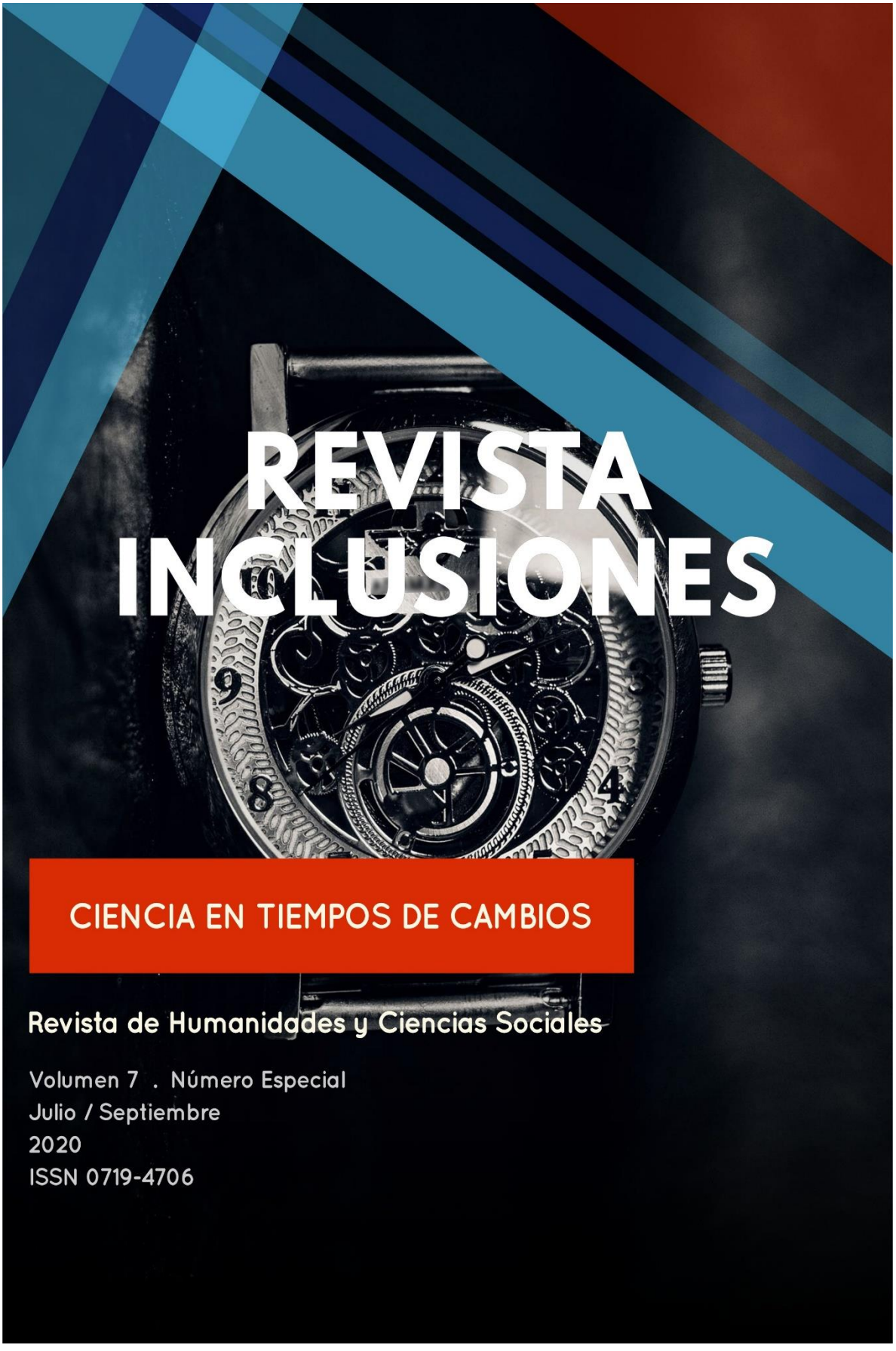

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INTEGRAL ASSESSMENT OF INNOVATION ACTIVITY IN THE MUNICIPALITIES OF THE REPUBLIC OF BASHKORTOSTAN

