SPATIAL ASPECTS OF TERRITORIAL DEVELOPMENT

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The Phenomenon of Unevenness of Socio-Economic Development of Cities and Districts in the Murmansk Oblast: Specifics, Trends, Forecast, Regulation*

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Abstract. The article studies the transformation and regulation of the phenomenon of unevenness of socio-economic space. We provide detailed comments on a fundamental nature of the unevenness of development of socio-economic space in any territorial entity (region, country, district, etc.) and point out the importance of research on the unevenness of development from the standpoint of science and management. We substantiate a priority approach to the study of unevenness; in the framework of this approach we move consistently from quantitative assessment of the phenomenon of unevenness of space through identification of specifics and patterns to forecasting and practical recommendations

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for management. All this is related to the prospects of further research. We present the importance and relevance of this study, which aims to identify specifics of the phenomenon of unevenness of socio-economic development of cities and districts of the Murmansk Oblast, and to forecast its dynamics and regulation in present-day crisis conditions. The paper presents a comprehensive vision for methodological support of research on the differentiation of socio-economic space; it also substantiates the authors' own version of methodological tools to assess the phenomenon of differentiation of socio-economic development in cities and districts of the region. Having tested the proposed techniques that help assess differentiation, we consider comparative dynamics of cities and districts of the Murmansk Oblast: we rank the objects by level of socio-economic development and identify trends and patterns in the development of the phenomenon. We make a forecast of how the crisis can impact the development of differentiation between cities and districts of the Murmansk Oblast according to two scenarios: the basic scenario assumes that most social indicators will either remain stable or experience slight differentiation, and a further slight increase is expected in the differentiation of economic indicators. The target scenario assumes a similar situation on social indicators and a higher growth rate of differentiation of economic indicators. Having identified trends in the development of differentiation of socio-economic space in the Murmansk Oblast and having forecast the impact of the crisis on the ratio of differentiation parameters we substantiate a comprehensive vision of immediate actions and management perspectives: it is necessary to pursue the regional policy defined by specific objectives of strategic planning in the Murmansk Oblast; to prevent further reduction in the number of medical organizations in the region, to maintain and increase the number of medical personnel in municipalities; to enhance regional measures in the investment sector; to stimulate economic growth in the Kola bearing zone, including the establishment of new legal and regulatory environment. Scientific novelty of the findings consists in the fact that they contribute to the development of theoretical and methodological ideas about the formation of the phenomenon of differentiation of cities and districts in the Arctic region. Our research is different from other works on this topic due to its comprehensiveness and a certain originality in using assessment techniques, which made it possible for the first time to identify specifics and development trends of this phenomenon in the Murmansk Oblast that are relevant for management theory and practice. In view of the above, the findings can be widely used in fundamental and applied science and in territorial management.

Key words: differentiation, socio-economic development, cities, districts, Murmansk Oblast.

Introduction. The study is part of a range of fundamental tasks aimed to identify trends, patterns, and opportunities of regulating the phenomenon of unevenness of socio-economic space. The fundamental nature of these tasks is due to constant contradictions between management efforts in any country, region, municipality, aimed to reduce socio-economic imbalances on their territory, and objective laws of the capitalist system that reproduce and deepen differentiation of socio-economic space of any territorial entity.

Objective nature of this contradiction is reflected in the limitations of theories of development and regulation of the phenomenon of socio-economic development unevenness of territories [15; 16; 23] and in the fact that they are not enough to meet the requirements of management practices [3; 8; 9; 13, 18; 20]. For this reason, theories aimed to address the differentiation of socio-economic space gradually lost their strength and were reduced to several theoretical constructions that largely represent either a purely theoretical interest or the product of exports of developed countries to less developed ones [13; 23; 24]. At the same time, one more trend is gaining power, it aims to analyze in detail the actual development of differentiation and to identify threats caused by socio-economic development unevenness of

certain territorial objects [1; 4; 5; 7; 8; 14; 17]. We attribute this to the fact that simultaneously with the limitations of the theory, within its framework there is a reasonable criticism of modern world order which deepens the gap in the development of territories, and the danger of differentiation of socio-economic space is pointed out [18; 20; 22; 24]. This criticism and the actual needs of territorial development management remind us of an old moral: "In order to defeat the old theory, it is not enough to expose its background to destructive criticism... it is necessary to propose a new theory" [19, p. 659]. The message of this moral is that it urges us to accumulate and generalize facts. This determines the priority of the approach to the study of unevenness based on a sequential movement from a quantitative assessment of space unevenness, by identifying the features, perhaps, patterns, and to the forecast and recommendations to management [1; 6; 10; 13].

The goal of the present study lies in the very framework of this approach; the goal is to identify the specifics of the phenomenon of socio-economic development unevenness of cities and districts of the Murmansk Oblast, to forecast the dynamics and propose ways to regulate it in crisis conditions.

The choice of the Murmansk Oblast as the object of our research is due to the following factors. First, the Murmansk Oblast is a pilot region of the Arctic zone of the Russian Federation (the Russian Arctic), in which the Kola bearing zone is being formed. It is expected that if a series of large-scale investment projects is implemented, it will have a significant impact on socio-economic development in the region by changing the configuration of socio-economic space, the ratio of social and economic development parameters of cities and districts. This factor determines a special significance of diagnostics of the phenomenon of differentiation in this region. Second, the Murmansk Oblast has the most diversified economy among Russian Arctic regions; it has a developed system of science and education, which, along with opportunities, creates higher requirements to promoting the development of socio-economic space in the region. This factor determines not only the importance of identifying the specifics and trends of differentiation development to forecast the situation and plan administrative activities. Logical difficulty of managing a complex object also determines that the Murmansk Oblast can be a testing ground for public administration efficiency from the standpoint of ensuring balanced regional development.

Specific features of the Murmansk Oblast predetermine the theoretical, methodological and practical significance of the research. In particular, when developing scientific recommendations on territorial development management, one often turns to foreign experience. However, the use of foreign approaches in this case is difficult because there is a primary limitation to the use of the analogy – lack of high-quality objects of comparison in close proximity. For instance, there is no foreign region in the foreign part of the Arctic, which would be comparable with the Murmansk Oblast in terms of population and complexity of economic and social development. Owing to the qualitative complexity of socio-economic space of the Murmansk Oblast, management action will produce a different effect on the ratio of parameters than international experience implies[1]. In addition, in 2016, a fundamentally new approach to the management of the Russian Arctic started to be implemented; it considers the Russian Arctic as a single macro-region through the system of bearing development zones linked to specific Arctic actors, in particular

[1] We note the stability of the main task of foreign management in the northern territories: it is to ensure convergence of social characteristics of settlements, relative equality of people's access to goods and services.

the Murmansk Oblast. There is no foreign experience in the management of such projects. From this perspective, it is important to define specific features in the differentiation of the Murmansk Oblast not only for the development of modern recommendations, but also as the basis for future studies of the behavior of the phenomenon of differentiation, linked with the implementation of a pilot project on formation of the Kola bearing zone. Such information is important for providing substantiated scientific support to the management of the regions of the Russian Arctic.

