

# Innovative Potential of the Metropolis: Evaluation of Candidate Cities for World Expo 2025

Galina Bannykh  
*Institute of economics and management*  
*Ural Federal University named after*  
*the first President of Russia B. N.*  
*Yeltsin*  
*Department of applied sociology*  
*Ural State University of economics*  
 Ekaterinburg, Russia  
 ORCID: 0000-0002-8175-591X

Svetlana Kostina  
*Institute of economics and management*  
*Ural Federal University named after*  
*the first President of Russia B. N.*  
*Yeltsin*  
 Ekaterinburg, Russia  
 kostinasn@mail.ru

Vasily Zapary  
*Institute of economics and management*  
*Ural Federal University named after*  
*the first President of Russia B. N.*  
*Yeltsin*  
 Ekaterinburg, Russia  
 v.v.zapary@urfu.ru

**Abstract**—In the article, the authors consider the existing methods of assessing the innovative potential of the territories and offer their own to assess the innovative potential of candidate cities for the World Expo2025: Osaka, Yekaterinburg, Baku. As a result of analysis and evaluation, the innovative potential of these megacities was measured, which allowed us to identify the main differences between the candidate cities in the field of technical achievements and innovations. For the theoretical part, the concepts of territorial development, the concept of innovation management and the theory of globalization were used. Methods of research in the practical part were the analysis of statistical data, the calculation of the index of innovative potential for the city. The study resulted in an integrated assessment of the innovative potential of a developing million-plus city, which was tested on candidate cities for the World Expo2025. This assessment allows us to consider the opportunities, growth points and problems of innovative development of the largest cities in the context of globalization. The human, scientific, financial and economic potential of cities can be attributed to the most significant differences, while the information and communication component in the innovative potential of cities is assessed as equivalent. To increase the innovative potential of Yekaterinburg, it is necessary to invest both in the state and in business in science, sociocultural factors affecting the human potential, and increase the transparency of public-private decisions. An integrated assessment of the innovation potential of metropolises was proposed on the example of those cities that claimed to hold a world exhibition, which is a symbol of the era of new industrialization and technical achievements.

**Keywords**—*innovative potential, integrated assessment, assessment of innovative potential, megalopolis, globalization, digital economy.*

## I. INTRODUCTION

In recent decades, thanks to globalization, the development of social and information technologies, and a number of other reasons, cities, especially large and very large, have developed new opportunities for economic and cultural development. The innovative potential enables cities to receive a powerful influx of investments and tourists, to increase the activity of businesses and local communities, new political weight and cultural significance. Especially significant and rapid changes are taking place in megalopolises where the majority of people are concentrated, new socio-economic phenomena are forming, etc. Consequently, the topic of future megacities acquires a

special significance in the context of their innovative potential.

Modern science has accumulated a sufficient number of theoretical and practical concepts and reflections of innovative potential. In the first place, the potential was considered in relation to enterprises, the business sphere, and later it began to be applied to territories, including urban areas.

Despite the availability of modern analytical tools, including complex mathematical models and constantly improving, the analysis covers mostly long-term processes that lie “on the surface” and are massive [1].

Therefore, the purpose of this article is an attempt to present a comprehensive assessment of the innovative potential of megacities, former candidates for the Expo2025. This assessment will determine the processes taking place in the urban space of megacities and leading to the growth of innovation.

## II. LITERATURE REVIEW

Different types of territories due to established historical-geographical, ethnocultural, socio-economic features of their development have different susceptibility to innovations, have competitive advantages, investment opportunities, and as a result, significantly different development goals and strategies, different types of economic policies, the choice of priorities. Therefore, it is so important to determine for each territory its own system for assessing its innovative potential.

Considerable attention is paid to the issues of innovation potential in the scientific literature, however, this information does not allow its unambiguous interpretation as an economic category, which naturally makes it difficult to develop practical recommendations for its assessment, development and effective use.

The concept of “innovative potential” was first proposed by the English economist K. Freeman in the mid-1970s. In his works, he noted that innovation is a system of measures for the development, development, operation, and exhaustion of production, economic and socio-organizational potential that underlies the innovations [2].

One of the classics of management theory, P. Drucker, gave the concept of “innovative potential” a practical

meaning - “innovations begin with an analysis of existing potential in order to use it effectively” [3].

