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ASSESSMENT OF THE SOCIAL AND ECONOMIC EFFICIENCY
OF THE TERRITORY

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Abstract

The purpose of the article is to assess the socio-economic potential of the Khabarovsk Territory using a taxonomic indicator. For the taxonomic analysis, indicators are selected - stimulants / de-stimulants; their value contributes to or, on the contrary, hinders the growth of the economic development of the territory. Stimulants should strive for a maximum in the reference object of research, and de-stimulators - to a minimum. In the process of taxonomic analysis, an object with the best values of particular research indicators is established, which is taken as a reference base for comparison. Based on the distance method, the distance deviation of individual territories from the reference object is established. When difficulties arise with the establishment of a reference subject with optimal values of all indicators, it is proposed to select the optimal comparison base for each indicator. This will somewhat complicate the assessment process, but will eliminate the problem of choosing a reference research object. The advantage of multivariate analysis is the ability to use indicators expressed in absolute value and relative units of measurement, as well as to take into account indicators adopted at the federal level and used to assess the performance of heads of executive bodies of state power. To include these indicators in taxonomic analysis, it is necessary to fulfill the condition of the variation coefficient exceeding 0.1. In conclusion, the analysis identifies parts of the Khabarovsk Territory, characterized by a high potential for socio-economic development, identifies reasons for the advanced development of these territories.

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1. Introduction

In modern economic conditions and on the basis of the current regulatory and legislative framework regulating the national goals and directions of development of the Russian Federation for the next 10 years, regional executive authorities are developing a strategy for the development of territories and a mechanism for its implementation. The strategic development of a specific constituent entity of the Russian Federation is based on national goals, taking into account the territorial specifics of the region: preserving the life, health and well-being of the population; providing conditions for self-development and self-realization; creation of necessary and safe working and rest conditions; increasing the efficiency of labor and entrepreneurship; and implementation of the principles of digitalization of the economy (Decree of the President of the Russian Federation, 2020).

Proceeding from national goals and directions of development of administrative-territorial units, indicators for assessing the effectiveness of regional development have been established at the federal level. These indicators include: the number of skilled workers in various fields of activity; the number of employees in small and medium-sized enterprises; labor efficiency in industry; the size of the average monthly wage of employees; the volume of capital investments in construction (acquisition) and modernization of fixed assets; the share of the population with incomes below and above the subsistence level; population under the age of 18; balance of population migration; the number of families provided with housing and in need of better housing conditions; the share of cities with comfortable living conditions; the level of environmental pollution; quality of education by training levels; and share of repaired roads / requiring major repairs (Decree of the President of the Russian Federation, 2019). The listed indicators of the socio-economic development of the constituent entities of the Russian Federation make it possible to draw a conclusion about the effectiveness of a particular territory, determine its rating, they are also a necessary basis for establishing the number of subsidies from the federal budget. One of the aggregated indicators of the economic potential of the municipality is the gross regional product:

Table 1. Gross regional product in 2018 (Federal State Statistics Service, 1999)

Federal District	Gross regional product, mln. rubl.	Population number, mln.	Unit gross regional product, rubl. / person	Position
Central Federal District	26164236.7	39.378	1234249.4	1
Northwestern Federal District	8195347.2	13.972	1157469.5	3
Southern Federal District	5361878.8	16.455	719734.6	7
North Caucasian Federal District	1864722.9	9.867	476472.5	8
Privolzhsky Federal District	11026688.4	29.397	805867.7	6
Ural Federal District	10677942.0	12.350	1680771.6	2
Siberian Federal District	7757655.3	17.173	987884.0	4
Far Eastern Federal District	3878320.3	8.189	962219.1	5

The coefficient of variation of the gross regional product is 36.43%, which indicates a significant fluctuation of this indicator in the regions of the Russian Federation. The maximum range of values of the analyzed indicator is 757776.9 rubles / person (61.4%), which indicates a different value added in the regions of the country. Therefore, the task of studying the socio-economic efficiency of municipalities as a whole is timely and practically significant.