Techniques and basic indicators in assessing uneven socio-economic development

The most important part of the studies of differentiation of socio-economic space is the research in the methodological field, including the development of methods and justification of techniques in the study of spatial development unevenness [1; 7; 11; 12; 15]. However, as we note, in science, "importance" does not determine the quantity and quality of work. We agree with S.A. Suspitsyn who points out that "unfortunately, we do not see that the same amount of attention, which is paid to the use of these techniques, is paid to the improvement of the very techniques of cross-regional comparison, verification of correctness of assessment methods and reliability of results of the comparisons" [14, p. 97]. In this context, a particular scientific importance is attached to consideration of assessment tools to ensure comprehensive elaboration of regional asymmetry, and also the analysis of results that demonstrate not only specific features of the object of study, but also the capabilities and limitations of the methodological assessment tools applied.

We propose to use three techniques based on three major methods of the study of socio-economic inequality[2].

The first technique is based on the method of factor ranking without intervals, interconnected with the point estimate. In this method, we propose to use a technique called "average by positions", often used not only for research, but for practical purposes of state regulation of territorial development[3].

The sequence of iterations of this method is as follows: 1) we determine the rank of each object for each of the assessment indicators – the best value (first place), the worst value (last place); 2) point estimate is calculated for each of the indicators for each object (the mean value is assumed to be zero) as the difference between the rank of average and the rank of any object in the overall ranking series; 3) for each object the point ratings are summarized by indicators and further divided by the number of indicators.

It is generally accepted that the required assessment objectively describes the state of each regional object in comparison with other objects. However, it has an inherent disadvantage: it does not allow us to quantitatively characterize the extent of differences; in fact it only allows us to rank the objects of comparison [1, p. 50-51].

The second technique is based on an index method using the relative strength index. We tested this technique for the first time when we identified the comparative dynamics of Russia's Northern regions [2].

The essence of index methods lies in the transition from indicators expressed in economic (physical) units to dimensionless indexes that can be compared visually. From the standpoint of economic analysis of differentiation of cities and districts, of greatest interest is the fact that index methods allow us to track and actually compare the rate of change. These properties of information are important for managing regional development,

[2] A detailed critical analysis of the main methods for assessing differentiation is given in [1; 12; 14]

[3] It is contained, for example, in Annex 6 to the federal target program "Reduction of differences in socio-economic development of regions of the Russian Federation (2002–2010 and till 2015)".

because first, they characterize transformation processes; second, they are indicators of management efficiency; third, they provide an opportunity of comparison with other objects (in our case – cities and districts).

The sequence of iterations of the proposed technique is as follows.

We assume that *V(t)* is the value of some economic indicator, expressed in natural units (e.g., cost) in year *t*. Then the index *V* is given by the ration of its values to the values for the base year t_0:

$$I(t) = V(t) / V(t_0). \quad (1)$$

Possessing individual indices for any indicator for several objects, we can build the index for the whole regional group, or the composite index. By adding together the indices for several objects and dividing the sum by the number of objects in the group we will receive a combined arithmetic average index of the group:

$$IG(t) = (I_1(t) + ... + I_N(t)) / N, \quad (2)$$

where *N* is the number of objects in the group.

Dividing the individual index of the object by the index of the group we will receive the index of the relative strength of the object relative to the group of objects.

From the standpoint of regional economic objectives the methodological sense of the relative strength index of the object shows how its dynamics for the individual regional object (in our case – a city or district) differ from general group dynamics; it is actually a measure of differentiation and a rating of development of the object by a particular indicator. The more the values of the relative strength index, the stronger it stands out from the group.

The comparison of the index with the unit shows whether the region is developing better or worse in comparison with the regional group as a whole. If the values of the relative strength index of a region are less than 1, then it develops worse than the group as a whole, if they are greater than 1, then it develops better. This information can be useful to public authorities, since it helps highlight problematic and successful regions.

The relative strength index is a tool commonly used in financial analysis. However, in regional studies the use of the relative strength index is not practiced. It is hard to explain why, especially since the calculation is simple, the interpretation is simple and obvious, and the results of comparison are clear and they help display disparate values in a single chart (because the indices lack dimensionality).

The third technique is based on calculating the analogue of the Gini coefficient commonly used to study income inequality. For each of the basic indicators of regional objects of the Murmansk Oblast we propose to calculate the analogue of the Gini index (let us call it differentiation index *RDI*). The formula for calculation is as follows:

$$RDI = \frac{\sum_{i=1}^{n} (2i - n - 1) y_i}{n^2 E[y]}, \quad (3)$$

where y_i – *i* is the *i*-th index value in ascending data set ($y_i \le y_{i+1}$); *n* is the number of indicator values; *E*[*y*] is the average value of the index *y*.

We will use this technique for short-term forecasting of differentiation of cities and districts of the Murmansk Oblast[4].

[4] We note the following methodological feature dictated by the specifics of the Murmansk Oblast: an opportunity to consider urban districts (the city of Murmansk, Kovdorsky District, the towns of Apatity, Kirovsk, Monchegorsk, Olenegorsk, and Polyarnye Zori) and municipal districts (Kolsky, Kandalakshsky, Lovozerskiy, Pechengsky, Tersky) of the Murmansk Oblast as a single object of statistical research. Let us explain that this is caused not only by the properties of the scheme of calculations, for example, of the Gini coefficient, but also by the object characteristics of the Murmansk Oblast that allow us to consider these two groups as a whole in connection with qualitative proximity of the objects. Both groups are the enlarged groups of municipalities, and they do not differ much by their number and by their socio-economic characteristics. In addition, a specific feature of the Murmansk Oblast is its relatively small number of municipalities included in urban districts and municipal districts, which also allows us to consider these groups together.

Table 1. The rating of "average by positions"*

Urban district / municipal district	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
city of Murmansk	3.88	2.63	2.63	2.75	2.38	2.5	1.75	2.75	2.63	1.88	2	1.38	1.88	1.63	1.77
Kovdorsky District**	0.5	-1.25	-1.5	-1.38	-2.25	-1.5	-1.38	-1.75	-2.25	-2	-2.75	-2.38	-3.88	-2.88	-2.08
town of Apatity	0.5	-0.25	0.13	0.38	-0.13	-0.25	-0.88	-0.75	0.25	-1	-1.75	-1.63	-1.25	-1	-1.03
town of Kirovsk	1.38	0.75	1	0.75	0.63	0.88	1.38	1.88	0.88	0.75	1.13	0.25	0.13	0	0.20
town of Monchegorsk	1	1.25	1.5	1.88	1.13	1.38	1.25	1	0.75	0.13	0.25	0.38	0.88	-0.13	0.23
town of Olenegorsk	-2.13	-2.5	-2	-2.25	-2.13	-2.13	-2.75	-2.38	-2.75	-3.38	-3.13	-3.25	-3.5	-3.38	-3.00
town of Polyarnye Zori	0.75	-0.25	0.13	0.25	-0.25	-0.75	-0.75	-0.88	-0.5	-0.63	-0.5	-0.38	0.25	-0.38	-0.54
Kolsky District	-3.63	-3.75	-3.13	-2.75	-3.38	-4.13	-4	-2.88	-2.38	-1.88	-1.88	-2.13	-2.88	-2.13	-2.78
Kandalakshsky District	-1.13	-0.88	-1.38	-0.88	-1.5	-1.75	-2.38	-2	-1.25	-1.75	-0.75	-1.25	-1	-1.63	-1.01
Lovozersky District	-4.5	-6	-6	-5.88	-6.38	-5.5	-5.5	-4.88	-5.25	-5.25	-5.63	-5.25	-5.13	-5.5	-5.44
Pechengsky District	-2.75	-3.75	-4.25	-3.88	-4.75	-4.88	-4.88	-3.25	-3.25	-3.63	-3.63	-3.5	-2.88	-3.25	-2.98
Tersky District	-2	-2.25	-1.75	-2	-2.88	-3.38	-4.63	-4.75	-4.75	-2.75	-2.88	-3.38	-2.13	-2.5	-3.00