The main components of the innovation potential are scientific and technical, resource, infrastructure, investment, intellectual, consumer, entrepreneurial and other types of potential. It is the balanced management of these types of potential that ensures the innovative potential of the metropolis. Thus, the innovative potential of a metropolis can be defined as the use of the available resources of the territory (geographical, climatic, demographic, industrial, labor, scientific and educational, etc.) in the interests of the systematic development of the population and the territory itself.

It is important to carry out a study of the innovation potential and its assessment as an effective result of implementing the strategy of balanced management of the socio-economic system of the appropriate level.

In the modern period, there is a need to study the innovative potential of the city as a whole self-governing territory. For example, in the United States, it was recognized that it is municipalities that are responsible for innovative behavior, it is they who can produce and disseminate innovations at the local level [4]. In 2009, the “turning point” came: the urban population of the planet exceeded the rural population, meanwhile, twenty years ago it was less than a third of the world population. Currently, the number of million-plus cities in the world exceeds 300, and their growth rates are only increasing.

A number of researchers have focused on the study of smart cities and their innovative potential [5], including from Southeast Asia and China [6]. Sotiris Zygariis to evaluate the development of smart cities offers a special model - the Smart City Reference Model. This model should ensure the formation of an urban innovation ecosystem, it is possible for application in each particular case of a smart city based on such aspects as environmental friendliness, interconnectivity, tools mentality, openness, smart manufacturability and integrative [7].

Some researchers attach great importance not to smart technologies and infrastructure, but to the creative industry in assessing and developing the innovative potential of a city [8].

Professor A.I. Tatarkin [9] proposes to take into account the following aspects of the level of innovative potential of the territory: the number of subjects of innovative activity (innovation-oriented population), the willingness of subjects to develop and introduce innovations, the willingness of public authorities in the territory to join the innovation agenda at the national level, the availability and environmental readiness for innovation.

At present, research teams have developed a system of indicators for assessing the innovative potential of cities, which are consistent primarily with the way the authors understand the innovative potential of the city. For example, one of the first assessment systems based on indicators of technology, tolerance, and talent proposed by Florida [10] can be distinguished. C. Landry believes that it is necessary to assess the innovative potential of a city based on indicators of culture, society, the economy and the environment [11].

The main task of assessing the innovation potential of cities is to develop an effective and rational system of

assessment indices so that later there is an opportunity to more accurately measure changes in the potential of the city in the innovation sphere. M. Liu; G. Li offer to explore the innovative potential of the city from the point of view of a systematic approach as an integral system with input and output, and the main elements: innovation contribution, innovation output, innovation subject and innovation environment support (innovation input, innovation output, innovation subject and innovation environment support) [12].

O. Kolchina proposed to use the methodology for assessing the investment climate of the city [13]. To determine the level (index) of the investment climate in the territory, the most important factors are highlighted at the time of this indicator. A high index of the investment climate is obtained by a territory that has a stable political, legislative, environmental situation, a high level of economic, infrastructural, demographic, natural and climatic indicators combined with resource security.

Calvert 22 and PwC Russia have developed the Creative Capital Index for researching creative economies in urban settlements of the Russian Federation. The Index was based on the concept of three “T” (talent, technology, tolerance) of R. Florida, the theory of creative industries and innovative economies. The structure of the Index has five groups of indicators: scientific, educational, urban and cultural infrastructure and social interaction (principles of openness and tolerance), socio-demographic indicators; opportunities for commercializing the talents of the creative community; indicators of the degree of local government interest, its level of openness; perception of the city in the external environment (expert polls, media analyses) [14].

### III. RESEARCH METHODOLOGY

Despite the fact that there are many Russian and foreign methods assessing the level of innovative development of territories at the moment, we can say that there is no unified approach to the calculation of the integral innovation index of the city. The creation of such an index would make it possible to draw conclusions as to whether the necessary conditions exist on the ground for the formation of an innovation-type economy.

The innovative potential of a territory can be assessed at several levels: the state as a whole, the region, or an individual settlement. Techniques that allow a comparison of the innovative development of different territories of the same level on the basis of building complex indices, as well as compiling their ratings, have become widespread. Consider examples of such techniques.