Ph. D. Gulnara F. Shaykhutdinova
Ufa State Petroleum Technological University, Russia
ORCID 0000-0001-8022-5442
gula_sh@mail.ru
Ph. D. Zulfiya R. Gabitova
Ufa State Petroleum Technological University, Russia
ORCID 0000-0002-4256-669X
myzyr@mail.ru
Ph. D. Ekaterina V. Karavaeva
Ufa State Petroleum Technological University, Russia
ORCID 0000-0001-6351-6029
555kate@mail.ru
Ph. D. Rezida A. Nigmatullina
Ufa State Petroleum Technological University, Russia
ORCID 0000-0003-0981-8581
nigmar@list.ru
Ph. D. Olga V. Ivanova
Ufa State Petroleum Technological University, Russia
ORCID 0000-0002-8366-2004
olgachemist@mail.ru
Lic. Ella V. Gaynullina
Ufa State Petroleum Technological University, Russia
ORCID 0000-0002-1357-9117
ella.jidkova@yandex.ru

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Abstract

At present, the problem of finding business niches and opportunities within a specific territory, taking into account the current location of the productive forces, natural-geographic, resource, production and other potentials for the development of the region becomes urgent. In this regard, it is necessary to assess the entrepreneurial and innovative potential of specific territories, including from the perspective of favoring the development of small and medium-sized businesses. In the article the authors reveal the essence of the main methods for assessing the innovation activity of the regions: growth poles concept, methodology for drawing up the investment rating of Russian regions, investment newspaper methodology, the methodology for assessing the investment climate of the territory. The purpose of the article is to identify the innovation activity of municipal units in the Republic of Bashkortostan using the integral estimation of innovation activity. A consolidated list of indicators for assessing the management system of MUs is proposed. Comparison of MUs innovation activity indices and innovation policy made it possible to identify 4 groups of MUs. The materials of the article can be useful for local authorities.

Keywords

Innovation – Innovation activity – Innovation policy – Integral assessment Region – Municipal units (MUs)

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Introduction

Innovations play a key role in economical development. They form competitive advantages for enterprises, contribute to the progressive social and economic development of the territories. Innovative activity of the territory is the main factor of its competitive development, and innovative inertia is a factor of its collapse. The innovative economic development is restrained by a number of problems, the main of which is the lack of understanding of innovative development prospects. The need to develop a systemic concept of innovative economic development has become urgent; and in this case formation and further increase in innovation activity of municipal entities become more relevant.

Innovative policy is a set of state and municipal enforcement actions aimed at innovation activity support.

An innovative and active MU is the municipal unit in which the local community, using the material and infrastructure facilities of the territory, develops in the direction of the wide application of new technologies and other innovations, the creation of high-tech jobs, further training of local personnel and the formation of civil society for the welfare of the population of the territory[1].

The innovation activity of MUs is characterized not only by the widespread use of innovations and new technologies in various spheres of their activity, but also by the creation of new high-tech jobs for the production of competitive, high-tech products and the provision of qualitatively new services. Orientation to the use of the latest scientific and technological achievements in the process of high-tech production makes it possible to effectively use available resources in the territory, as well as realize the accumulated innovative potential. The development of municipalities in this direction implies not just the use of various types of innovation in the main spheres of economic entities activity, but the creation of new jobs based on the active use of technical, technological, organizational, economic and other innovations.

Materials and Methods

MUs are encouraged to conduct innovation activity on the basis of growth poles concept, which implies the support of innovation activity of the enterprises in the territory of which innovative infrastructure and innovative potential are highly developed. At the same time, support is provided only to those industrial enterprises which manufacture high-tech products, whereas the innovative development of population-oriented sectors (housing and communal services enterprises (HCSE), transportation, medicine, education and others) are ignored.