* Calculated with the use of official statistics data provided by the territorial office of the Federal State Statistics Service in the Murmansk Oblast. Available at: http://murmanskstat.gks.ru/wps/wcm/connect/rosstat_ts/murmanskstat/ru/statistics/
** Kovdorsky District is an urban district.

We choose ***basic assessment indicators*** in accordance with the requirements of comprehensiveness, accessibility, consistency and the minimum required number of indicators. We propose the following version of the indicators that show differentiation of cities and districts of the region: 1) investments in fixed capital of large and medium-sized organizations per capita; 2) average retail trade turnover per capita; 3) the volume of paid services per capita; 4) average monthly nominal accrued wage; 5) the number of registered crimes per 1,000 population; 6) officially registered unemployed persons at the end of year; 7) the number of doctors per 1,000 population, at the end of year; 8) the total area of residential premises on average per inhabitant, at the end of year[5].

[5] The principle of indicators used in the calculation of integrated assessment according to the "average by positions" is "the more, the better"; therefore, model parameters that did not correspond to this principle, are translated in reverse ones. In the assessment of the relative strength index and calculation of the Gini coefficient the initial state of the indicators was preserved.

The results of assessing the phenomenon of socio-economic development unevenness of cities and districts of the Murmansk Oblast.

The rating of "average by positions". We note that the rating estimates have a negative sign for almost all objects. The reason is that the assessment includes a set of indicators characterizing social, economic, resource, and infrastructure components of regional development. The negative sign indicates the imbalance of these components. That is, if the object (urban district or municipal district) demonstrates good data on any specific indicators, it "falls behind" in the group of other indicators, and this is reflected in the negative sign of the ranking. The situation is stable only in the cities of Murmansk, Kirovsk and Monchegorsk, which consistently occupy the best positions in the ranking *(Tab. 1)*. The pattern Among municipal regions is relatively even, but Lovozersky District shows a more negative trend.

The rating by the relative strength index. We note that this rating gives more detailed infor-

Table 2. The rating according to the relative strength index by the indicator "investment in the fixed capital of large and medium-sized organizations per capita"*

Urban district/ municipal district	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
city of Murmansk	1	0.48	0.49	0.41	0.38	0.42	0.30	0.44	0.32	0.16	0.34	0.24	0.32	0.58	0.49
Kovdorsky District	1	0.51	0.46	0.91	0.45	1.25	1.13	0.59	0.42	0.63	1.22	1.08	0.02	0.99	1. 00
town of Apatity	1	1.25	1.25	0.91	1.04	1.23	1.66	1.42	1.74	0.56	0.74	1.62	3.48	1.83	1.12
town of Kirovsk	1	1.00	1.16	0.92	1.11	0.74	0.60	0.57	0.84	1.18	1.71	2.33	1.87	1.94	1.65
town of Monchegorsk	1	2.11	2.61	2.03	1.26	1.07	1.05	0.32	0.28	0.13	0.24	0.27	0.27	0.46	0.30
town of Olenegorsk	1	0.37	0.54	1.96	3.84	2.19	2.39	2.11	0.65	0.91	1.82	2.02	1.47	1.53	1.43
town of Polyarnye Zori	1	1.57	1.03	1.05	0.64	0.51	0.35	0.32	0.58	0.57	0.40	0.32	0.40	0.34	0.33
Kolsky District	1	2.07	2.26	1.83	1.36	1.25	1.39	1.81	2.91	5.00	2.52	1.39	1.06	1.29	1.08
Kandalakshsky District	1	0.84	0.63	0.55	0.39	2.04	0.96	0.32	0.35	0.28	0.63	0.38	0.35	0.36	0.70
Lovozersky District	1	0.49	0.54	0.45	0.43	0.79	1.70	0.95	0.53	0.44	0.36	0.22	0.24	0.24	0.31
Pechengsky District	1	0.35	0.10	0.20	0.06	0.12	0.17	2.38	2.89	1.70	1.73	1.84	2.21	2.16	1.87
Tersky District	1	0.95	0.93	0.78	1.02	0.38	0.30	0.75	0.50	0.43	0.29	0.28	0.30	0.30	0.26

* Calculated with the use of official statistics data provided by the territorial office of the Federal State Statistics Service in the Murmansk Oblast. Available at: http://murmanskstat.gks.ru/wps/wcm/connect/rosstat_ts/murmanskstat/ru/statistics/

mation for each indicator and characterizes not only the measure of differentiation, but also the dynamics of modifications. Recall that comparing the index with the unit shows whether the situation in the region is worse or better than that in the regional group as a whole. If the values of the relative strength index for a region are less than 1, then it develops worse than the group as a whole, if they are greater than 1, then it develops better.

The best positions according to the indicator "investment in the fixed capital of large and medium-sized organizations per capita" that are better than those of the group are demonstrate by city districts of Kirovsk, Apatity[6], and Olenegorsk *(Tab. 2)*.

The dynamics of the rating according to the indicator "average retail trade turnover per capita" reflects the development of retail trade in conjunction with the purchasing power of citizens and satisfaction of demands of visitors whose inflow is increasing. Among urban districts the best positions are consistently demonstrated by Murmansk and Monchegorsk *(Tab. 3)*. The "worst" positions are also relatively stable: they are shown by Kovdorsky District and the town of Olenegorsk. It is interesting to note the improved position of Kirovsk according to the indicator under consideration[7]. Among municipal regions the rating shows good positions for Kandalakshsky District. Lovozersky and Tersky municipal districts show poor comparative positions.

Consumption of paid services by citizens is an important socio-economic indicator associated with income level, with specific economic situation in the locality, with types

[6] The situation in Apatity should be characterized as extremely favorable, because this urban district has no mining orientation; consequently, the activation of its internal resources for socio-economic development determined its high positions.

[7] In 2014, there has been a shift of all objects according to the studied indicator. This is due to an outlier of the original indicator in the Kolsky District (the calculations showed more than a five-fold excess relative to the group-wide level). Most likely it is an error of the original data because the review of the socio-economic situation pointed to the impossibility of using objective facts to explain the outlier.