At the international level, several methodologies are used to evaluate national states. For example, the European Innovation Scoreboard Index (the so-called European Innovation Scoreboard) is a special tool of the European Commission. It was developed as part of the Lisbon strategy and provides a comparative assessment of the innovation activities of EU member states [15]. Another example is the Global Innovation Index, developed by the European Institute of Business Management together with Cornell University in 2007. The Global Innovation Index is based on a comparison of data from previous releases and newly available data obtained from innovation measurement research [16]. GII is based on two main groups of indices: the innovation cost index (Innovation Input) and the index of return on innovation (Innovation Output), each built around

sections (pillar). The overall classification of the sections considers the average values of the cost index and the innovation return index.

Within national states, innovation potential assessment methodologies are used to compare different regions. For example, in Russia, the Institute for Statistical Studies and Economics of Knowledge (ISSEL) of the National Research University Higher School of Economics (HSE) since 2012 regularly publishes the Innovative Development Rating of the Subjects of the Russian Federation. The rating scores are based on a system of regional innovation development indicators, including those used in a similar instrument of the European Commission (Regional Innovation Scoreboard). The methodology includes a multi-level hierarchical structure of indicators, summarized in four thematic blocks, within which there are several specialized headings.

In the practical part, statistical data, international indices and ratings based on groups of socio-economic indicators for 2017-2018 were used to assess the innovative potential of megacities.

#### IV. RESULTS

In 1928, the Convention on International Exhibitions was signed. Today, their activities are regulated by the International Bureau of Exhibitions (The Bureau International des Expositions (BIE)). According to this convention, there are four official EXPO types: World (World) and International (International), as well as garden exhibitions (Horticultural Expos) and Milan Triennale (The Triennale di Milano). The World's Fair, or Expo (Expo) - an international exhibition that is a symbol of industrialization and an open platform for the demonstration of technical and technological achievements. World exhibitions have a significant impact on the development of the territory, including innovation, so it is important to evaluate the innovative capacities of cities hosting such an event. For example, the study confirms that the Great Cultural Projects have a significant and lasting impact on the functional and spatial structure of the city, in which they take place. [17]. For their multi-dimensional development of the city.

Among the three megacities that have applied for EXPO 2025, Osaka is the largest in terms of population, Baku is second, and the smallest population is in Yekaterinburg (see Table).

Osaka is the second largest city of Japan, together with Kyoto is a large industrial and educational territory. Osaka has a world-class transportation infrastructure: the city is served by three major airports, numerous large seaports and is connected to the rest of Japan through the superhighways and high-speed trains of Shinkansen. In 1970, the World Fair was

held in Osaka. Today, the city organizes more than 30 international events annually, more than 100 international.

Baku is the capital of Azerbaijan, the largest port on the Caspian Sea and the most important scientific, technical, industrial and economic center in the South Caucasus. Baku has experience in holding such large-scale international events as the Formula 1 Grand Prix of Azerbaijan, the Islamic Games, the European Games, Eurovision, etc. Today, Baku hosts up to 15 world events a year and more than 30 international ones.

Yekaterinburg also hosted international events - the first BRIC summit, the 2018 World Cup, and international exhibitions. Ekaterinburg is the world's most compact one million-strong and powerful transport hub on the border of Europe and Asia, directly connected with 112 cities of the world. Ekaterinburg is an important industrial center of the Russian Federation. In the national rating of Russian cities, Ekaterinburg is in 4th place in the Creative Capital Index with the following estimates: 55.2 points out of 100 possible; people - 48.0 points out of 100 possible; business - 50.4 points out of 100 possible; power - 45.7 points out of 100 possible; brands - 63.5 points out of 100 possible. The position of the creative class was estimated at 61.18 points out of 100 possible [18].

Consider the position of these megacities in the Innovation Cities Index, which calculates 2thinknow for 500 cities of the world based on 162 standard indicators for such groups as technology, people and work, government and infrastructure, economics, etc. Yekaterinburg's rating is constantly falling: in 2013 it occupied 209 place, in 2014 - 213 place, in 2015 - 220th place, in 2016-2017 - 358 place, and in 2018 - 402 place. Baku's ranking position is unstable: in 2013 - 395 place, in 2014 - 345 place, in 2015 - 364, in 2017 - 426 place, in 2018 - 410 place. Osaka was not present at all in the ratings for 2013-2015, and in 2017 it took the 50th place, in 2018 - the 45th place (Innovation Cities™ Index 2018).

