Conception of Life Quality Estimation of the Municipal Territories in the Context of National Project Implementation

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Abstract

This study presents an approach to life quality estimation in different areas of Russia in the context of national project implementation. Methods for life quality estimation in municipal territories are suggested. Emphasis is made on the comprehensive assessment of the results of the national project implementation and identification of problematic areas in the economy and social sphere of each territory. The necessity in such research arises from the vital need to solve strategic and tactical management tasks both at the municipal and regional levels.

Keywords

Living standards, national projects, integral estimation methods, Internet platform

1. Introduction

The creation of new methods of management support based on the comprehensive assessment of the dynamics of the territory development by setting up ratings is required because the conditions of the socio-economic management policy are changing in different countries. In Russia, national projects are used as a tool of state management providing breakthrough development of the country in science, technology, economy and social sphere. In order to adopt national projects for territories, it is necessary to discriminate the measures of these projects considering the specific of each municipal district at the development stage of regional programs. Also, it is necessary to reveal problematic and prospective directions of the territory development, allowing the launch of new measures of the national projects.

In this article, we suggest a conceptual justification of tools for estimating the life quality target indicators in municipal territories based on the study of the structural characteristics and specific of the implementation of the national and regional projects. These tools include a technique and an Internet platform for setting up ratings for the life quality estimation in the municipal territories in the context of the national project implementation. The main goals are monitoring the influence of the national projects on the living standards and improvement of the management efficiency in the municipal territories of the region via the identification of problematic and prospective areas of the economy and social sphere.

2. Problem of the life quality assessment

The problem of the life quality assessment has attracted the attention of many researchers for more than 40 years. Depending on the tasks being solved, the concept of the "life quality" is defined and estimated in different ways: it can be done with regard to different aspects of human activity, environment conditions and living conditions, as well as with respect to specific communities, territories and countries in general.

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A large number of studies in different countries are dedicated to the analysis of the quality of people's life with regard to a particular disease [1]. Scientists use statistical methods and social surveys to identify factors influencing the process of patient treatment management and decision making for the healthcare modernization. Nowadays, COVID-19 pandemic impact studies are especially important [2].

In different countries, life quality is estimated in view of local specific, climate and geodetic conditions. For instance, Japan is famous for its earthquakes. Japanese re-searchers create a quality of life index (QOLI) and estimate earthquake risk costs in cities and districts of the country [3]. The calculation shows that the risk of earth-quakes significantly affects the general life quality in the prefectures of Japan. There are big differences between a city and a district with regard to the earthquake risk cost.

The Life Quality Index as a comprehensive indicator which measures the achievements of countries and districts in terms of how they can provide their population well-being, is calculated by the method developed by the British research center The Economist Intelligence Unit. The method is based on the combination of statisti-cal data and results of public surveys since 2005. The index is formed on the basis of the statistical analysis of nine key indicators reflecting different aspects of people's life quality [4].

The specialists of the AARP USA State Politics Institute regularly report on the life quality assessment indices [5]. They created the method of life quality calculation which provides decision making support for management in terms of development and modernization of social infrastructure.

For the comparison analysis of the level of the stable development of the European Union, the method of multidimensional scaling is used [6]. The study is based on the data collected in a database which is used by the European Committee for monitoring the goal achievement of the EU Stable Development Strategy.

There are global web-portals for public surveys and life quality data collection [7]. Researchers use different methods to analyze life quality indicators published on this portal. For example, they used the methods of stochastic analysis for rating countries on the basis of a single composite index uniting all the indicators of the life quality assessment. This method shows which indicators help the overall improvement of the measured well-being, and which of them hinder it [8].

The studies of the life quality analysis are also conducted in Russia. The Central Institute of Economics and Mathematics of the Russian Academy of Science suggests a technology for studying the integral indicators of people's life quality and provides methods of their building and application in the social and economic management and for their interregional comparison [9].

Russian researchers perform studies and calculations using the integral life quality index (LQI). The conclusions on the specific of life quality in different countries are made on the basis of cluster and factorial analysis of this index and its indicators. The situation with the life quality in the BRICS countries is specifically considered and then, recommendations on the life quality improvement in these countries are formulated [10].