Table 3. The rating according to the relative strength index by the indicator "average retail trade turnover per capita"*

Urban district / municipal district	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
city of Murmansk	1	1.02	1.04	1.05	1.06	1.08	1.12	1.12	2.43	2.15	1.86	1.95	1.42	0.90	1.02
Kovdorsky District	1	1.01	0.95	0.97	0.98	1.00	0.98	0.96	0.63	0.75	0.61	0.56	0.79	0.51	0.60
town of Apatity	1	0.92	0.95	0.96	0.95	0.92	0.88	0.85	1.67	1.55	1.17	1.20	1.13	0.72	1.00
town of Kirovsk	1	0.98	0.98	0.97	0.97	0.96	0.96	0.97	0.85	0.88	0.70	0.78	0.94	0.58	0.70
town of Monchegorsk	1	1.01	1.02	1.01	1.02	1.05	1.04	1.05	0.70	0.64	0.87	1.24	1.44	0.83	0.80
town of Olenegorsk	1	0.94	0.94	0.92	0.90	0.87	0.81	0.82	1.02	0.94	0.84	0.93	0.84	0.52	0.76
town of Polyarnye Zori	1	0.95	0.95	0.96	0.96	0.93	0.90	0.89	1.40	1.53	1.68	1.44	1.27	0.74	1.08
Kolsky District	1	0.97	0.97	0.94	0.90	0.89	0.89	0.90	0.47	0.63	0.82	0.91	0.79	5.19	0.89
Kandalakshsky District	1	1.11	1.11	1.12	1.13	1.14	1.18	1.21	1.54	1.56	2.29	1.79	1.90	1.03	1.00
Lovozersky District	1	0.96	0.96	0.98	0.99	0.99	1.02	1.12	0.21	0.32	0.20	0.19	0.15	0.09	0.01
Pechengsky District	1	1.09	1.09	1.11	1.14	1.20	1.28	1.38	0.76	0.76	0.68	0.78	1.15	0.78	0.70
Tersky District	1	1.02	1.03	1.01	1.01	0.97	0.93	0.74	0.32	0.29	0.27	0.24	0.19	0.10	0.17

* Calculated with the use of official statistics data provided by the territorial office of the Federal State Statistics Service in the Murmansk Oblast. Available at: http://murmanskstat.gks.ru/wps/wcm/connect/rosstat_ts/murmanskstat/ru/statistics/

Table 4. The rating according to the relative strength index by the indicator "the volume of paid services rendered to citizens per capita"*

Urban district/ municipal district	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
city of Murmansk	1	0.97	0.98	1.05	0.97	0.93	0.91	0.88	0.87	1.06	1.02	0.97	1.31	1.02	1.01
Kovdorsky District	1	0.97	0.98	0.94	0.85	0.87	0.86	0.84	0.84	0.90	0.37	0.58	0.43	0.37	0.40
town of Apatity	1	1.04	1.01	1.03	0.99	0.96	0.98	0.95	0.91	0.60	0.62	0.62	0.53	0.52	0.61
town of Kirovsk	1	1.06	0.99	1.09	1.07	1.08	1.05	1.04	1.05	0.84	0.94	1.09	1.08	1.02	1.09
town of Monchegorsk	1	1.11	1.12	1.11	1.02	0.95	0.94	0.96	0.96	1.31	0.85	0.86	0.96	0.91	0.80
town of Olenegorsk	1	1.02	1.12	0.98	0.88	0.90	0.90	0.90	0.89	0.62	0.56	0.57	0.31	0.33	0.68
town of Polyarnye Zori	1	1.03	0.97	1.24	1.14	1.15	1.14	1.09	1.13	1.07	1.21	1.16	1.43	1.36	1.09
Kolsky District	1	1.09	1.14	1.01	1.08	1.04	1.04	1.06	1.10	0.69	0.86	0.92	1.00	0.94	0.92
Kandalakshsky District	1	1.03	1.03	1.08	1.18	1.13	1.12	1.14	1.17	1.09	1.28	1.23	1.02	0.99	1.19
Lovozersky District	1	0.81	0.82	0.70	1.01	1.17	1.22	1.36	1.35	1.42	1.56	1.53	0.60	1.46	1.34
Pechengsky District	1	0.92	0.81	0.74	0.80	0.79	0.80	0.85	0.81	0.93	1.03	1.24	1.26	1.17	1.01
Tersky District	1	0.95	1.03	1.03	1.01	1.02	1.05	0.92	0.92	1.47	1.71	1.22	2.06	1.92	1.90

*Calculated with the use of official statistics data provided by the territorial office of the Federal State Statistics Service in the Murmansk Oblast. Available at: http://murmanskstat.gks.ru/wps/wcm/connect/rosstat_ts/murmanskstat/ru/statistics/

of households etc. The rating according to the indicator "the volume of paid services rendered to citizens per capita" indicates that three urban districts such as Polyarnye Zori, Murmansk, and Kirovsk show better results *(Tab. 4)*. The lowest values of the rating are demonstrated by urban districts such as Kovdorsky District and the town of Olenegorsk. Among municipal districts, the highest positions are held by Lovozersky and Tersky districts.

Wage rate determines employment-related, economic and social behavior of people and is a measure of implementation of their socio-economic potential in a certain territory. The rating according to the indicator "average monthly nominal accrued wages" demonstrates consistently high positions of the towns of Kirovsk, Apatity, Polyarnye Zori, and the city of Murmansk *(Tab. 5)*. Pechengsky Municipal District shows steadily worse positions.

Crime rate is the most important characteristic of the quality of life in a certain territory. The rating according to the indicator "the number of registered crimes per 1,000 population" shows the following *(Tab. 6)*: the worst situation among urban districts is

Table 5. The rating of the relative strength index by the indicator "average monthly nominal accrued wages"*

Urban district / municipal district	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
city of Murmansk	1	1.00	0.99	1.00	0.99	1.02	1.01	0.99	1.05	1.07	1.04	1.04	1.01	1.02	1.08
Kovdorsky District	1	0.97	0.91	0.87	0.91	0.91	0.89	0.94	0.99	0.92	0.90	0.89	0.88	0.89	0.83
town of Apatity	1	1.04	1.05	1.10	1.14	1.18	1.17	1.18	1.19	1.18	1.17	1.17	1.18	1.15	1.19
town of Kirovsk	1	1.01	1.01	1.05	1.07	1.08	1.06	1.05	1.13	1.13	1.16	1.21	1.22	1.24	1.23
town of Monchegorsk	1	0.94	0.91	0.88	0.84	0.84	0.86	0.85	0.79	0.79	0.80	0.79	0.76	0.72	0.80
town of Olenegorsk	1	0.92	0.91	0.94	0.96	1.02	0.96	0.93	0.88	0.90	0.91	0.92	0.97	0.97	0.95
town of Polyarnye Zori	1	1.10	1.22	1.09	1.04	1.05	1.15	1.10	1.06	1.12	1.10	1.07	1.01	0.98	1.14
Kolsky District	1	1.03	1.11	1.18	1.20	1.16	1.15	1.16	1.19	1.18	1.14	1.13	1.13	1.14	1.14
Kandalakshsky District	1	0.99	1.02	1.04	0.96	0.95	0.89	0.83	0.83	0.83	0.86	0.85	0.83	0.84	0.85
Lovozersky District	1	0.99	0.98	0.98	1.02	1.00	0.95	0.99	0.97	0.93	0.93	0.97	1.00	1.01	0.99
Pechengsky District	1	0.85	0.82	0.78	0.71	0.72	0.74	0.74	0.72	0.73	0.72	0.71	0.68	0.66	0.70
Tersky District	1	1.17	1.07	1.08	1.16	1.08	1.16	1.23	1.22	1.22	1.25	1.24	1.34	1.38	1.26

