



# Forecasting Selected Parameters of Sustainable Social and Economic Development of the Region for the Purposes of Infrastructure Innovation Design

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**Abstract:** In the context of growing social and economic differences, the issues of developing adequate and well-grounded management decisions in the regions regarding infrastructure transformations are of particular importance. Taking this into account, the importance of forecasting the parameters of social and economic development increases. In this paper, the authors substantiate the forecast of selected social and economic indicators from the perspective of promising infrastructure innovations. It is shown that by now a number of accumulated problems in the field of regional infrastructure provision have accumulated, it is possible to solve them only through complex management decisions. The obtained forecast estimates of individual parameters of the social and economic sphere of the model region will contribute to the development of a more adequate social and economic policy of infrastructure innovations. The empirical forecast estimates obtained in the work can be useful to regional management authorities and research teams, as well as individual researchers when conducting similar research.


## 1 INTRODUCTION

The current stage of the spatial and territorial development of the Russian Federation in the context of setting “the tasks of breakthrough development of the social, economic and scientific and technological nature” is characterized by a significant increase in attention to strategic transformations to ensure the achievement of specific indicators of the social and economic dynamics of individual territories and the entire Russian Federation. We emphasize that out of the 9 “national goals of the Russian Federation development for the period up to 2024” 6 belong to social and economic goals, associated with an increase in income and quality of life, as well as the demographic situation improvement. The process of renewal and development of social infrastructure, as a central and necessary factor in improving the quality of life of the rural and urban population, plays an essential role in achieving the objectives.

Actual regional aspects of the quality of life of the population growth of the territories are presented in the works of Afonosova, M.A. (Afonosova, M.A., 2018), Balobanov, A.E. and Golubev, S.V. (Balobanov, A.E., Golubev, S.V., 2012), Klimenko, O.I. and Botalova, M.E. (Klimenko, O.I., Botalova, M.E., 2019), Vavilina, N.D. (Vavilina, 2013), Galitskaya, V.A. (Galitskaya V.A., 2018), Degil, O.V. (Degil, O.V., 2012), Heffteran, M.H. (Hefferan M. Fern A., 2018).

According to Afonosova, M.A. (Afonosova, M.A., 2018), who considered the prospects for the quality of life growth in rural areas of certain regions, at present, the strategic direction of the balanced spatial and territorial development of peripheral territories is the growth of infrastructure provision of the population in terms of education and health services, which, according to the author will contribute to an increase in the quality of human capital and rational use of resource and economic opportunities. Agreeing with this, in fact, axiomatic statement, we note that one of the problems of the

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modern regional economy is the assessment of the national economic efficiency of infrastructure investments, the investment needs of which sharply exceed regional and municipal capacities, but do not have a short-term return.

Balobanov, A.E. and Golubev, S.V. (Balobanov, A.E., Golubev, S.V., 2012) made an original attempt to consider the category of quality of life in the context of one of the essential resources of municipal development, trying to substantiate the existence and significance of the relationship between the quality of life and human potential in specific municipal associations - cities.

At the same time, the "quality of life" category and attempts to adapt it in the regional economy terminology as an independent research and methodological pole is today at the stage of scientific research, weakly connected with real subjects, processes and specific national economic significance for the economy of locations and regions, and also cannot be considered independently, without infrastructure equipment of the territories (Wetwito J.J., Kato H., 2017), (Oomura I., Yamashita N., Tanoue H., Jorinbou I., 2017), (Alberio M., Sousa J., 2020), (Kozma, D.E., 2019), (Marques T.S., Saraiva M., Santinha G., Guerra M., 2018), (Matz Dahlberg I. B., 2020), (Busquet G., 2011), (Glass M.R., Addie J.-P. D., Nelles J., 2019).

V. S. Antonyuk as a team member of authors with I. V. Danilova, S.A. Mitelman and Bulikeeva, A. Zh. (Antonyuk, V.S., Danilova, I.V., Mitelman, S.A., Bulikeeva, A.Zh., 2015) proposes that the regional social infrastructure is a functional system of providing social services to the population of the territory, participating in the formation of the regional indicator of the quality of life. Botalova, M.E. (Klimenko, O.I., Botalova, M.E., 2019) tried to consider and classify the factors and conditions that determine the dynamics of modern infrastructural capabilities of a regional nature, associating the level of infrastructure development with the level of social and economic development of the region. Bykovskaya, I.V., (Bykovskaya, I.V., 2012) notes one of the aspects of the regional social infrastructure in connection with the growth of intraregional migration of categories of highly qualified workers and the importance of the factor of their choice of target location depending on the level of social infrastructure provision.