Lately, in Russia, the information on the life quality of population has highly been requested not only by the regions but also by the municipal territories for the purpose of in-time management decision making and reduction of differences between the territories. On the basis of certain indicators reflecting income and employment of people, the methods of life quality assessment are created. The indicators using municipal statistics for calculating the integral index with further rating are specified [11].

In this article we present a study devoted to the analysis of life quality in the municipal territories of the region. At the same time, the possibilities of monitoring the impact of the results of the national project implementation on individual territories are considered.

3. Objectives of analyzing life quality in the context of national projects

Russia uses national projects as tools of the state administration providing breakthrough scientific and social development of the country. The current national projects are developed by the government based on the Order of the President of the Russian Federation dated 07.05.2018 No. 204 "On national goals and strategic objectives of the development of the Russian Federation for the period up to

2024". At present, 13 projects are grouped in three directions: "Life quality"; "Comfortable environment", and "Economic growth". Each national project includes 3 to 10 Federal projects covering all the key directions of the economy and social sphere. At the regional level, the target indicators and the results are brought together in the form of the regional projects or programs.

The key target indicators of the national projects include the reduction of the population mortality at the working-age down to 350 incidents per 100 thousand people; entrance of Russia in top 10 countries by the quality of general education; creation of 450 outpatient cancer care centers; implementation of the medical care quality control system in 750 medical care organizations; increase of the capacity of general education organizations by 230 thousand students; creation of a material and technical base for implementing the main and additional general education programs in no less than 12 thousand schools located in rural areas and small towns; increase of the amount of residential construction up to no less than 120 million square meters per year, etc. Federal and regional projects specify details of the main indicators in each direction.

The Order of the President of the Russian Federation dated 21.07.2020 No. 474 "National goals of development of the Russian Federation until 2030" specifies national goals of the development for the nearest decade. They include: a) preservation of population, human health and well-being; b) opportunities for self-realization and talent development; c) safe and comfortable living environment; d) decent and effective work and successful entrepreneurship; e) digital transformation. The implementation of the national projects should lead to the achievement of the national goals and, as a final result, to the human life quality improvement.

The clarity of the national goals, lines of development and specific target indicators allows one to expect the planned activities to be completed in time. Nevertheless, there appear numerous tasks which need to be solved. Nationwide, the goals are specified, and the methods allowing the formation of regional projects with specific measures based on the national ones are created, but at the level of the municipal territories there are still no methods to be used for this purpose, as they are at the stage of development at present. For example, Figure 1 (a and b) shows the geography of the implementation of the national projects in the Krasnoyarsk Region in 2020.

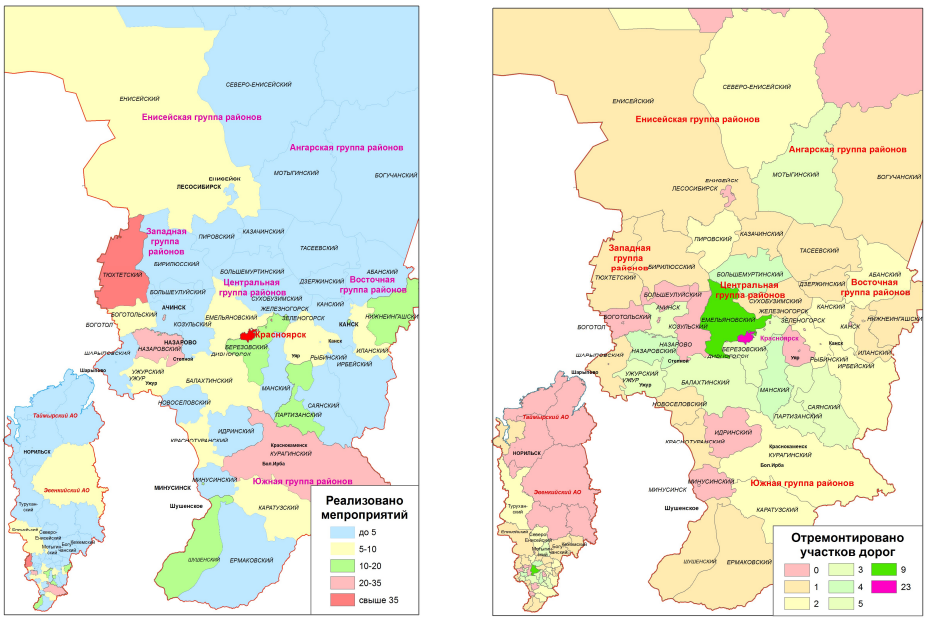

Figure 1: a) The number of the regional projects implemented in 2020. b) The implementation of the project "Safe and quality roads" in 2020