The main drawback of growth poles concept is the orientation toward the development of individual territories (innovation centers), rather than the entire economic space. This aggravates the existing unevenness of socio-economic development of the territories and differentiates the living standards. In modern conditions, when the regions become more and more responsible for maintaining social conditions on a more or less satisfactory level, it is no longer sufficient to consider growth poles concept only. A new concept of progressive social and economic regional development is needed –growth area

[1] I. Naumov, The concept of formation and growth of municipalities' innovation activity (Ekaterinburg: Institute of Economics, the Ural branch of Russian academy of sciences, 2004).

concept, which assumes active innovative development of not all the growth poles, but of all municipalities.

Taking into account the current changes in the economic system, it becomes necessary to develop methods for assessing the entrepreneurial and innovative potential of specific territories, including from the viewpoint of favoring the development of small and medium-sized businesses.

One of the most popular and widely used methods for assessing the innovation potential of MUs in Russia is the *methodology for drawing up the investment rating of the Russian regions developed by* the rating agency Expert RA. According to this methodology, the main components of the investment climate are:

- investment potential as a sum of objective prerequisites for the effective investments, depending on the availability and variety of investment spheres and objects;
- investment risk as investment loss or investment income probability;
- investment legislation as the fundamental legal basis for conducting investment activities at the state and regional levels.

At the same time, investment potential refers to the objective capabilities of the region, determined by a combination of characteristics that take into account the main macroeconomic parameters, the saturation of the territory with production factors (natural resources, labor, fixed assets, production, economic, social infrastructure, etc.), consumer demand of the population.

In accordance with the methodology, the integrated investment potential of the region consists of eight private potentials (each of which is characterized by a whole group of indicators): production; labor; consumer; infrastructure; resource and raw materials; institutional; innovative; financial. These factors can also be supplemented by the intellectual potential characterizing the educational level of the population, the scale of research and development activities in the region, and the local potential reflecting the economic and geographical position of the region relative to the main transport communications, near and far-abroad countries, etc.

The contribution of each of the components to the integrated potential or integral risk is assessed based on a survey of experts from investment and manufacturing companies. At that, foreign experts pay more attention to the political situation in the region, whereas the Russian ones – to financial and legislative risks.

The integral potential or risk indicator is calculated as a weighted total of particular types of potential or risk. The authors interpret integral indicators as follows: the region potential is the region share in the total potential of the country, the risk level is compared with the country's average risk, which, according to the methodology, is 1. As a result, each region is characterized by two indicators: potential and risk. It should be noted that this method for assessing the investment attractiveness of the regions is characterized by some schematism and formalism.

Investment paper methodology. The calculation uses the scheme of dividing the indicators of social and economic activity of the regions into indicators that characterize the investment potential of the region and the risk of investing therein. Investment potential includes such groups as: labor resources; production; institutional capacity; innovation

potential; infrastructure development level; financial potential. In turn, the indicators that characterize the level of investment risk in the regions are: financial, political, legislative and economic.

It should be noted that there are techniques derived from existing ones and complementing them. Thus, the Republic of Bashkortostan has developed a *mapping-based methodology for assessing the investment climate in the territory*, the so-called "business maps of territories".

Electronic geographic business maps of territories are a modern means of transmitting and receiving information about economic, social, political, environmental, demographic situation in different parts of the world, countries and their regions.

This technique consists of the same set of indicators as the ratings of "Expert RA" agency, but allows visualizing the results and assessing the future location of the projected business object, that is, in fact, the technique allows assessing the level of business activity of an area (the level of business fostering) and determining the location of business based on the profile of the territory. However, this technique does not allow determining entrepreneurial niches saturation level from the position of consumer demand.

Thus, assessing the innovative potential of the territory we will take into account the existing trends focusing on the integrated innovation activity assessment of the territory.

The integral assessment of innovation activity in the municipal units of the Republic of Bashkortostan.