We propose, as evaluation criteria, to take into account not only standard indicators on the state of personnel, labor resources, economic relations, the scientific sphere, etc. but also to use ready-made tools - ratings characterizing individual achievements of the territory (city, region, country). Below is a table of summary indicators, each indicator can be calculated on the basis of a 5 point system, where 0 is the absence of a result, and 5 is the most significant value. The calculation of the total points can be carried out as an average statistical value, and it is possible to highlight the criteria for their significance to the general index. We chose the first option since the number of criteria can be significantly increased.

TABLE I. CRITERIA FOR ASSESSING THE POTENTIAL OF CANDIDATE CITIES FOR EXPO2025 WITH AN INDICATION OF THE FINAL PLACE AND SCORE

Criteria	Osaka	Baku	Yekaterinburg	Rang position	Ball
The first programs of economic globalization and innovation	1970-s	1990-s	2010-s	1/2/3	5/4/2
Population	3689000	2 262 600	1 501,7	1/2/3	5/4/2
Number of universities	11 universities	35 universities	39 universities	3/2/1	2/5/5
Number of students	9,999 students	112129 students	120000 students	3/2/1	2/5/5
Number of SMEs	208835 organisations	70222 organisations	119,500 organisations	1/3/2	5/3/4
Amount of workers	1120195 people	623000 people	428,800 people	1/2/3	5/4/3
GPD Per capita/ state, \$ <sup>a</sup>	42,066.6 \$	17,449.9 \$	25,763.3 \$	1/3/2	5/3/4
Consumer price index, 2017, in% by 2016	100 %	114 %	103 %	1/3/2	5/2/4
Average salary \$ <sup>b</sup>	2925,77 \$	328.19 \$	654,85 \$	1/3/2	5/1/2

Criteria	Osaka	Baku	Yekaterinburg	Rang position	Ball
WorldExpo	1 exhibition	0	0	1/3/3	5/0/0
International events	More then 30 per year	More then 15 per year	More then 10 per year	1/2/3	5/4/3
Foreign tourist flow per year	11,11 Million people	2 691 998 people	200 000 people	1/2/3	5/4/1
Innovative development programs	There are up to 4	There are up to 2	There is 1	1/2/3	5/4/1
Global Liveability Ranking <sup>c</sup>	3d place	0	0	1/3/3	5/0/0
QS global/regional <sup>d</sup>	1/8 universities	1/5 universities	½ universities	1/2/3	5/4/3
The World University Rankings. 2017-2018e	2 Japan universities	0	1 Russian university	1/3/2	5/2/4
Quality of life	10th place worldwide 2010 -	2010 - 194th place Since 2010 did not make the world ranking	47 in Russia In the world ranking did not get	1/2/3	5/4/3
The most suitable city of the world	5 place	0	0	1/0/0	5/0/0
The Global Competitiveness Report 2018 <sup>f</sup>	5 place	69 place	43 place	1/3/2	5/2/3
The Global Innovation Index 2017 <sup>g</sup>	14 place	82 place	45 place	1/3/2	5/1/3
ICT Development Index <sup>h</sup>	10 place	65 place	45 place	1/3/2	5/2/3
Innovation Cities Index <sup>i</sup>	45 place	410 place	402 place	1/3/2	5/2/2
Total / index	4,7	2,7	2,6	1/2/3	104/60/57

<sup>a</sup> GDP per capita, ppt (current international \$) World bank, International comparison program database [https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD?locations=GE-AM-AZ-RU&name\\_desc=false](https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD?locations=GE-AM-AZ-RU&name_desc=false)

<sup>b</sup> Calculated at the rate on 20.09.2019

<sup>c</sup> The Global Liveability Index 2018. URL: [www.eiu.com](http://www.eiu.com)

<sup>d</sup> University rankings URL: <https://www.topuniversities.com/university-rankings>

<sup>e</sup> Ranking of the best universities in the world according to Times Higher Education. Humanitarian Encyclopedia: // Center for Humanitarian Technologies, 2006–2019 URL: <https://gtmarket.ru/ratings/the-world-university-rankings/info>

<sup>f</sup> Global Competitiveness Index. Humanitarian encyclopedia: Research // Center for Humanitarian Technologies, 2006–2019 (last revised: 04/23/2019).URL: <https://gtmarket.ru/ratings/global-competitiveness-index/info>

<sup>g</sup> Global Innovation Index. Humanitarian encyclopedia: Research. Center for Humanitarian Technologies, 2006–2019 .URL: <https://gtmarket.ru/ratings/global-innovation-index/info>