It is clear that even if the implementation of the national projects influences the quality of human life in certain areas, this influence is mostly indirect, and it appears on the regional scale in general. In order to bring the activities of the national projects to specific territories, it is necessary to discriminate them considering the specific of each municipal area.

Let us consider a few more points. The target indicators of national projects and the results of the implementation of regional programs should be considered only as the landmarks for choosing the system of life quality indicators. There is no unambiguous correlation between them. This is an objective difficulty which sets the task of correlation of these two systems of indicators: the system of the target indicators of the national projects (or the national goals) and the system of the life quality indicators.

There is another difficulty which is related to the identification of sources of collecting the basic data for the comprehensive assessment. At present, two main sources are used: statistical monitoring data and data acquired as a result of public surveys. In order to estimate the influence of the national project implementation on life quality in municipal territories, it is preferable to use objective statistical data. However, the state system of statistical reporting, due to certain inertness, does not always have time to respond to modern trends of the territory development.

The authors suggest a solution for some of these tasks by the creation of a tool-set as part of the method and an Internet platform in order to create life quality ratings in the municipal territories in the context of the national project implementation.

4. Suggested approaches and methods

As a result of the research of structural characteristics and features of the implementation of the regional programs and activities of the national projects, we provided a conceptual justification of the tool-set for evaluating the achievement of the life quality target indicators, determined the specific characteristics of the method for its rating and developed a hierarchical system of the indicators.

The life quality indicators are grouped into three blocks corresponding to the directions of the national project. Currently, the structure of the basic indicators of each block is already developed. For example, the block "Health care" includes indicators characterizing the amount of medical care, sufficiency of doctors and secondary medical personnel, number of patients with the first-time diagnosed circulatory system diseases, malignant formations, drug-related diseases morbidity, number of disabled people, etc. The block "Ecology" includes indicators characterizing the amount of water usage from the natural sources, amount of polluted wastewater discharge, amount of the air pollutant discharge, amount of production and consumption wastes, etc. Overall, the hierarchical system includes more than 70 basic indicators. In the process of developing the system of the life quality indicators, we considered the national goals and target indicators of the national and regional projects. It should be noted that for different regions the system of indicators may be different because not all of the national projects can be realized at the regional level due to the specific of the regions. Our system of the life quality indicators is built on the basis of a detailed analysis of specifications, target indicators and planned results of the regional projects in the areas of Krasnoyarsk.

We suggest a method for rating in terms of life quality in the municipal territories in the context of the national project implementation. The method is a development of our earlier created index method for social well-being assessment of the territories and method of the comprehensive assessment of natural and anthropogenic safety of the territories [12, 13]. The solution is based on hybridization of the technology of operational analytical processing of multidimensional data and methods for creating comprehensive indicators. As part of the technology, the methods of life quality integral assessment in the municipal territories and territory-oriented normative model building are being developed.

The life quality integral assessment method provides the creation of a comprehensive indicator based on the rating hierarchy of the analytical indicators considering their mutual influence and possibility of qualitative interpretation. The hierarchical structure allows determining primary reasons for the current condition and detection of problematic areas in the economic and social development of the territories. We suggest the main principles of the comprehensive assessment based on the territory-oriented normative model and provide a calculation algorithm for integral rating.

The territory-oriented model building method provides the specification of the rating criteria, and principle of the rating generalization and scales for their interpretation with regard to the specific of the territories. The normative model is developed based on the results of the social, economic and physical-geographical characteristics of the territories, expert knowledge and results of analysis using the technology of multi-dimensional modeling of complex objects [14]. The method of building a

territorially-oriented regulatory model is necessary to form the rating assessments of life quality in the municipal territories and describes the "desired" level of life quality, taking into account individual characteristics of the territories.