The main law in the field of science and innovation in the Republic of Bashkortostan is the Law of the Republic of Bashkortostan of December 28, 2006 No. 400-z "Innovation activity in the Republic of Bashkortostan"[2]. This legislative act doesn't stipulate for any norms to define the types of objects and subjects of innovation activity, forms of state regulation, the responsibility of entities and the activity of innovation funds[3].

In the context of the search for entrepreneurial opportunities in the municipal units of the Republic of Bashkortostan, one can talk about the resource (investment, entrepreneurial) potential of the territory, consisting of several private potentials. Each of them, in turn, is characterized by a whole group of indicators:

- natural-resource and tourist-recreational (provision with basic types of natural resources, availability of natural monuments, specially protected natural areas, availability of tourist attractions, etc.);
- demographic and labor (demographic state of the territory, labor resources and their educational level);
- production (aggregate result of the economic activity of the population in the region, the level of industrial, agricultural and constructive development);
- financial (tax base volume, the region's enterprises profitability and personal income);

[2] Law of the Republic of Bashkortostan of December 28, 2006 No. 400-z "Innovation Activity in the Republic of Bashkortostan"

[3] A. Kobzeva y D. Chernukha, "Resource supply of innovative economy in the region (the case of the Republic of Bashkortostan)", Molodoy Uchyonyy num 12 (2016): 1285-1290.

- consumer (aggregate purchasing power of the region's population);
- institutional (development degree of the leading market economy institutions);
- infrastructural (economic and geographic position of the region and its infrastructural security);
- social sphere development (health, education and culture institutions).

Almost all municipalities have programs to support small and medium-sized businesses; 41 municipalities of the Republic of Bashkortostan have adopted or are developing municipal programs (plans) for innovative development of the territory.

The implementation of innovative projects is bound to specific territories that provides municipalities with immediate administrative proximity to investment objects and requires considerable concentration of the functions of administrative intermediaries between the regulatory bodies whose spheres of competence are not under the charge of local administrations.

The level of innovation activity in a particular municipal entity is often not connected with the innovation policy of the relevant government bodies and is not conditioned by it. Moreover, about a third of municipalities do not have municipal programs and innovation-driven development plans at all.

There are good reasons to draw a line between the assessment of innovation activity and innovation policy in municipalities.

At the same time, the assessment of innovation activity is an element of the personal component of entrepreneurship, as it reflects the entrepreneur's ability to innovate (his innovativeness), his propensity for risk.

We propose the following key parameters of innovation activity assessment in the municipalities of the Republic of Bashkortostan:

- quantity of innovatively active entities per 100 thousand people of resident population, units / 100 000 people;
- volume of innovative products per capita, rubles / person;
- innovations costs per capita, rubles / person;
- share of innovations costs in the total volume of shipped products ,%;
- share of products assimilated within 2 years, in the total volume of shipped products,%.

The functioning municipal control structure efficiency study[4] can be built on the filling the matrix shown in Table 1. Therefore, in order to enhance innovation activity formation efficiency and accelerate innovative process development in the MU's territory, such tools of innovation management as reengineering and strategic planning should be used.

[4] K. Valtukh; A. Granberg y A. Dynkin, Innovation-driven and technological development of the Russian economy: problems, factors, strategies, forecasts. et al. (Moscow: MAKS Press. 2005).

Disadvantages of the management system	
The presence / absence of a clear MU concept	
Compliance / excess of span of management over chief executive officers (more than 8 subordinates)	
Presence / absence of clear subordination ties and their consummation in the order (resolution)	
Presence / absence of equal municipal and regional governments' responsibility principle in the periods of recovery	
Presence / absence of a conflict between regional and municipal authorities when dealing with personnel issues, reorganizing power structures	
Structure centralization assessment	
Excessive / insufficient number of administration staff, the presence / absence of scientifically based calculation of the number of employees	
Overloading of management personnel with management functions it is not in charge of, the excessive length of the working day	
Bureaucratization of the staff: delayed decision-making, long agreement period	
A large number of management levels – from ordinary employees to administration chief	
Violations of one-man management and management centralism principles in view of the large number of deputies and assistants	
Reflection of goals and objectives, modern requirements for economic and social development in MUs, as part of the administration units	
Economic (non-economic) structure, insufficient (excessive) management costs	
Duplication of management functions by various units and the lack of a clear functional specialization	
Management functions are clearly/unclearly distributed between management staff and units	
Weak/adequate scientific forecasting and development strategy projects expertise	
Absence/presence of a holistic system approach to the analysis of a specific situation	
Insufficient/sufficient management computerization	

