Monitoring methodology for socio-economic development of a region (through the example of the South of Russia regions)

1. Introduction

The current stage of spatial economy development is characterized by the intensification of interregional and interterritorial integration processes both in economic and social spheres. It requires continuous diagnostics of mesoeconomic environment to identify structural imbalances in the development of individual sectors, asymmetry in the functioning of the individual territories and the extent of their participation in the formation of the gross regional product. In addition, the major issue of modern spatial economics is the comparison of the level and quality of population life in certain territories and its accordance with the level of development of those territories economy, which is a key issue not only for governmental institutions, but also for public ones.

Improvement of managerial decision-making mechanisms at the regional level should be done by means of the methodical approaches optimization to the full system-related, qualitative monitoring of socio-economic development of the region, meeting the demands of all interested users.

The leading role of monitoring is that it contributes to the development of relevant information for the implementation of the complex task of development programs in the region, establishing interaction of the Federal Center and the territorial authorities, strengthening of common economic space of the country and withdrawal of its bailout.

2. Methodology

2.1 General provisions of authors' methodological approach

Large-scale socio-economic and geopolitical transformations in Russia and unstable, multidirectional character of regional economic dynamics processes determine the need to find original and innovative approaches to the organization of economic area at the level of entities (Gerasimov A.N., Y.I. Gromov S.A. Levchenko O.P. 2014); (Erlander S. 1980).

General provisions of authors' research are based on theoretical concepts presented in the works of Russian and foreign researchers in the field of regional economics (Gerasimov A.N., Gromov E.I., Gulay T.A. 2015); (A.N. Gerasimov, Gromov Y.I., Skripinchenko Y.S. 2015); (Bobryshev A.N., Golchenko Y.V., Kazakov M.Y. 2014); (Elchaninova O.V., Tatarnikova, M.N. Grishanova S.V. Germanova, V.S., Debeliy R.V. 2014); (Evans, N., Morris, C., Winter, M. 2002); (Taranova I.V., Gunko A.U., Alekseeva O.A., Bunchikov O.N., Kurennaya V.V. 2015); (Eswaran M. Kotwal, A. 1986); (Brakman, S., Garretsen, H., Gorter, J., van der Horst, A., Schramm, M. 2005); (Garretsen, H., Martin, R. (2010); (Davis, D.R., Weinstein, D.E. 1999); (Capello, R. 2006); (Parent, P., Mayer, T. 2005); (Hanson, G. 2005); (Ersy, A., Taylor, J. 2007).
3. Results

3.1 Formation of the conceptual model for monitoring of socio-economic development.

The research considered critical views, positions, and the concepts of leading scientists and specialists in the field of spatial economics (Uglitskikh, O.N., 2013; Klishina, J.E., 2013; Gurnovitch T., 2013; Aldashev, G., Limardi, M., Verdier, T., 2015; Shatalova, O., 2012; Zaitsev V.K., Kurennaya, V.V., 2013; Hanson G., 2005; Trukhachev V. I., Kostyukova, E. I., Gromov E. I., Gerasimov A.N., 2014). The authors have noted that the region, acting as a monitoring object and at the same time as a zone of informational interaction, determines specific features of monitoring procedures. In this connection, the authors have theoretically justified and proposed a conceptual model for monitoring of socio-economic development of the region (Figure 1). It has been formed on the basis of the complex of interrelated core components selection and structuring: functions, monitoring objects, implementation requirements and key targets, which have been built on the principle of commitment to the most relevant information for decision making of tactical and strategic nature in the field of public regional management.

The authors consider the monitoring system as totality of regularly recurring analytical and diagnostic actions on development of necessary information base for economic processes management in the region with a view to improve the standard of living and quality of life of the territories inhabitants.

The research has found that for different categories of users of information retrieved through the monitoring, the goals will differ substantially because they have different and sometimes opposite needs and requirements to the nature of the information received. This pattern is also noted in the works: (Bobryshev A.N., Yakovenko V.S., Tunin S.A., Germanova V.S., Glushko A. Ya., 2015), (Bobryshev A.N. et al., 2015), (Litvin D.B., 2015). It is important to highlight that, in accordance with the presence of several groups of target audience, using the results of the socio-economic development monitoring of the region, not only targets, but also the conduction mechanism will be differentiated.

Figure 1 - Conceptual model for the socio-economic development of the region monitoring

3.2 Identification of the degree of differentiation of the regions in the South of Russia according to socio-economic development.

Taking this into account, the imperatives of regional development should be aimed at overcoming of asynchrony of individual territories, their economic, social and institutional contradictions. The regional transformation of the content, forms, extent and nature of activity sectors, units and sub complexes contributes to the consolidated implementation of national interests of Russia, both in economic area of the country and in globalizing world. This has led to the development of methodological approach to the evaluation of spatial differentiation of regions by the level of socio-economic development using multivariate statistical analysis as a tool for processing the information obtained from monitoring of regions in the South of Russia, and profiles of their
In the course of the study, proposed and implemented methodological procedures were included into the developed methodical approach of assessing the spatial differentiation of the regions on the level of socio-economic development of the regions.

Implementation of this approach provides consistent study of the parameters of social and economic development of the regions, on the basis of which the profiles of competitive advantages have been built by the authors as a result of a multidimensional ranking of the regions according to 24 essential social and economic parameters. The authors have relied on this methodological solutions on the basis of temporal understanding of the need of linkages between timeliness monitoring and conducting interregional comparisons that ultimately allows not only to diagnose the current state of the region, but also to identify structural imbalances of endo-territorial parameters of socio-economic development, through the provision of "inefficiency points" on the parameters and industries which are the "engines of growth".