* Calculated with the use of official statistics data provided by the territorial office of the Federal State Statistics Service in the Murmansk Oblast. Available at: http://murmanskstat.gks.ru/wps/wcm/connect/rosstat_ts/murmanskstat/ru/statistics/

Table 6. The rating according to the relative strength index by the indicator "the number of registered crimes per 1,000 population"*

Urban district / municipal district	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
city of Murmansk	1	1.25	1.17	1.29	1.39	1.43	1.35	1.18	1.03	1.08	1.02	0.92	0.85	0.84	1.01
Kovdorsky District	1	0.93	0.92	0.75	0.89	0.83	0.97	0.81	0.75	0.97	0.92	0.92	0.80	0.84	0.92
town of Apatity	1	1.05	1.12	1.31	1.61	1.50	1.47	1.42	1.19	1.21	1.12	0.98	0.91	0.89	0.99
town of Kirovsk	1	0.89	0.91	0.88	0.97	0.99	1.42	1.25	1.22	1.21	1.61	1.42	1.28	1.30	1.21
town of Monchegorsk	1	0.95	0.88	0.91	0.88	0.86	1.03	0.99	1.08	1.11	1.04	1.00	1.05	1.06	1.03
town of Olenegorsk	1	1.00	0.88	0.93	0.93	0.82	0.77	0.91	0.93	0.67	0.93	0.92	1.05	1.05	0.98
town of Polyarnye Zori	1	0.89	0.98	0.86	0.81	0.63	0.70	0.63	0.71	0.75	0.74	0.74	0.86	0.83	0.78
Kolsky District	1	1.07	1.40	1.25	1.38	1.47	1.32	1.47	1.24	1.24	1.23	1.34	1.25	1.30	1.27
Kandalakshsky District	1	1.03	0.90	1.01	0.88	0.75	0.77	0.81	0.92	0.79	0.75	0.64	0.85	0.83	0.77
Lovozersky District	1	0.88	0.84	0.98	0.82	1.15	0.86	1.05	1.29	1.23	1.06	1.16	1.05	1.09	1.10
Pechengsky District	1	0.98	0.80	0.91	0.70	0.93	0.81	0.90	1.01	0.91	0.89	1.02	1.03	0.99	0.94
Tersky District	1	1.08	1.20	0.90	0.72	0.66	0.53	0.57	0.64	0.83	0.69	0.95	1.02	0.98	0.88

* Calculated with the use of official statistics data provided by the territorial office of the Federal State Statistics Service in the Murmansk Oblast. Available at: http://murmanskstat.gks.ru/wps/wcm/connect/rosstat_ts/murmanskstat/ru/statistics/

observed in Monchegorsk and Murmansk; the best situation is observed in Kovdorsky Urban District. Among municipal districts, the highest number of crimes is observed in Kolsky District; the situation is good in Kandalakshsky and Pechengsky districts.

The indicator "the number of officially registered unemployed at the end of year" characterizes the labor market and economy of the territories under comparison. The situation is developing negatively in the urban district of Murmansk *(Tab. 7)*. The lowest ratings and, therefore, a less critical situation with the problem of unemployment are observed in the urban districts of Kirovsk and Kovdorsky District. Among municipal districts, the problem of unemployment is most acute in Kandalakshsky, Pechengsky, and Tersky districts.

The most important indicators of social infrastructure of the territory are the indicators characterizing the accessibility of healthcare services. The rating according to the relative strength index on the indicator "the number of doctors per 1,000 population, at the end of year" shows that the best situation with the doctors is in the urban district of Murmansk *(Tab. 8)*.

Provision with housing is the most important characteristic of the quality of life in a certain territory. The rating according to the relative strength index by the indicator "the total area of residential premises on average per inhabitant, at the end of year" shows the expected minimum endowment with living quarters in the urban district of Murmansk *(Tab. 9)*. The best indicators of endowment with housing among urban districts are observed in Kovdorsky District, among municipal districts – in Kandalakshsky District.

Evaluation of differentiation according to the analog of the Gini coefficient. Recall that the Gini coefficient equal to 0 (0%) indicates total equality and if it is equal to 1 (100%) then there is absolute inequality. That is, the closer to unity the values we obtain for each indicator, the greater the differentiation for a specific indicator *(Tab. 10)*.

Table 7. The rating according to the relative strength index by the indicator "the number of officially registered unemployed, normalized by the number of population at the end of year"*

Urban district / municipal district	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
city of Murmansk	1	1.02	0.83	0.85	0.81	0.75	0.94	1.24	1.22	1.42	1.23	1.21	1.16	1.03	1.20
Kovdorsky District	1	1.00	1.03	0.94	0.92	0.90	0.72	0.72	0.69	0.62	0.70	0.71	0.85	0.82	0.78
town of Apatity	1	1.08	1.14	1.00	0.85	0.80	0.72	0.88	0.89	0.89	0.80	0.58	0.87	1.11	0.81
town of Kirovsk	1	0.90	0.93	0.86	0.91	0.80	0.76	0.69	0.58	0.52	0.59	0.60	0.67	0.65	0.62
town of Monchegorsk	1	1.27	1.59	1.82	1.95	2.61	2.49	2.01	2.03	1.59	1.72	1.93	1.85	1.60	1.73
town of Olenegorsk	1	1.33	1.30	1.11	1.13	1.20	0.96	1.23	1.36	1.48	1.35	1.38	0.94	1.35	1.22
town of Polyarnye Zori	1	1.00	0.81	0.83	0.94	0.80	0.96	0.87	1.24	1.01	1.21	1.20	1.27	1.22	1.19
Kolsky District	1	0.84	0.67	0.92	0.87	0.74	0.78	0.89	1.04	1.27	1.01	0.87	0.85	0.81	0.90
Kandalakshsky District	1	0.84	0.82	0.81	0.76	0.70	0.70	0.61	0.66	0.68	0.72	0.76	0.64	0.62	0.71
Lovozersky District	1	0.87	1.10	1.12	1.13	1.20	1.44	1.50	1.10	1.06	1.26	1.39	1.51	1.44	1.37
Pechengsky District	1	0.96	0.97	0.92	0.90	0.72	0.69	0.50	0.52	0.58	0.54	0.50	0.53	0.51	0.54
Tersky District	1	0.91	0.81	0.83	0.85	0.80	0.84	0.87	0.66	0.89	0.88	0.87	0.87	0.83	0.87

* Calculated with the use of official statistics data provided by the territorial office of the Federal State Statistics Service in the Murmansk Oblast. Available at: http://murmanskstat.gks.ru/wps/wcm/connect/rosstat_ts/murmanskstat/ru/statistics/

Table 8. The rating according to the relative strength index by the indicator "the number of doctors per 1,000 population, at the end of year"*