Table 1

Consolidated list of indicators for assessing the management system of the MU

As a rule, the most significant shortcomings in the activities of MUs administrations are: lack of a clear municipal management concept, bureaucratization of administrative staff, excessive or, vice versa, insufficient number of employees in some units, duplication of the management functions of different administrative units, etc. A similar picture is typical for many Russian municipalities. The formation of their innovation activity should begin with management system optimization, that is, with the reengineering of MUs control system.

In order to boost the innovation activity of MUs, legislative mechanisms can also be used (adoption of targeted innovation programs and strategic projects for social and economic development of MUs, municipal innovation policy, etc.). Of particular relevance is the creation and further development of the legislation regulating the issues of MUs innovation-driven development, consolidating the powers of local governments to stimulate the innovation-driven development of the entities operating in the MUs. Of great importance is the improvement of tax legislation (the introduction of statutory, but absent in tax legislation, tax incentives encouraging innovation activity of entities).

An important mechanism for encouraging the innovation activity of MUs is information mechanism – the creation of information databases of the entities, which carry out innovative and research activities, innovations used, etc. Municipalities can be united

on functional grounds for the purpose of information cooperation, experience exchange, joint solution of pressing problems.

To ensure the process of intellectual resources renewal in the territory, local authorities can also use personnel mechanisms (provision of communal services allowances to scientists and workers engaged in innovation sphere, assistance to innovation-active entities and research institutions in solving the housing problem of their workers, cooperation with higher educational institutions in order to upgrade the skills of municipal employees, etc.).

Discussion

These indicators were calculated for the municipalities of the Republic of Bashkortostan based on the materials of the republican contest among administrations of municipal and urban districts for the best organization of work on the encouragement of innovation activity.

The regression analysis of the relationship between these indicators and the amount of expenditure on innovations per capita shows a high value of the deterministic coefficient (R2 = 0.63) that means that the amount of innovations costs per capita depends on the selected indicators.

The comparison of the MUs innovation activity and innovation policy indices is shown in the figure. As can be seen from the figure, four MUs groups are distinguished:

Group 1 – with below the average indices of innovation policy and innovation activity (56 MUs);
Group 2 – with an innovation policy indices below the average level, but with an innovation activity index above the average level (2 MUs);
Group 3 - one MU with an innovation policy index above the average and an innovation activity index below the average;
Group 4 - one MU with the values of both indices above the average.

MUs group 1 can be designated as innovatively depressive, 2 – as innovatively potential, 3 – as innovatively active and 4 – as innovatively inefficient.

innovation policy

Y max (105.36)	**IV Group**	**III Group**
	The city of Neftekamsk	The city of Ufa
Y avg (52.68)	**I Group**	**II Group**

	Municipal districts: Abzelilovsky, Alcheyevsky, Arkhangelsky, Askinsky, Aurgazinsky, Baimaksky, Bakalinsky, Baltachevsky, Belokataysky, Beloretsky, Bizhbulyaksky, Birsky, Blagovarsky, Blagoveshchensky, Boozdyak, Buraevsky, Burzyansky, Gafuriysky, Davlekanovsky, Duvansky, Dyurtyulinsky, Yermekeevsky, Zianchurinsky, Zilairsky, Iglinsky, Ilishevsky, Ishimbaysky, Kaltasinsky, Karaidelsky, Karmaskalinsky, Kiginsky, Krasnokamsky, Kugarchinsky, Kushnarenkovsky, Kuyurgazinsky, Meleuzovsky, Mechetlinsky, Mishkinsky, Miyakinsky, Nurimanovsky, Salavatsky, Sterlibashevsky, Tatyshlinsky Tuymazinsky, Ufimsky, Uchalinsky, Fedorovsky, Khaibullinskiy, Chekmagushevsky, Chishminsky, Sharansky, Yanaulsky the cities of: Agidel, Oktyabrsky, Sibay, Sterlitamak	Belebeevsky municipal district, the city of Salavat
Y min (0)		
	X min (0.52)	X avg (20.78) X max (41.03)