In order to test the methods, we assessed the life quality in the municipal territories of the Krasnoyarsk Region (Figure 2).

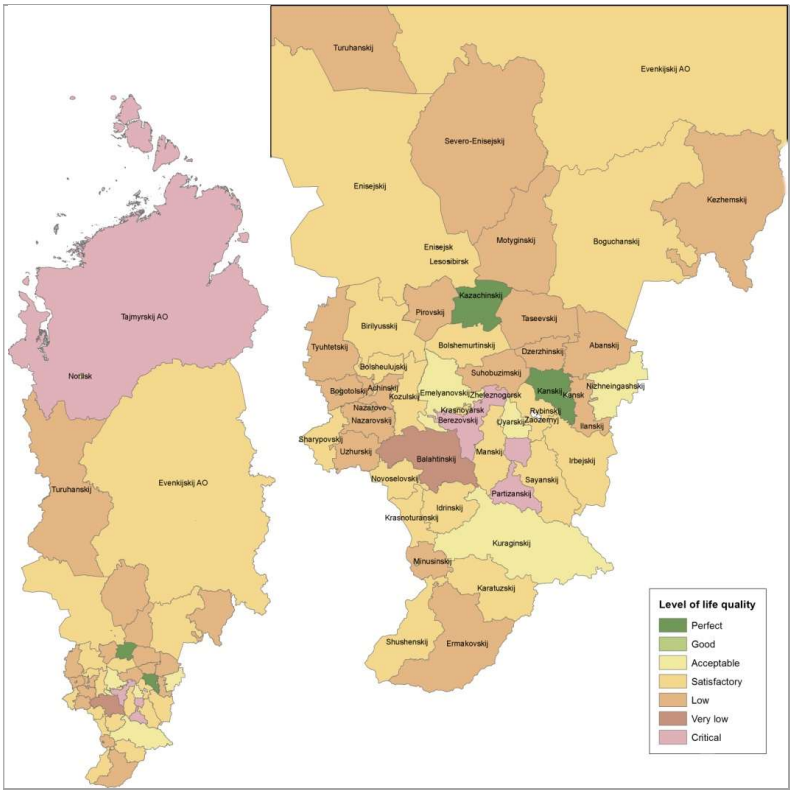

Figure 2: The results of the life quality assessment in the municipal territories of the Krasnoyarsk region in 2019

Most of the territories of the Krasnoyarsk region demonstrate satisfactory and low level of life quality, 22 and 18 municipal districts, correspondently. The highest ratings correspond to the Kazachinsky and Kansky municipal districts, performing high in "Safe and quality car roads" and "Ecology". The worst level of life quality is demonstrated in the Berezovsky and Partizansky districts as well as the Taimyr municipal district due to worse rating in "Ecology".

As the next step, it is planned to develop a software implementation of the rating methods in the form of an Internet platform based on the own software environment for creating model-oriented systems for collecting data and analysis [15]. The application of the technologies of infographic modeling and dynamic mapping for visualization of the initial data of the target indicators and calculated ratings will allow one to create a convenient tool for the analysis. In order to test the method and the Internet platform, a normative model will be created to assess life quality in the municipal territories of the Krasnoyarsk region. The analysis of changes in the values of rating indicators in the process of the implementation of national projects will reveal the growth points and problematic areas in the economy and social development of the territories.

5. Conclusion

As a result of the study of structural characteristics and features of the regional and national project implementation we formulated a conceptual justification of a tool-set for estimating the achievement of the life quality target indicators in the municipal territories. A hierarchical system of indicators was also developed. During the development of the system of indicators the authors considered the

national goals and target indicators of the national and regional projects. The original methods of comprehensive assessment for the comparison analysis of life quality in the municipal territories in the context of the national project implementation were suggested. It is planned to create a software based on the own Internet platform which will allow the municipal and regional authorities to apply the obtained results in, and it will also be useful for scientific research. It is planned to test the tools in estimating life quality in the municipal territories of the Krasnoyarsk region.

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7. References

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