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Regional socio-economic development on the basis of scenario forecasting method

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Abstract

This paper offers a comprehensive predictive study of socio-economic development of the region. The study is based on comparative assessment and analysis of the proposed forecast midterm scenarios. The grouping of indicators system formed by the type of impact on life quality of population in the region has been carried out to construct the forecast scenarios of development in ordinal scales. Analysis of forecast scenarios of Tatarstan territorial development for the period up to 2020 showed a moderately optimistic scenario as the most likely one.

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1. Introduction

The selection of forecast horizon is connected with the need of both quantitative and qualitative assessments allowing the construction of the forecast scenarios for territorial development of the given socio-economic system of region.

Based on these substantive reasons, the forecast horizon of the study comprised 5 years (until 2020). The statistical basis for the forecast served the official data base of the Territorial Department of the Federal State Statistics Service in the Republic of Tatarstan for the period from 2002 to 2014.

Monitoring study period was divided into two time periods: from 2002 to 2008; from 2009 to 2014, due to the fact that the year 2008 became a year of fundamental changes in the overall trends of Russia and its regions socio-economic development.

We will classify the system of population life quality in the region as to the following features since the object of the forecast research is determined not only by the studied time horizon:

as to the nature of the object under study the forecasting system is determined in the socio-economic class; as to the magnitude – in the class of sub-global systems (which uses from 15 to 35 variables); as to complexity – in the group of complex systems, as the interconnections and the combined influence of variables are taken into account to

1

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adequately describe the object; as to the determinacy degree - in the class of mixed objects with characteristics of both deterministic and stochastic nature.

2. Methodology

Integrated predictive study of the socio-economic development in the region (by the example of territorial differentiation of the population life quality in the Republic of Tatarstan) is based on a comparative assessment and analysis of the offered forecast scenarios for the medium term.

Coordination of the life quality and the development of territorial socio-economic system of the region as a whole, supposes the use of instrumental and methodological approaches adapted to the specifics of a multi-ethnic region, which will be oriented at the monitoring and forecasting of territorial differentiation of life quality.

Analysis and methodological approaches to the monitoring and forecasting life quality studies of the region and its territorial differentiation showed, that the most appropriate and adequate approach is the combination of the logical modeling (including the development of forecast scenarios), mathematical and statistical, and expert assessment methods.

This paper offers a mathematical - statistical method (indexical method) modified by the author for monitoring and forecasting of territorial differentiation of life quality of population in the region with consideration of the regional characteristics offered by the author in respect of the indexes change characterizing life quality degree, depending on the scenarios for development options. We also provide the method of expert estimation adaptable for the purposes of the regional forecasting based on a questionnaire.

The formed system of indicators grouping has been carried out by the type of impact on life quality of population in the region for assessment of the life quality of population and its territorial differentiation, as well as further construction of forecast scenarios of development in ordinal scales. Herewith, the first group of indicators shall include those connected with the analyzed integral feature of the life quality by monotonically-increasing dependence (i.e., the greater value of the index, the higher is the quality).

If the indicators are connected to the analyzed integral feature of the life quality by monotonically decreasing dependence (i.e., the greater value of the index, the lower is the quality), then we relate it to the second group.

Finally, if the studied system indicator is connected with the analyzed integral feature of the life quality by non-monotonic dependence (i.e., if there is an optimal value, at which the highest quality is achieved), this index shall belong to the third group.

Table 1 presents the intra-regional level indicators grouping into three groups. The first one includes indicators negatively affecting the general indicator of the population life quality, the second - affecting positively, the third - affecting ambiguously (neutral ones).

The forecasting methodology of territorial differentiation of population life quality in the Republic of Tatarstan offered in the paper includes the following sequence of stages:

Stage I. Pre- forecast investigation:

- 1) Development of a comprehensive system of «Population life quality in the region»: the selection of priority components and preparation of hierarchical system of characteristics and indexes;
- 2) retrospective analysis of life quality of the Republic of Tatarstan population from the processes of territorial development perspective.

Table 1. Grouping of indicators system by the types of the life quality of population affecting in the Republic of Tatarstan

<p>group I («Positively affecting indicators »)</p>	<p>Daytime educational institutions (per 1000 pupils). Number of teachers in daytime general education institutions (per 1,000 pupils). Provision of population with home telephones of urban and rural public network) (per 100 families pieces). The average size of contributions to the state and commercial banks per capita (at the end of the year; rubles). Average monthly wage of employees in the economy (rubles). Total area of housing provision for population (square meters per inhabitant). Housing commissioning from all sources of financing (sq m).</p>
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