innovation activity

Table 1

Comparison of innovation activity and innovation policy indices of the Mus

The grouping of municipal entities of the Republic of Bashkortostan by the integral development level index, entrepreneurship development potential, innovation activity, innovation policy is following:

Group 1 (46 MUs): potential, entrepreneurship development level, innovation activity and innovation policy index is below the average level: Abzelilovsky, Alcheevsky, Arkhangelsk, Askinsky, Aurghazinsky, Baimaksky, Bakalinsky, Baltachevsky, Belokotayskiy, Bizhbulyaksky, Buraevsky, Birsky, Blagovarsky, Blagoveshchensky, Burzyansky, Gafuriyvsky, Davlekanovskiy, Dyurtyulinsky. Duvansky, Yermekeevsky, Zianchurinsky, Zilairsky, Iglinsky, Ilishevsky, Ishimbaysky, Kaltasinsky, Karaidelsky, Karmascalinsky, Kiginsky, Krasnokamsky, Kugarchinsky, Kushnarenkovsky, Kuyurgazinsky, Mechetlinsky, Mishkinsky, Miyakinsky, Nurimanovsky, Salavatsky, Sterlibashevsky, Tatyshlinsky, Ufimsky, Fedorovsky, Khaybullinsky, Chekmagushevsky, Chishminsky, Sharansky;

Group 2 (2 MUs): potential, entrepreneurship development level, innovation activity and innovation policy index is below the average, whereas innovation activity index above the average: the city of Salavat; Belebeevsky district;

Group 3 (10 MUs): entrepreneurial development level index is above the average, entrepreneurial potential, innovation policy and innovation activity indices are below the average: Beloretsky, Buzdyaksky, Meleuzovsky, Tuimazinsky, Uchalinsky, Yanaulsky, the cities of Agidel, Oktyabrsky, Sibay, Sterlitamak;

Group 4 (1 MU): entrepreneurship development and innovation policy levels indices are above the average, entrepreneurial potential and innovation activity indices are below the average level: Neftekamsk;

Group 5 (1 MU): development level, entrepreneurial potential, innovation policy and innovation activity indices are above the average: Ufa.

Conclusion

Thus, local authorities are able to influence innovations development in the territory. The development of the municipal unit on the basis of the wide use of technical, technological, organizational, economic and other innovations in various spheres of its life will improve the quality of public services, living standards in the territory of MUs, improve the environmental situation in MUs and create developed infrastructure necessary for the operation of enterprises, ensure and intensify municipalities' innovation activity. This requires an active position of the local authorities on the creation of institutional conditions in which it will be possible to form and develop innovation activity of MUs.

Innovation policy indicators for the municipal units of the Republic of Bashkortostan should include:

1) organizational:

- management structure effectiveness;
- creation of information databases of the entities engaged in innovation and research activities and innovations used;
- number of innovation infrastructure objects;
- creation of an expert (innovative) council under MUs administration;
- number of conferences, meetings and seminars held on innovation issues;
- number of publications in the mass media;
- etc.

2) Regulatory:

- availability of programs (plans) for municipal development;
- introduction of tax incentives encouraging innovation activity of entities;
- etc.

3) encouraging:

- placing an order for goods, works, innovative services for municipal needs;
- the amount of funds allocated for the implementation of innovation-driven development programs (plans);
- the amount of local budget funds aimed at the implementation of investment and innovation projects.

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