Thereat the first rank is assigned to their best values (Table 1). By calculating the amount of ranking on all the indicators, there is an opportunity to establish ranking of regions according to their level of development.

<table>
<thead>
<tr>
<th>Factors of economic and social development of the region</th>
<th>Krasnodar Krai</th>
<th>Rostov Region</th>
<th>Volgograd Region</th>
<th>Stavropol Krai</th>
<th>Astrakhan Region</th>
<th>Republic of Dagestan</th>
<th>Republic of Adygeya</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Unemployment level</td>
<td>1</td>
<td>3</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>1.2 Employment requirement</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>1.3 Volume of GRP</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>1.4 Capital formation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>6</td>
<td>4</td>
<td>10</td>
</tr>
</tbody>
</table>

The amount of ranking

|        | 18 | 37 | 49 | 53 | 56 | 79 | 115 |

Rank of the region

| Rank of the region | 1   | 2   | 3   | 4   | 5   | 6   | 10  |

The amount of ranking

| The amount of ranking | 42 | 50 | 65 | 62 | 72 | 55 | 86  |

Rank of the region

| Rank of the region | 1   | 2   | 5   | 4   | 6   | 3   | 9   |

Taking into account the two-dimensional nature of the monitored parameters of the regions, the indicators of economy development were laid over the ranking results on indicators of living standards and the quality of life of the population with a consequent drawing up of profiles to get a holistic picture of their differentiation ranking. Next, the authors have defined thresholds for ranking the regions by typological groups. Interval restrictions for groups have been obtained by determining the minimum and maximum of possible amount of ranking along the parameters marked by the authors. Then the step interval has been defined and the number of typological groups has been justified. Thereat we proceeded from understanding that the highlighting of less developed regions has high set of "competitive advantage profile", but there are some "spikes", i.e. deviations from the leading positions on the parameters of social and economic development among other regions. Upon that developed economy allows improving the social sphere on unsubsidized basis.

In order to assess the degree of differentiation between regions in levels of socio-economic development and their ranking on opposite zones, we have applied classification model, which has given economic interpretation and linguistic characteristics of obtained interval groups.

<table>
<thead>
<tr>
<th>Interval values of typological groups</th>
<th>The name of the typological group</th>
<th>Linguistic characteristics of economic interpretation of typological group</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>From 0 up to 31.2</td>
<td>maximum developed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>It is characterized by favorable institutional conditions for creating profiles of economic benefits in the region, resulting in sustainable development of social sphere. Development of the regions of this group is balanced and has leading positions in all socio-economic parameters. The level and quality of life are the most attractive, and the economy is greatly diversified.</td>
</tr>
<tr>
<td>II</td>
<td>From 31.2 up to 62.4</td>
<td>developed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>There are some deviations in the direction of economic/social parameters. The resources are used slightly unequally. The regions have high set of &quot;competitive advantage profile&quot;, but there are some &quot;spikes&quot;, i.e. deviations from the leading positions on the parameters of social and economic development among other regions. Upon that developed economy allows improving the social sphere on unsubsidized basis.</td>
</tr>
<tr>
<td></td>
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<td>There is mono orientation in economic development within the framework</td>
</tr>
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</table>
4. Discussion

General discussion in scientific and expert community of regional economies and their correlation with the results of studies (Fujita Masahisa, Paul Krugman, Anthony J. Venables 1999), (Searle J.R. 2005) (Mary E. Edwards 2007); (Yarkova T.M., Svetlakov A.G. 2013); (Harre Garretsen, Ron Martin 2010); (Head, K., and T. Mayer. 2004) are consistent with the obtained results. The results of this research can be used by regional authorities in improving the system of monitoring socio-economic development of the territories and the effectiveness of strategic programs of the region development, which confirms the high practical orientation of the research results.

5. Conclusion

This research has made it possible to identify 8 regularities and determinants of development of the regions in the South of Russia, hypotheses confirmed by extensive empirical and factual material and described in details. Let us consider the main ones:

1. There is a great demand for workers in the regions, which are the leaders on the level of economic development. So 6 regions which are ranked first on the parameters of economic development, similarly ranked high on indicators of demand for labor force, despite the high percentage of employment of the population, while in the regions with a large number of identified "points of inefficiency" the demand for employees is significantly lower;
2. Among the regions of the South of Russia there has been a significant differentiation of territories in socio-economic development, with the dominance of economic differentiation higher than in the social sphere, so the difference between the regions which are the "engines of growth" of southern Russia and regions with a large number of "points of inefficiency" (lagging regions) is 74 points, while the indicators of economic activity has 122 points.
3. In general, the indicators of social well-being of the territory depends on the level of economic development, however, the research has shown that the gap between lagging regions and regions-leaders in the social sphere is lower than in economic one. This regularity is determined by the fact that the basic social benefits provided to the population of some regions of the South of Russia is not on the earnings of real sector of economy, but on the subsidy of their budgets. Thus, the development of the social sphere is less dependent on income taxes than in other regions and there is a greater dependence on federal transfers.
4. The following regions have been highlighted as the regions with the dominance of economic profile of competitive advantages: Krasnodar Krai, Rostov Region, Stavropol Krai, Volgograd and Astrakhan Regions, in other regions there is a dominance of social profile development. Thus the most asymmetric development has been observed in the Republic of North Ossetia-Alania, the other regions deviate from a symmetric line development to a greater or lesser extent.

References
