, T.N. (2004). *Problems of regional socio-economic development*. Stavropol, Argus.
- Martin, P., Rogers, C.A. (1997). Stabilization policy, learning-by-doing, and economic growth. *Oxford Economic Papers*, 49 (2), 152–166.
- Novikova, I.V., Krasnikov, N.I. (2010). Indicators of regional economic security. *Bulletin of Tomsk State University*, 330, 132–138.
- Pogodin, T.V. (2005). Analysis and integral assessment of socio-economic development of the Volga Federal District. *Regional economics: theory and practice*, 12, 7–13.
- Salikhov, Sh.M., Gadzhikurbanova, E.O. (2008). Indicators of socio-economic development of economic systems: regional aspect. *Bulletin of Izhevsk State University*, 4, 93–96.

- Tantau, A.D., Maassen, M.A., Fratila, L. (2018). Models for analyzing the dependencies between indicators for a circular economy in the European Union. *Sustainability (Switzerland)*, 10 (7), 1–13.
- Toktamysheva, Y.S. (2018), Methodology for determining the nature of regional development based on the model of strategic indicators. *Bulletin of Tomsk State University. Economics*, 41, 237–254.
- Vitezić, V., Srhoj, S., Perić, M. (2018). Investigating industry dynamics in a recessionary transition economy. *South east European journal of economics and business*, 13 (1), 43–67.
- Yusupov, K. N., Yangirov, A.V., Akhunov, R. R., Toktamysheva, Y.S. (2017). Methodological approaches to study of region's reproductive potential. *International Conference on Trends of Technologies and Innovations in Economic and Social Studies (TTIESS)*, 38. (pp. 685–692) Tomsk, Tomsk Polytechnic Univ.