2. Problem Statement

According to the Decree of the President of the Russian Federation "On assessing the effectiveness of activities of senior officials (heads of the highest executive bodies of state power) of the constituent entities of the Russian Federation and the activities of executive authorities of the constituent entities of the Russian Federation" dated April 25, 2019 N 193, regions face the task of practical application of socio-economic indicators according to the methodology approved by the Government of the Russian Federation dated July 17, 2019 No. 915. However, when implementing this methodology, the problem arises of bringing the private performance indicators of the heads of regions and, accordingly, territories to a single generalizing indicator of their development. In addition, when developing an integral indicator of the effectiveness of the development of municipalities, the task of ranking particular indicators according to the degree of their significance for each separate administrative-territorial unit becomes urgent. Until 2019, the Government of the Russian Federation established weighing coefficients for the group performance indicators of the regions. Thus, the largest share (0.5) accounted for the sum of private indicators characterizing the profitability of the territory, the remaining coefficients - for the level of social development (0.3) and the rating of executive authorities in society (0.2). In the current methodology for assessing the effectiveness of regions, there are no criteria for the importance of indicators. In this regard, in order to conduct a comprehensive assessment of territories, heads of municipalities are faced with the problem of choosing a methodology for determining an integral indicator of efficiency.

All existing methods for assessing the effectiveness of regional management are subdivided into the following groups: according to the system of absolute / relative indicators, grouped according to the target criterion; according to the rating number / distance method, which characterizes the state of the analyzed object relative to the reference object or through an economic and mathematical model reflecting the dependence of the main resulting indicator on a number of factors. Among foreign authors engaged in researching the level of regional development through a system of indicators, one should single out the works of Kondyli (2010), Slavova (2008) and others. The second group of foreign authors includes: Carboni and Russu (2014), Lengyel (2016), Madalenoa et al. (2016), who adhere to the position of a formalized description of the dependence of a certain resultant indicator on differentiated social and economic coefficients. In the domestic literature, Babich (2012), Vertinskaya (2013), Fedorova, Chernikova, are engaged in the study of indicators of the socio-economic development of territories. Musienko (Fedorova et al., 2019) and others, who also used different approaches to assessing and characterizing the effectiveness of regional governance.

3. Research Questions

The technology for calculating the system of indicators for assessing the efficiency of administrative and economic units, approved by the Decree of the Government of the Russian Federation of July 17, 2019 N 915, provides for a detailed formalized description of 15 indicators of socio-economic development of administrative-territorial units. The document also provides a step-by-step algorithm for planning these indicators for the next five years. Most of the planned indicators are calculated using an

experimental statistical method based on the data of the reporting year and the average annual growth rate of the corresponding indicator. Simultaneously with the simplicity of the presentation of the method, the availability and laboriousness of its use in practice is complicated by the presence in a number of mathematical dependencies of constant coefficients of an industry / functional nature, which is not possible to plan for the regions. In addition, the methodology does not provide an integral indicator for assessing the socio-economic efficiency of regions, described in previous versions of the document. In this regard, the paper proposes:

3.1. Establish a list of private (single) indicators characterizing the socio-economic development of municipalities, based on the Rosstat database

3.2. Apply a taxonomic indicator to assess the socio-economic efficiency of municipalities using the legally approved system of single indicators

Thus, the hypothesis of the study is as follows: the taxonomic indicator will make it possible to systematize and generalize the assessment data of the socio-economic efficiency of a particular territory. At the same time, the comparison base for each single social / economic indicator is differentiated, since there is no subject that has the best values for all selected indicators.

4. Purpose of the Study

The purpose of the work is to assess the socio-economic efficiency of municipalities, based on the normative list of indicators, as well as to establish factors / reasons that affect the dynamics of the resulting indicator of the economic potential of administrative-territorial units.

5. Research Methods

Among the normative indicators for assessing the effectiveness of regional management in the work, a limited set of coefficients was selected. This is due to the lack of statistical data on a number of indicators or limited access to them. To solve the research problem, the following indicators were used: labor productivity, expressed in thousands of rubles (x_1); the proportion of the number of families in the category of needing housing (x_2); the proportion of the number of children under 18 years of age (x_3); the proportion of low-quality and unsafe highways for public use (x_4); the volume of capital investments in the construction and modernization of fixed assets per capita in thousands of rubles (x_5); average monthly wages of employees of enterprises / organizations in thousands of rubles (x_6); specific total area of residential premises, put into effect per year in square meters (x_7); the specific amount of electricity consumption in apartment buildings (x_8); share of tax and non-tax revenues of the local budget (x_9).