Urban district / municipal district	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
city of Murmansk	1	1.01	1.05	1.07	1.19	1.22	1.23	1.19	1.24	1.22	1.18	1.18	1.19	1.20	1.19
Kovdorsky District	1	0.99	0.99	0.96	0.88	0.95	0.88	0.88	0.77	0.83	0.84	0.82	0.05	0.05	0.84
town of Apatity	1	0.97	1.03	1.03	1.01	1.04	0.95	0.95	0.91	0.93	0.97	1.29	1.27	1.27	0.97
town of Kirovsk	1	0.98	0.97	0.98	0.98	1.00	1.00	0.84	0.86	0.91	0.90	0.06	0.15	0.15	0.90
town of Monchegorsk	1	1.02	1.09	1.13	1.09	1.00	1.02	0.98	0.89	0.93	0.91	0.93	1.14	1.13	0.91
town of Olenegorsk	1	0.99	1.01	0.97	1.01	1.05	0.99	1.07	1.29	1.41	1.10	1.07	1.11	1.10	1.10
town of Polyarnye Zori	1	1.01	1.05	1.04	1.12	1.02	1.02	0.98	0.91	1.00	1.07	1.11	1.21	1.15	1.07
Kolsky District	1	0.99	1.07	1.03	1.00	1.06	1.17	1.38	1.32	1.36	1.22	1.36	1.51	1.53	1.18
Kandalakshsky District	1	0.99	0.97	0.95	0.97	0.98	0.96	0.92	0.97	0.87	0.88	1.04	1.10	1.09	0.88
Lovozersky District	1	0.89	0.76	0.72	0.73	0.71	0.78	0.75	0.77	0.76	0.95	1.11	1.17	1.21	0.95
Pechengsky District	1	0.99	0.99	0.99	0.92	0.99	1.07	1.16	1.20	0.94	0.96	0.99	1.07	1.06	0.96
Tersky District	1	1.18	1.03	1.11	1.10	0.98	0.93	0.90	0.88	0.86	1.02	1.03	1.05	1.05	0.99

* Calculated with the use of official statistics data provided by the territorial office of the Federal State Statistics Service in the Murmansk Oblast. Available at: http://murmanskstat.gks.ru/wps/wcm/connect/rosstat_ts/murmanskstat/ru/statistics/

Table 9. The rating of the relative strength index by the indicator "the total area of residential premises on average per inhabitant, at the end of year"*

Urban district / municipal district	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
city of Murmansk	1	0.90	0.90	0.92	0.92	0.92	0.91	0.92	0.91	0.87	0.87	0.86	0.88	0.88	0.87
Kovdorsky District	1	0.94	0.94	0.96	0.96	0.96	0.97	0.98	0.98	0.96	0.96	0.97	1.02	1.02	0.99
town of Apatity	1	0.95	0.95	0.96	0.95	0.94	0.94	0.94	0.94	0.91	0.91	0.90	0.94	0.95	0.93
town of Kirovsk	1	0.96	0.96	0.97	0.97	0.96	0.96	0.94	0.93	0.93	0.93	0.91	0.95	0.95	0.94
town of Monchegorsk	1	1.00	1.00	1.01	1.01	1.01	1.00	1.00	1.00	1.01	1.00	1.00	0.99	1.00	1.00
town of Olenegorsk	1	1.00	0.99	1.00	0.97	0.97	0.96	0.96	0.92	0.92	0.95	0.94	0.94	0.93	0.95
town of Polyarnye Zori	1	0.97	0.96	0.96	0.96	0.95	0.94	0.95	0.97	0.94	0.93	0.92	0.95	0.95	0.94
Kolsky District	1	1.19	1.19	1.16	1.16	1.16	1.15	1.15	1.16	1.20	1.20	1.21	1.13	1.13	1.19
Kandalakshsky District	1	1.10	1.10	1.11	1.12	1.11	1.11	1.12	1.12	1.17	1.19	1.20	1.22	1.22	1.20
Lovozersky District	1	0.95	0.95	0.97	0.98	0.99	1.00	0.99	0.99	1.01	1.01	1.01	1.00	1.00	1.01
Pechengsky District	1	1.06	1.06	1.06	1.06	1.05	1.04	1.03	1.03	1.11	1.08	1.08	1.09	1.10	1.06
Tersky District	1	0.98	1.00	0.92	0.95	0.98	1.00	1.02	1.04	0.96	0.98	1.00	0.89	0.89	0.90

* Calculated with the use of official statistics data provided by the territorial office of the Federal State Statistics Service in the Murmansk Oblast. Available at: http://murmanskstat.gks.ru/wps/wcm/connect/rosstat_ts/murmanskstat/ru/statistics/

Table 10. Differentiation Index (Gini coefficient) according to indicators for 2001–2015*

Indicators	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Investments in fixed capital of large and medium-sized organizations per capita	0.63	0.73	0.71	0.68	0.67	0.57	0.53	0.50	0.63	0.71	0.68	0.74	0.75	0.68	0.69
Average retail trade turnover per capita	0.30	0.29	0.29	0.29	0.29	0.29	0.28	0.29	0.60	0.56	0.56	0.54	0.47	0.63	0.58
The volume of paid services per capita	0.37	0.39	0.39	0.41	0.38	0.36	0.36	0.35	0.35	0.38	0.38	0.36	0.47	0.42	0.40
Average monthly nominal accrued wage	0.32	0.30	0.31	0.29	0.27	0.27	0.29	0.28	0.28	0.29	0.28	0.28	0.26	0.26	0.27
The number of registered crimes per 1,000 population	0.27	0.31	0.34	0.33	0.37	0.35	0.36	0.33	0.29	0.30	0.28	0.27	0.26	0.26	0.27
Officially registered unemployed persons, at the end of year	0.47	0.46	0.44	0.44	0.43	0.44	0.46	0.46	0.47	0.49	0.46	0.47	0.45	0.41	0.44
The number of doctors per 1,000 population, at the end of year	0.34	0.34	0.36	0.36	0.38	0.38	0.37	0.35	0.35	0.36	0.35	0.42	0.46	0.46	0.42
The total area of residential premises on average per inhabitant, at the end of year	0.23	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.22	0.21	0.21	0.21	0.21	0.21	0.21

* Calculated with the use of official statistics data provided by the territorial office of the Federal State Statistics Service in the Murmansk Oblast. Available at: http://murmanskstat.gks.ru/wps/wcm/connect/rosstat_ts/murmanskstat/ru/statistics/

The majority of indicators that characterize the social aspect of development of the Murmansk Oblast show a slight differentiation and are continuously declining. For instance, we observe a decreasing trend in differentiation for the indicators "average monthly nominal accrued wages", "the number of registered crimes per 1,000 population"[8], "the number of officially registered unemployed at the end of year"; differentiation remains low for the indicator "the total area of residential premises on average per inhabitant, at the end of year".

[8] As a rule, this important social indicator is included in the list of indicators characterizing the quality of life. We note that we are talking about the reduction of differentiation and not about the reduction of crime rate. The involvement of the original data allows us to assert, that the number of crimes has reduced. For instance, in some municipal objects, the number of crimes increased, in others – decreased; in addition, we observe a heterogeneous pattern by each year and for each of the objects under consideration.