Thus, an important objective of the study is the theoretical and analytical substantiation of the relationship between the development of the social infrastructure of the region and the quality of life, the level of social and economic development.

## 2 METHODOLOGY

At the initial stage, a hypothesis was put forward, which is in the assumption of the impossibility of systemic and long-term social and economic development of a specific territory (location, municipality, region, macro region) without predicting the scale of social, social and economic interactions as the basis of regional economic activity.

As part of the verification of this assumption, Krasnodar Krai as a research platform was determined.

The theoretical basis of the study was formed on the basis of selection, study, critical reflection, analysis and assessment of trends in the social and economic development of the model region, presented in strategic documents of territorial planning. To carry out predictive calculations and analytical work, the materials of the Forecast of the development of the long-term social and economic development of the Russian Federation for the period up to 2030, the Spatial Development Strategy of the Russian Federation, 2019 Presidential Address to the Federal Assembly were used, as well as an empirical block of data reflecting the attractiveness of territories of Krasnodar Krai for irrevocable migration of the population with the aim of its. The research instruments are presented by methods of forecasting and economic interpretation of the obtained empirical estimates, as well as by various methods of their graphical visualization.

## 3 RESULTS

### 3.1 Analysis of Social and Economic Prerequisites for the Development of Social Infrastructure

In 2015-2019, the Krasnodar Krai was characterized by a steady, slowly growing resident population and its stable structure: during the period under review, the total population of the territory increased by 3.6% (including 2019, compared with the previous period, by 0.8%), amounting to more than 5.648 million people as of January 1, 2019.

There was a slight trend towards urbanization in the region: for the period 2015-2019 the share of the urban population of the territory increased to 55.18% or by 1.12% in 2019 compared to 2015, amounting to more than 3.116 million people, the share of the rural

population decreased to 44.82%, amounting more than 2.531 million people as of January 1, 2019.

The labor force available for use in the regional economic system of the Krasnodar Krai, at the end of 2018, amounted to 3.369 million people or 60.1% of the total resident population of the territory, the specific estimate of the GRP normalized for this factor in 2018 was 711 thousand rubles per person in current prices and 602 thousand rubles per person in 2015 prices.

In 2018, more than 2.603 million people were employed in legal economic activity on the territory of the region (46.5% of the total resident population and 77.3% of the regional labor force), which ensured the production of GRP per employee at the level of 920 thousand rubles in 2018 (779 thousand rubles in 2015)

A very interesting empirical fact that characterizes the degree of openness of the social and economic system of Krasnodar Krai and the scale of its integration into the national economic space is the proximity of the region GRP and the monetary income of the population of the territory: in 2018, cash incomes amounted to more than 2.28 trillion rubles or 95.1% of GRP (having decreased over 4 years by more than 11.5% in relative terms, including 5.2% over the last year).

According to regional statistics, against the background of a real decline in the population cash income, Krasnodar Krai in 2015-2018 characterized by an increase in the effectiveness of the implementation of the social function of state administration of the territory in relation to the population with incomes below the subsistence level: for 2015-2018, the number of those decreased to the level of 10.9% of the total resident population of the territory, the positive change was 0.8% with stable dynamics for the period under review. At the same time, every tenth inhabitant of the region experienced an acute shortage of cash income and was balancing on the brink of physical survival, which was an urgent and significant regional trend and a problem of promising territorial social and economic development.

### 3.2 Problems of the Regional Social Infrastructure

It should be emphasized that the current level of social and economic development of Krasnodar Krai is actually characterized by the following significant features:

- the transfer of the task of providing local social infrastructure to the municipal level with the

burden of residential real estate developers in terms of the obligation to provide infrastructure for the locations being developed;

- focusing exclusively on specific quantitative assessments of local infrastructural provision, which regional executive authorities are unable to exert real influence on;
- disintegration of the functions of managing the processes of creation and operation of local/municipal social infrastructure facilities and the lack of one-man management at the municipal/regional levels;
- implementation of the main form of support for local processes of infrastructural modernization in the form of targeted regional financing against the background of a constant budget deficit (as of October 1, 2019, the state debt of the region exceeded 110.6 billion rubles, the regional budget deficit in 2019 is projected at level 3.6-4 billion rubles);
- the lack of opportunities to influence the quality of provided social and infrastructure services;
- the lack of a regional system for monitoring the satisfaction of the population of the region and its constituent locations with the level of infrastructure provision and the quality of services provided, which can act as factors of the stability of the regional settlement system, or, conversely, the cause of irrevocable migration.