Using the specified list of coefficients, the taxonomic indicator of the socio-economic efficiency of cities and districts of the Khabarovsk Territory in 2019 is calculated using the formula (SEE_i) (Babich, 2012): Most of the indicators refer to the stimulators of the economic development of the territory; their values tend to the maximum, and only 2 coefficients (the share of highways that do not meet the

regulatory requirements and the specific electricity consumption) are disincentives that restrain growth, their values tend to a minimum. The list of indicators was supplemented by the coefficient of labor productivity, which directly affects the economic efficiency of any region.

$$SEE_i = 1 - \frac{d_i}{c_0}; d_i = \sqrt{\frac{k}{\sum_{j=1}^k (x_{ij} - x_{0j})^2}}; c_0 = \bar{d}_i + 2S_d; \bar{d}_i = \frac{1}{n} * \sum_{i=1}^n d_i; S_d = \sqrt{\frac{1}{n} * \sum_{i=1}^n (d_i - \bar{d}_i)^2},$$

x_{ij} – value of j^{th} social / economic indicator in i^{th} municipality; x_{0j} – value of j^{th} social / economic indicator in municipality, taken as a comparison base (reference object); k – number of indicators (9); n – number of municipalities (19); d_i – taxonomic distances between the i^{th} and the reference object; \bar{d}_i – average taxonomic distance; S_d – square root distance deviation; c_0 – smoothed average taxonomic distance.

6. Findings

As a result of the systematization and processing of statistical information, taxonomic indicators of the socio-economic efficiency of cities and districts of the Khabarovsk Territory in 2019 were obtained (Office of the Federal State Statistics Service for the Khabarovsk Territory, Magadan Region, the Jewish Autonomous Region and the Chukotka Autonomous District, 1999).

Table 2. Socio-economic efficiency of cities and districts of the Khabarovsk Territory

City / District	x ₁	x ₂	x ₃	x ₄	x ₅	x ₆	x ₇	x ₈	x ₉	SEE
Khabarovsk	1350	4.7	13.8	58.8	99057	63	0.32	861.1	76.7	0.33
Komsomolsk-on-Amur	2616	4.8	15.6	48.5	30074	52	0.10	772.4	40.0	0.27
Amursk District	2822	5.2	16.8	6.8	43287	55	0.02	757.0	15.1	0.28
Ayano-Maiskii District	6091	2.5	24.3	18.7	0	106	0.00	1465.2	14.3	0.25
Bikin District	577	12.2	17.4	51.8	2993	42	0.12	531.0	8.8	0.25
Vaninsky District	4716	51.7	16.6	21.4	942381	68	0.04	79.0	19.7	0.96
Verkhnebureinsky District	4144	7.6	18.3	23.8	310683	65	0.01	240.2	72.8	0.49
Vyazemskii District	175	5.2	18.9	7.3	463	36	0.15	1724.0	6.0	0.25
Komsomolsk District	1025	34.0	18.0	0.0	36031	48	0.06	969.1	20.6	0.27
District named after Lazo	591	5.6	19.4	46.0	10248	35	0.13	1313.0	12.7	0.25
Nanaiskii District	733	5.4	20.2	30.2	55534	40	0.06	1107.0	11.3	0.29
Nikolaevsk District	4276	6.3	18.2	7.0	107273	61	0.03	1270.3	24.2	0.33
Okhotsk District	9174	24.0	19.7	0.0	43948	69	0.00	210.8	11.0	0.28
District named after P. Osipenko	29153	7.7	12.4	13.2	0	44	0.07	684.5	13.5	0.25
Sovetsko-Gavansky District	2314	3.1	14.8	18.6	192562	65	0.05	2582.2	12.5	0.40
Solnechny District	1274	15.5	18.2	18.9	25530	50	0.07	1110.0	14.7	0.27
Tuguro-Chumikanskii District	5236	0.8	21.8	89.0	0	51	0.25	1371.9	11.4	0.25