Table 11. Forecasting the index of differentiation (the Gini coefficient) by indicators (baseline and target scenarios)

Indicators	Baseline scenario		Target scenario	
	2016	2017	2016	2017
Investments in fixed capital of large and medium-sized organizations per capita	0.71	0.70	0.73	0.73
Average retail trade turnover per capita	0.60	0.61	0.69	0.72
The volume of paid services per capita	0.42	0.42	0.43	0.43
Average monthly nominal accrued wage	0.26	0.26	0.26	0.26
The number of registered crimes per 1,000 population	0.27	0.27	0.28	0.28
Officially registered unemployed persons at the end of year	0.41	0.42	0.40	0.40
The number of doctors per 1,000 population, at the end of year	0.47	0.48	0.47	0.48
The total area of residential premises on average per inhabitant, at the end of year	0.21	0.21	0.22	0.22

Among the social indicators only the indicator "the number of doctors per 1,000 population, at the end of year" shows a rising trend.

Indicators such as "investment in fixed capital of large and medium-sized organizations per capita", "average retail trade turnover per capita", and "the volume of paid services per capita" show a trend of growth. In addition, these very indicators in recent years show the greatest differentiation.

Thus, having considered the results of assessments with the use of a set of techniques, we can make a conclusion: there are indications that the region shows two trends – an increase in differentiation by economic performance and a reduction in differentiation by social indicators.

Forecasting the effects of the crisis on the development of differentiation of cities and districts of the Murmansk Oblast

Forecast period: 2016–2018[9]. The forecast period is due to two factors: 1) limitations of forecasting in the period of crisis; 2) our forecast uses the conditions set out in the main forecast document of the Murmansk Oblast – the Forecast of socio-economic development of the Murmansk Oblast for 2017 and the planning period of 2018 and 2019 (Appendix to the Decree of the Government of the Murmansk Oblast dated November 10, 2016 No. 551-PP).

Let us consider two scenarios of initial conditions (they correspond to the conditions of the Forecast of socio-economic development of the Murmansk oblast in 2017 and the planning period of 2018 and 2019): 1) baseline scenario; 2) target scenario[10] *(Tab. 11)*.

When the baseline scenario is implemented, it is implied that a slight differentiation of the majority of social indicators will remain, and a growing (declining) trend will not continue. The exception is the indicator "the number of doctors per 1,000 population", which is expected to increase slightly. The target scenario shows almost a similar picture on social indicators.

[9] The inclusion of the year 2016 in the forecast period is determined by the fact that the statistics are available only for 2015.

[10] We note that the Forecast for the Murmansk Oblast contains a conservative scenario that assumes a significant deterioration in the external and internal environment for the functioning of the economy. We do not consider this extreme option, because there is no reason to expect such a significant deterioration in the external and internal situation. If we consider the data of macroeconomics, we see that the socioeconomic situation in Russian Federation in 2017 is stabilizing.

In the baseline scenario it is forecast that there will be further slight growth of economic indicators of territories ("investments in fixed capital of large and medium-sized organizations per capita", "average retail trade turnover per capita", "the volume of paid services per capita"). The target scenario forecasts a somewhat greater growth of differentiation according to these indicators, especially for the indicators such as "investments in fixed capital of large and medium-sized organizations per capita".

Discussion of the problem of differentiation of cities and districts of the Murmansk Oblast from the standpoint of territorial development management

We note that our analysis demonstrates the stability of the situation concerning the differentiation between urban districts and municipal districts in the Murmansk Oblast. It means there is no reason to believe that any component of regional development can destabilize the socio-economic situation in the region. Thus, our *first recommendation* is to carry on implementing the general socio-economic policy and management practice in the socio-economic development of the Murmansk Oblast defined by specific tasks of strategic planning.

We should also note that regional differentiation trends characterize the goals of regional management as socially oriented. This is evidenced by a low differentiation and a trend of its further reduction according to indicators such as "average monthly nominal accrued wages", "the number of registered crimes per 1,000 population", "officially registered unemployed", and "the total area of residential premises on average per inhabitant". However, noteworthy is the growth of differentiation according to the indicator "the number of doctors per 1,000 population". Given the fact that a significant area of the region is located in the Arctic, and, moreover, that there is a lack of good transport links within the region, and that people's incomes are reducing (respectively, reduction of spending on disease prevention, good nutrition, etc., which determines an increase of morbidity), this trend should be considered definitely negative. Thus, our *second recommendation* is to prevent further reductions in the number of medical organizations, particularly those providing primary health care, and to provide them with equipment in accordance with the standards approved by respective regulations; to maintain and increase the number of medical personnel in most municipalities of the Murmansk Oblast.

The increasing differentiation between economic indicators of territories and indicators of economic viability of the population ("investments in fixed capital of large and medium-sized organizations per capita", "average retail trade turnover per capita", "the volume of paid services per capita") – this feature is typical of territorial entities under the modern model of the capitalist market. Therefore, it is impossible to affect differentiation fundamentally in this area; however, it is possible to adjust the situation by finding new investment projects in less developed municipalities. Thus, our *third recommendation* is to preserve the guidelines of investment development of the Murmansk oblast and further enhance regional investment measures.

The intensity of investment processes in the Murmansk Oblast is largely determined by the activity of the federal policy on development of the Arctic zone of the Russian Federation [2; 6]. Thus, our *fourth recommendation* (federal level) is to stimulate investment activity and economic growth in the Arctic zone of the Russian Federation, in particular in the Kola bearing zone, by establishing a new legal and regulatory environment that includes preferences and strategic investment.

Conclusion

Summing up, we emphasize once again the fundamental nature of socio-economic development unevenness of the space of any territorial entity. It is shown that the lack of theoretical developments in the field of regulating development unevenness determines the relevance of studying the parameters of socio-economic space differentiation, identifying trends, patterns, forecasts, and then developing practical recommendations to governing bodies to ensure balanced territorial development of the territorial entity. We put forward our own version of a comprehensive assessment of the phenomenon of socio-economic development unevenness of cities and districts of the region, in which each technique complements other ones, denies the shortcomings of other ones and provides new information. Thus, having analyzed the results of assessments according to the three techniques, we revealed not only the specifics of the object of study, but also the capabilities and limitations of the applied assessment tools: the "average by positions" rating only ranks cities and regions by a complex estimation; the rating of "relative strength" quantifies the dynamics of development of each object relative to the general group situation, the analogue of the Gini coefficient characterizes the degree of differences for each of the baseline assessment indicators. Having studied the differentiation of cities and districts of the Murmansk Oblast, we determine specific features of comparative development of these entities and for the first time to identify two steady trends – the growth of differentiation according to economic indicators and the reduction of differentiation according to the majority of social indicators. The specific features and trends that we reveal allow us to talk about socially oriented management goals and the success of management within these goals. The substantiated recommendations to management based on forecast estimates that take into account the decisive influence of the crisis processes and the identified specifics and patterns of spatial unevenness are important for making well-considered management decisions to ensure balanced development of the Murmansk Oblast.