<sup>h</sup> Rating of the countries of the world in terms of the development of information and communication technologies. The Humanitarian Encyclopedia. Center for Humanitarian Technologies, 2006–2019 URL: <https://gtmarket.ru/ratings/ict-development-index/ict-development-index-info>

<sup>i</sup> Innovation Cities™ Index 2018 : Global(last revised: 04/23/2019).URL: <https://www.innovation-cities.com/innovation-cities-index-2018-global/13935/>

As can be seen in the above Table, Osaka among all the candidates presented has the highest potential for innovation - the number of enterprises and entrepreneurs, the performance of the insignificant number of universities for such a city and the number of students, comfort and living and working conditions, stable prices and low level of corruption and many other indicators. Baku and Yekaterinburg differ slightly in their final results: both of them are leaders in their region, consistently showing positive dynamics of changes in economic indicators and readiness for innovative development. However, in general, the socio-economic situation in the region has a significant impact on their innovative potential. That is why it is important when taking into account the indicators related to the territory of the region in which the city is located.

## V. DISCUSSION AND PRACTICAL RELEVANCE

Assessing the potential of a megalopolis is important in developing innovative policies and building a megalopolis management system and developing a development strategy with due account for the efficient use of innovative resources. It is advisable to carry out an assessment of the innovative potential in a comprehensive manner, using an integral indicator. The proposed assessment framework includes the following steps: 1) selection of assessment goals and objectives; 2) analysis of external and internal factors; 3) selection and calculation of evaluation criteria and indicators; 4) the calculation of the integral indicator; 5) analysis of the obtained values of the integral indicator, as well as the formulation of conclusions. The very first stage is crucial in which it is important to determine the need for such an assessment - to develop strategic documents, to prepare an event, to report at the regional or country level, etc.

We propose to take into account not only standard indicators on the state of personnel, labor resources, economic relations, the scientific sphere, etc. but also to use ready-made tools - ratings characterizing individual achievements of the territory (city, region, country). Each indicator can be calculated on the basis of a 5 point system where 0 is the absence of a result, and 5 is the most significant value, or it can initially be assigned its own weight. The calculation of the total points can be carried out as an average statistical value, and it is possible to highlight the criteria for their significance to the general index. For the final assessment of innovative potential, it is important to take into account the indicators of innovative development of the territory within which the megalopolis operates - this is the region, and in some cases the country. It is also important in a potential assessment to take into account the opinions and needs of the inhabitants of a given territory - to what extent they are ready for innovative changes, how this will affect their livelihoods and confidence in the future.

The readiness of the territory of the megalopolis and its management system for the implementation of innovations must be considered comprehensively, comprehensively and in various aspects. It should be borne in mind that “the main problem in innovation ... is the increased complexity of organizational processes and the significantly increasing role of management” [19].

Innovation activity is a tool to use the innovation potential and improve the efficiency of the system. The main parameters for performance evaluation should be:

- Increasing the competitiveness of the territory.

- The balance between stability (the management of traditional technology) and the cost of resources for the implementation of innovations.
- Development of opportunities for the perception of the system of changes in combination with the existing system management process.
- Organization of interaction of all elements of the socio-economic system in the development of measures for the implementation of innovations.

Summarizing the above, it should be noted that the innovative potential of the socio-economic system is the primary basis for the implementation of innovation activities.

## VI. CONCLUSIONS

The innovative potential of a metropolis is defined by the authors as the use of the available resources of the territory (geographical, climatic, demographic, industrial, labor, scientific and educational, etc.) in the interests of the systematic development of the population and the territory itself. To assess the innovative potential of the candidate cities for the World Expo 2025 exhibition (Osaka, Baku and Yekaterinburg), the authors used their own technique. An integrated assessment of the innovation potential of metropolises was proposed on the example of those cities that claimed to hold a world exhibition, which is a symbol of the era of new industrialization and technical achievements.

As evaluation criteria, not only standard indicators on the state of personnel, labor resources, economic relations, the scientific sphere, etc. were taken into account, but also ready-made tools were used - ratings characterizing individual achievements of the territory (city, region, country), which made it possible to assess not only the availability infrastructure and resources, but also the willingness and ability of the population, business and public authorities to use them for the development of the territory of the metropolis.

Investments of business and the state in science, the level of corruption and sociocultural factors that influence human potential are important.