Among the municipalities of the Khabarovsk Territory, the Vaninsky District, the Verkhnebureinsky District and the Sovetsko-Gavansky District should be distinguished. The generalized coefficient of the socio-economic efficiency of these territories is higher than the same indicator for the

rest of the cities and districts of the Khabarovsk Territory. The leading position of the 3 territories is primarily due to the solution of strategic tasks: the creation of an industrial zone for the location of industrial enterprises and the development of transport infrastructure in the Verkhnebureinsky District; provision of transport, logistics services and services for industrial processing of resources, transit cargo in the South-Okhotsk zone (Vanino - Sovetskaya Gavan). Thus, in terms of the volume of capital investments in the construction of main production facilities, the Vaninsky District is 9.3 times higher than the average value for the Khabarovsk Territory, and the Verkhnebureinsky and Sovetsko-Gavansky Districts are 3.1 and 1.9 times higher, respectively.

7. Conclusion

The results of the study show a significant impact on the level of development of municipalities of the Khabarovsk Territory of the presence of key investment projects aimed at the formation and development of, first of all, regional industrial centers. In the Khabarovsk Territory, 5 industrial centers can be distinguished: Southern border zone, which includes the Khabarovsk cluster, Sredneamurskaya zone (Komsomolsk-na-Amur-Amursk-Solnechny cluster), South Okhotsk zone (Vanino-Sovetskaya Gavan transport and industrial cluster), Nikolaevskaya and Verkhnebureinskaya zones. Thus, the region's economy is primarily focused on the development of logistics infrastructure and the construction of diversified manufacturing enterprises. For this, the region is creating regulatory, legislative and social conditions for expanding the boundaries of territories of advanced development.

References

- Babich, T. N. (2012). *Forecasting and planning in market conditions*. LLC Scientific Publishing Center Infra-M»
- Carboni, O. A., & Russu, P. (2014). Assessing Regional Wellbeing in Italy: An Application of Malmquist – DEA and Self-organizing Map Neural Clustering. *Social Indicators Research*, 122, 677-700.
- Decree of the President of the Russian Federation (2019). On assessing the effectiveness of the activities of senior officials (heads of the highest executive bodies of state power) of the constituent entities of the Russian Federation and the activities of executive authorities of the constituent entities of the Russian Federation. Retrieved on 17 June 2021 from: <http://docs.cntd.ru/document/554372428>
- Decree of the President of the Russian Federation (2020). On the national development goals of the Russian Federation for the period up to 2030. Retrieved on 17 June 2021 from: <http://docs.cntd.ru/document/565341150>
- Federal State Statistics Service (1999). Regions of Russian Federation. Socio-economic indicators. Retrieved on 17 June 2021 from <https://rosstat.gov.ru/folder/210/document/13204>
- Fedorova, E. A., Chernikova, L. I., & Musienko, S. O. (2019). Evaluation of the effectiveness of regional management. *Economy of the region*, 15(2), 350-362. <https://doi.org/10.17059/2019-2-4>
- Kondyli, J. (2010). Measurement and evaluation of sustainable development: A composite indicator for the islands of the North Aegean region, Greece. *Environmental Impact Assessment Review*, 30(6), 347-356.
- Lengyel, I. (2016). Competitiveness of Metropolitan Regions in Visegrad Countries. *Procedia – Social and Behavioral Science*, 223, 357-362
- Madalenoa, M., Moutinhoa, V., & Robainaa, M. (2016). Economic and Environmental assessment: EU cross-country efficiency ranking analysis. *Energy Procedia*, 106, 134-154

- Office of the Federal State Statistics Service for the Khabarovsk Territory, Magadan Region, the Jewish Autonomous Region and the Chukotka Autonomous District (1999). *Date base*. Retrieved on 17 June 2021 from <https://habstat.gks.ru/folder/25046>
- Slavova, T. A. (2008). Rank order and efficiency evaluation of the EU regions in a social framework. *Empirica*, 35, 339-367
- Vertinskaya, T. S. (2013). Methodological foundations for the development of a set of indicators for assessing the economic integration of regions of the CES member countries. *European economic integration*, 2(19), 21-44