### 3.3 Review of Forecasts for the Development of Regional Social Infrastructure

In accordance with the social and economic component of the regional Development Strategy for the long term in Krasnodar Krai in 2019-2024 the following significant social trends were recorded and predicted (Strategy, 2018):

- the steady growth of the region population with low reproductive activity and the presence of natural decline, due to growing migration flows;
- the lack of infrastructure capabilities of preschool and school blocks of the regional educational system;
- the growth of intraregional differences in the provision, accessibility and quality of health care services;
- lack of opportunities to attract investment financing in the field of physical culture and mass sports, as well as culture due to the lack

of commercial attractiveness of such areas of investments;

- a consistently high level of social protection and services for vulnerable groups of the

population against the background of operational problems in the functioning and development of the corresponding infrastructure of federal subordination.

Table 1: Forecast of the dynamics of the availability and level of use of the components of the municipal social infrastructure of the city of Krasnodar for the period up to 2027 (in accordance with “Program for the Comprehensive Development of Social Infrastructure of the Ministry of Defense of Krasnodar for 2017-2027”).

Target indicator	Measuring unit	2019	2020	2021	2022/ 2027
Additional places in organizations of preschool education of municipal subordination	places	3,900	1,0200	1,7300	171,900
Dynamics of the number of the contingent of general education organizations	thousand people	138.00	140.20	143.50	156.80
Additional places in general education organizations	places	56,000	22,000	26,500	1,053,250
Proportion of schools meeting the classroom standard	%	86.80	89.30	95.20	1,000
Proportion of schools with one-shift educational process	%	250	420	510	1,000
Dynamics of the number of stationary healthcare facilities for the city population	unit	1,220	1,240	1,260	1,390
The growth of the involvement of urban resident population in systematic sports and physical education	%	46.40	47.10	48.80	49.80
Dynamics of the number of citizens involved in systematic sports and physical education	thousand people	407.30	408.30	409.30	409.60
Forecast of regular users of municipal library resources	thousand people	148.00	154.00	162.10	199.80
Dynamics of members of cultural associations and clubs	people	57,530	69,830	78,030	78,030
The growth of the contingent of students in the field of art and culture in the format of additional education	people	123,100	125,200	125,200	141,200

At the same time, it is planned to achieve specific results in terms of infrastructural support of municipal social and economic processes:

- increasing the level of accessibility of municipal organizations of preschool education to 100% and eliminating queues for kindergartens;
- full transition to a one-shift mode of functioning of municipal comprehensive schools;
- an increase in the number and capacity of municipal health care organizations in

locations where intensive new construction is underway;

- increasing the infrastructural capabilities of the population of the municipality in terms of access to municipal library funds and cultural and leisure opportunities.

## 4 CONCLUSIONS

The central result consists in the formulation of the author's position on the research topic, which consists

in emphasizing the impossibility of systemic and long-term social and economic development of a specific territory (location, municipality, region, macro region) without changing the existing scientific and managerial approaches to understanding the fundamental subjectivity of the resident population as the main beneficiary of the regional economy and solving the national economic problem of a regional scale to increase the quality and scale of social, social and economic interactions as the basis for progressive and productive local and regional economic activity.

Strengthening such forms of activity, in turn, requires the implementation of local and regional scenarios of expanded reproduction and social and economic development, which are impossible outside the infrastructural form of organizing the corresponding processes. The needs of the population of the territory for infrastructural services are specific reasons and should act as the basis for choosing directions for the development of regional social infrastructure as a critically important component of the regional economy, which determines the rates and proportions of regional production and reproduction processes.

The applied implementation of the priorities of sustainable, balanced and systemic regional social and economic development currently requires the advanced development of the regional and the municipal and local social infrastructure that form it, while the growth of the regional competitiveness of Krasnodar Krai directly depends on the improvement of the characteristics of the reserve group of regional labor potential, including in terms of developing and improving the characteristics of regional human capital - permanent residents of the territory with entrepreneurial and innovative competencies. Such dynamics is possible only with full-fledged social and infrastructural support of local, municipal and regional scale and requires appropriate targeted efforts, the implementation of which will ensure the mobilization and productive use of internal social and economic factors and reserves in the regional economy.

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