In general, according to the assessment, Osaka has a high innovative potential, and Baku and Yekaterinburg have low innovative potential. Further studies will identify the main problems in the innovative development of these megacities, as well as continue to improve the potential assessment itself.

For the final assessment of innovative potential, it is important to take into account the indicators of innovative development of the territory within which the megalopolis operates - this is the region, and in some cases the country. It is also advisable to include the opinions and needs of the residents of a given territory in the assessment methodology

- how prepared they are for innovative changes, how this will affect their life and confidence in the future.

## REFERENCES

- [1] O. Vendina, "Invisible shifts in the development of cities," *Demoscope Weekly*, Vol. 407-408, pp. 12-23, 2010.
- [2] Z.Y. Zengjuan, "Study on the Principle of Urban Technological Innovation," *Scient. Man. Res.*, Vol. 2, pp. 4-7, 2002.
- [3] P. Drucker, *Innovations in business*. Moscow: Alpina Business Books, 2007. (in russ.)
- [4] D. Ihrke, R. Proctor, and J. Gabris, "Understanding Innovation in Municipal Government: City Council Member Perspectives," *Journal of Urban Affairs*, Vol. 25, No. 1, pp.79-90. 2003. <https://doi.org/10.1111/1467-9906.t01-1-00006>
- [5] A. Caragliu, C.D. Bo, and P. Nijkamp, "Smart Cities in Europe," *Journal of Urban Technology*, Vol. 18, No. 2, pp. 65-82, 2011.
- [6] G. Qin, "Research on the Evaluation of Comprehensively Innovative Capacity in the Industrial Transfer Demonstration Area of the Cities along the Yangtze River Based on the Series Catastrophe Theory," *Science and Technology Management Research*, Vol. 16, pp. 83-93, 2015.
- [7] S. Zygiaris, "Smart City Reference Model: Assisting Planners to Conceptualize the Building of Smart City Innovation Ecosystems," *Journal of the Knowledge Economy*, Vol.4, No. 2, pp. 217-231, 2012. <https://doi.org/10.1007/s13132-012-0089-4>
- [8] R. Daniel, K. Fleischmann and R. Welters, "Professional development in the creative industries: Methods and insights from regional practitioners," *Australian Journal of Career Development*, Vol. 26(3), pp. 113-123, 2017. <https://doi.org/10.1177/1038416217720780>
- [9] A.I. Tatarin and K.A. Novikova, "Innovative potential of the territory in the behavioral assessments of the population," *Economy of region*, Vol. 3, pp. 279-294, 2015.
- [10] R. Florida, *The rise of the creative class revisited (10th Anniv. Ed.)*. New York: Basic Books, 2012.
- [11] C. Landry, "The Creativity City Index," *City, Culture and Society*, Vol. 2(3), pp. 173-176, 2011.
- [12] M. Liu and G. Li, "Research on the Evaluation Index System of Urban Innovation Capacity," *IEEE*, September 2017 [9th International Conference on Intelligent Human-Machine Systems and Cybernetics (IHMSC), August 2017] <http://doi.org/10.1109/ihmsc.2017.68>
- [13] O. Kolchina, "Development of a methodology for assessing the investment climate of a municipality," *Munic. Auth.*, Vol. 3, pp. 77-85, 2006.
- [14] PwC and Calvert 22 present the updated results of the new research "Creative Capital of Global Cities". <https://www.pwc.ru/ru/press-releases/2018/creative-capital-in-global-cities.html>
- [15] European innovation scoreboard 2018. European Commission. [https://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards\\_en](https://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards_en)
- [16] Global Innovation Index 2018. A world with Innovation. WIPO. <https://www.wipo.int/publications/en/details.jsp?Id=4330>
- [17] A. M. Biedermann, *Great cultural projects as a tool for the development of contemporary cities* PhD dissertation summary. Spain, University of Zaragoza, 2014.
- [18] Creative capital index of Russian cities. 2016 Methodology and Results. PwC. [http://creativecapitalindex.com/uploads/attachment/file/28/CCI\\_Otchet\\_01032017.pdf](http://creativecapitalindex.com/uploads/attachment/file/28/CCI_Otchet_01032017.pdf)
- [19] P.M. Gureev and V.N. Grishin, "Innovative potential: problems of definition and evaluation," *Innovation*, Vol. 4 (222), pp. 89-92, 2017.