References

1. Baranov S.V. Tekhnologii otsenki neodnorodnosti sotsial'no-ekonomicheskogo razvitiya regionov Rossiiskoi Federatsii: problemy i resheniya [Technology for assessing heterogeneity of socio-economic development in Russian regions: problems and solutions]. *Ekonomicheskaya nauka sovremennoi Rossii* [Economic science in modern Russia], 2009, no. 3, pp. 48-55. (In Russian).
2. Baranov S.V., Skuf'ina T.P. Sravnitel'naya dinamika ekonomicheskogo rosta i mezhregional'naya differentsiatsiya territorii Rossiiskogo Severa [Comparative dynamics of economic growth and regional differentiation in the territory of the Russian North]. *Voprosy statistiki* [Issues of statistics], 2015, no. 11, pp. 69-77. (In Russian).
3. Vertakova Yu.V., Klevtsova M.G., Polozhentseva Yu.S. Otsenka effektivnosti prostranstvennogo razvitiya regiona v usloviyakh polyarizatsii [Evaluating the effectiveness of spatial development of the region in conditions of polarization]. *Vestnik OrelGIET* [Bulletin of Oryol State University of Economics and Trade], 2012, no. 4 (22), pp. 20-25. (In Russian).
4. Ilyin V.A., Shabunova A.A. O nekotorykh tendentsiyakh v ekonomicheskom razvitii Rossii i regiona [Some tendencies in economic development of Russia and its regions]. *Sotsiologicheskie issledovaniya* [Sociological studies], 2015, no. 8 (376), pp. 34-41. (In Russian).
5. Leksin V.N. Regional'naya deistvitel'nost' i regional'nye issledovaniya [Reality of regions and regional research]. *Region: ekonomika i sotsiologiya* [Region: economics & sociology], 2014, no. 2 (82), pp. 7-38. (In Russian).
6. Leksin V.N., Porfir'ev B.N. Metodologicheskie osnovy sistemnoi diagnostiki slozhivsheisya situatsii i problem v Arkticheskoi zone Rossii [Methodological basis for a system diagnostics of the current situation and problems

in the Arctic zone of Russia]. *Kontury global'nykh transformatsii: politika, ekonomika, parvo* [Contours of global transformations: politics, economy, law], 2015, vol. 8, no. 2 (40), pp. 47-59. (In Russian).

7. Nikolaev I.A., Tochilkina O.S. *Ekonomicheskaya differentsiatsiya regionov: otsenki, dinamika, sravneniya. Analiticheskii doklad* [Economic differentiation of regions: estimations, dynamics, comparisons. Analytical report]. Moscow: FBK, 2011. 28 p. (In Russian).
8. Proidakova V.E. Osobennosti razvitiya gosudarstvennogo regulirovaniya mezhregional'noi ekonomicheskoi differentsiatsii v Yuzhnom federal'nom okruge [Features of state regulation of inter-regional economic differentiation in the South Federal District]. *Regional'naya ekonomika: teoriya i praktika* [Regional Economics: Theory and Practice], 2013, no. 15, pp.9-13. (In Russian).
9. Risin I.E., Treshchevskii Yu.I. Upravlenie izmeneniyami i protivorechiyami v sotsial'no-ekonomicheskikh sistemakh [Management of changes and contradictions in socio-economic systems]. *Vestnik Voronezhskogo gosudarstvennogo universiteta. Seriya: Ekonomika i upravlenie* [Bulletin of Voronezh State University. Series: economics and management], 2003, no. 1, pp. 76-82. (In Russian).
10. Savon D.Yu. Organizatsionno-ekonomicheskii mekhanizm ustoichivogo razvitiya ekonomiki yuzhnogo regiona [Organizational and economic mechanism of sustainable economic development in the southern region]. *Sovremennaya ekonomicheskaya mysl'* [Modern economic thought], 2013, no. 1, pp. 26-31. (In Russian).
11. Samarina V.P. Otsenka neravnomernosti sotsial'no-ekonomicheskogo razvitiya sub»ektov Tsentral'no-Chernozemnogo ekonomicheskogo raiona [Evaluation of uneven socio-economic development in the Central Chernozem economic region]. *Regional'naya ekonomika: teoriya i praktika* [Regional Economics: Theory and Practice], 2008, no. 8, pp. 33-38. (In Russian).
12. Samarina V.P., Illarionova E.A. Osnovnye printsipy vybora instrumentariya analiza sotsial'no-ekonomicheskogo razvitiya regiona [Basic principles for choosing tools to analyze socio-economic development in the region]. *Region: sistemy, ekonomika, upravlenie* [Region: systems, economy, management], 2015, no. 1 (28), pp. 83-85. (In Russian).
13. Samarina V.P. Analiz problem regional'nogo razvitiya primenitel'no k tipam regionov [The analysis of problems of regional development concerning the types of regions]. *Regional'naya ekonomika: teoriya i praktika* [Regional Economics: Theory and Practice], 2010, no. 42, pp. 13-20. (In Russian).
14. Suspitsyn S.A. Barometry obshchego regional'nogo polozheniya [Barometers of a common regional situation]. *Problemy prognozirovaniya* [Studies on Russian economic development], 2005, no. 2, pp. 99-101. (In Russian).
15. Uskova T.V. Prostranstvennoe razvitie territorii: sostoyanie, tendentsii, puti snizheniya riskov [Spatial development of territories: state, trends, ways of reducing risks]. *Problemy razvitiya territorii* [Problems of territory's development], 2015, no. 1 (75), pp. 7-15. (In Russian). (In Russian).
16. Azizian R., Bainazarova E. Eurasian response to China's rise: Russia and Kazakhstan in search of optimal China policy. *Asian Politics & Policy,* 2012, vol. 4, no. 3, pp. 377-399.
17. Baranov S., Skufina T., Samarina V., Shatalova T. Dynamics of interregional differentiation in Russian regions based on the level of development of information and communication technologies. *Mediterranean Journal of Social Sciences,* 2015, vol. 6, no. 6, pp.384-389.
18. Benesova I. Regional Cooperation of the Post Soviet Countries–Can it Be Influenced by the Structure of the Economy? *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis,* 2016, vol. 1, no. 6, pp. 1843-1856.
19. Blaug M. *Economic Theory in Retrospect. 5th Edition.* Cambridge University Press, 1997. P. 659.
20. Coulibaly S. Regional integration and the persistent uneven spread of economic activities in developing areas. *Economie international,* 2006, no. 2, pp. 5-23.
21. Fasten E.R. *On the Sustainability of Sub-national Government Finance-A Panel Data Approach.* Department of Economics and Management, Humboldt University, Berlin. 2008. P. 27.
22. Leksin V.N. Regional reality and regional studies. *Regional Research of Russia,* 2015, vol. 5, no. 2, pp. 97-108.
23. Leonardi R. Have Regions Converged? Sigma and Beta Convergence in Objective 1 and Other EU Regions between 1988 and 1999. *Cohesion Policy in the European Union*. Palgrave Macmillan UK, 2005. Pp. 89-106.
24. Viegas M., Antunes M. Convergence in Spanish and Portuguese NUTS 3 Regions: exploratory spatial approach. *Intereconomics,* 2013, vol. 48, no. 1, p. 59.

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